

A Complete Bibliography of Publications in *IEEE Spectrum* (2020–2029)

Nelson H. F. Beebe
University of Utah
Department of Mathematics, 110 LCB
155 S 1400 E RM 233
Salt Lake City, UT 84112-0090
USA

Tel: +1 801 581 5254
FAX: +1 801 581 4148

E-mail: beebe@math.utah.edu, beebe@acm.org,
beebe@computer.org (Internet)
WWW URL: <https://www.math.utah.edu/~beebe/>

05 April 2024
Version 1.31

Title word cross-reference **2** [Sch21e]. **2.0** [Moo24a, WB21].
200-Year-Old [Smi21f]. **2020** [Ano20t].
2021 [Ano21-115]. **20th** [Moo20c]. **22**
[Bro22b].

\$ [Ulr20b]. **\$1** [Pot20b]. **\$100**
[Sch22a, Sch22d]. **3** [And20f]. **\$74** [GA20]. **>**
[Coo22, Gen22]. **2** [Cas23c].

000-Qubit [Cho23].

1 [Ano20-51, Koz23d, Ros21]. **100** [Cas22f].
100th [Moo22c]. **118** [Smi20h].
143-Year-Old [Zor22c]. **1800s** [Ano20-78].
19 [And20b, Cha20a, Gib21, Ham20a,
Has20a, Hut20, NS20, Per20a, Pes20e,
Pes21a, Pre20, SHD20, SZ20, Wal22, YS20].
1935 [Bro22b]. **1950s** [Hoc22]. **1970**
[McC20].

3D [BF24, Moo22a, SC23].

5 [Ros20a]. **536** [Bre20]. **5G**
[Hig20i, Koz21b].

6G's [Pou22].

75-Year-Old [Abb23].

= [BSAH21, Pal22].

A.A.C. [Smi20h]. **Aalyria** [Koz23b]. **Able**
[Smi21e]. **Accelerating** [Ulr21, Gar20].

accelerators [Gar20]. **Access** [Smi22a, Gol22b, Koz21a, Ano21-57, Ano21-58, Ano22-59]. **Accident** [Har21, Ros22a]. **Accordingly** [KK21]. **Accurately** [Sla21]. **Act** [Ack22a, Pat23a]. **Act-Funded** [Pat23a]. **actions** [RS23]. **Activity** [Sla21]. **Actually** [Smi21k]. **Adam** [Der22a]. **adapt** [ALRW21]. **adaptations** [Gol24b]. **add** [Zel20]. **adds** [Gol22f]. **ADHD** [And20e]. **Adjusted** [Per22c]. **Administers** [KK21, Ano20h]. **adopting** [Ras20b]. **Adrian** [Ano21a]. **Ads** [Ano21-61]. **advanced** [Arm20]. **Advances** [And20c, WAC⁺20, Moo20b, Pes21a]. **advancing** [Nor20a]. **Advantage** [Jag22]. **Advertisement** [Ano20-103, Ano20-104, Ano21-27, Ano21-29, Ano21-30, Ano21-28, Ano21-31, Ano21b, Ano21c, Ano21d, Ano21e, Ano21f, Ano21g, Ano21h, Ano21i, Ano21j, Ano21k, Ano21l, Ano21m, Ano21n, Ano21o, Ano21p, Ano21q, Ano21r, Ano21s, Ano21t, Ano21u, Ano21v, Ano21w, Ano21x, Ano21y, Ano21z, Ano21-63, Ano21-111, Ano21-57, Ano21-58, Ano21-128, Ano21-59, Ano21-137, Ano21-141, Ano21-145, Ano22-46, Ano22-47, Ano22-49, Ano22-48, Ano22-50, Ano22-51, Ano22a, Ano22b, Ano22-27, Ano22-28, Ano22-29, Ano22-30, Ano22-31, Ano22-32, Ano22-33, Ano22-34, Ano22-35, Ano22-36, Ano22-37, Ano22-38, Ano22-39, Ano22-40, Ano22-41, Ano22-42, Ano22-43, Ano22-44, Ano22-45, Ano22c, Ano22d, Ano22e, Ano22f, Ano22g, Ano22h, Ano22i, Ano22j, Ano22k, Ano22l, Ano22m, Ano22n, Ano22o, Ano22p, Ano22q, Ano22r, Ano22s, Ano22t, Ano22u, Ano22v, Ano22w]. **Advertisement** [Ano22x, Ano22y, Ano22z, Ano22-59, Ano22-131, Ano23b, Ano23c, Ano23-28, Ano23-29, Ano23-30, Ano23-31, Ano23-32, Ano23-33, Ano23-34, Ano23-35, Ano23-36, Ano23-37, Ano23-38, Ano23-39, Ano23-40, Ano23-41, Ano23-42, Ano23-43, Ano23-44, Ano23-45, Ano23-46, Ano23-47, Ano23-48, Ano23-49, Ano23-50, Ano23-51, Ano23-52, Ano23-53, Ano23d, Ano23-54, Ano23-55, Ano23-56, Ano23-57, Ano23-58, Ano23e, Ano23f, Ano23g, Ano23h, Ano23i, Ano23j, Ano23k, Ano23l, Ano23m, Ano23n, Ano23o, Ano23p, Ano23q, Ano23r, Ano23s, Ano23t, Ano23u, Ano23v, Ano23w, Ano23x, Ano23y, Ano23z, Ano23-27, Ano23-59, Ano24a, Ano24b, Ano24c, Ano24d, Ano24e, Ano24f, Ano24g, Ano24h, Ano24i, Ano24j, Ano24k, Ano24l, Ano24m, Ano24n, Ano24o, Ano24p, Ano24q, Ano24r, Ano24s, Ano20p, Ano21-120, Ano21-144, Ano22-55]. **Advertisements** [Ano20a, Ano20b, Ano20c, Ano20d, Ano20e, Ano21-32]. **advocates** [Gen23c]. **aerosol** [Ano20h]. **Aerospace** [JAR24]. **affects** [Smi22d]. **Affordable** [WPBS23]. **Africa** [Smi22a]. **African** [Fai21, Moo20c]. **After** [Zor20, Zor22d, Hoc22, Ros20a, Smi20h, Zor23b]. **Afterlife** [WC23]. **Aftermarket** [Usk21]. **Again** [Sch21e, Str22b, Cas20i, DM20, Smi22j]. **Against** [Mar23j, Ros23b]. **Age** [Ack22a, Bea22, Pes21b, Lee20]. **ago** [Pat24b, Tho21b]. **agricultural** [Fai21]. **agricultures** [Per20n]. **Ahead** [Ano21-55, Gol23d, Gol23h, And20g]. **AI** [Abb23, Ano20f, Ano21-113, Ano23a, BSG22, Baj22, BBS23, Bro23c, Bro21, BSAH21, Cal22, Cas20d, Chi21, CHM21, Gen24c, Gen24e, GH23, Gol22a, Gol22b, Gol23a, Hsu20a, Koz23a, Koz24b, Mar23k, MSS21, Moo22b, PN20, Per20f, Sch21a, Scu20b, Str21, Str22a, SZ23, Str24a, VA23, Wal20a]. **AI-assisted** [Hsu20a]. **AI-Generate** [VA23]. **AI-Generated** [Koz23a]. **aided** [Hoc22]. **aides** [Bar20]. **aids** [Sch20b]. **Aim** [AZPC22, Smi23a]. **Aims** [Gen23e, Dum20]. **Air** [AZPC22, NG23, Smi21n, DM20, Gal21b, Smi20h]. **Air-Quality** [Smi21n]. **Air-Taxi** [AZPC22]. **aircraft** [Ros21]. **airliner** [JAR24]. **Airliners** [Sch21e, Smi21e]. **airplanes** [Cri20]. **Airship** [Koz23d]. **AIs** [Cho21, Usk21]. **alchitry** [Cas20f]. **Alerts** [Fit21]. **Alexa**

[Has20b]. **Algebra** [Smi22c]. **Algorithm** [Wal22]. **Algorithmic** [Lau24]. **Algorithms** [RZ21, Per20e, Per21b, Str20b]. **Alien** [BMRW20]. **All-Digital** [Bow21]. **All-Electric** [Ulr21]. **All-Metal** [Cha21a]. **All-Purpose** [Chi21]. **all-seeing** [GAG20]. **All-Sky** [Sch23c]. **Allaire** [Cas22d]. **allowed** [Tho21b]. **allows** [Bra21]. **Almost** [Jon24, Per21c, Svr23, Sch21b]. **alone** [Rae20]. **along** [Pat22]. **already** [Pat24a]. **Also** [Pat23b, AFH22]. **Alt** [Shi22]. **Alt-Tech** [Shi22]. **Altarock** [Gal20a]. **alternative** [MMP22, Moo21]. **Alternatives** [Der22a]. **Alto** [Bro23a]. **Am** [Bro22b]. **amazing** [Cas22e]. **Amazon** [Has20b, Jon23b]. **ambition** [Zor22a]. **AMD** [Moo23a]. **America** [Ano20t]. **American** [Moo20c]. **Amethyst** [Sar20]. **Ammonia** [Gal21a]. **amounts** [Jaf22]. **Amp** [Pau22]. **Amplifiers** [Shi22]. **Analog** [BSAH21, CAS24a, Cas20b]. **Andrew** [Jon23a, Str22a]. **angel** [Per20k]. **Anguilla** [Koz24b]. **Angus** [Der22g]. **Ankur** [Der21h]. **anniversary** [Moo22c]. **Annual** [Cas21d, Per22c]. **anodes** [And20c]. **Anonymous** [Hig20a]. **Antenna** [Cha21a, Sch22b]. **antennas** [Cas22b]. **Anthrax** [Mar21h]. **antibody** [And20b]. **Antigenic** [Wal22]. **antiracist** [Hsu20a]. **antiviral** [Ano20h]. **antivirals** [Scu20b]. **Anton** [Koz23a]. **any** [And20f, RK22, Svr23]. **Anyone** [Cha23]. **Anything** [Lev21]. **Anytime** [Bro21]. **anywhere** [YS20]. **Aperture** [Van23]. **Apocalypse** [SZ23]. **Apollo** [Cas22g]. **Apollo-Era** [Cas22g]. **App** [Fai21, BBS23, Per20l]. **app-controlled** [Per20l]. **appear** [And20c, WB21]. **Apple** [Smi22h, Per21a]. **Applying** [Ano20f]. **approach** [Cly22]. **apps** [Hsu20b]. **AR/VR** [Per20j]. **Arc** [Mar21i]. **architect** [Der20]. **Architecture** [Kas23]. **Arctic** [Rab22]. **Arduino** [Sch23b]. **Arduino-based** [Sch23b]. **Argotec** [BD22]. **Argumentative** [Ano23a]. **Arjun** [Goo23a]. **Arm** [Ano23-133, FBMI23]. **Arms** [You22, Ros20a]. **Army** [Ack21b]. **Arpanet** [Cro20]. **Arrays** [BF24]. **Art** [Fra21, Jon22d, Koz23a, McC20]. **Arthritis** [Dol23a]. **Artificial** [Gol23a, KK21, Zim21, Fun20, Hut21]. **Artist** [Gol23f, WB21]. **Asad** [Per22a]. **Ascendant** [Smi21j]. **Ashore** [Fai24]. **Asia** [Fru20]. **aspect** [Smi22d]. **assisted** [Hsu20a]. **Assistive** [Jon23a, Gol22e]. **Asteroid** [GO22]. **astray** [Hut20]. **Astronaut** [Ste21]. **athletes** [Pat22]. **Atom** [Rad20]. **Atom-thick** [Rad20]. **Atomic** [CFPP22]. **Atomically** [WB21]. **Attack** [Ano20g]. **attain** [And20i]. **attracting** [Per20f]. **Audio** [Gan24, LDO22, Pau22, Sch20b]. **Augmented** [Ros22a, HVW20, Per21a]. **augmented-reality** [HVW20, Per21a]. **August** [GO22]. **Australia** [Fai23b]. **Authenticators** [TB21]. **author** [Ano20p]. **autism** [Bar20]. **autistic** [HVW20]. **Autodidacts** [Jon23c]. **Autoimmune** [Dol23a]. **Automakers** [Cha23]. **automated** [Zor23c]. **Automatic** [Ros22c]. **Automating** [Scu20b]. **Automation** [Coo21, Mar23k, Has20b, Scu20b]. **Automaton** [Ano20h, Fru20]. **Autonomous** [Ack22c, Ack23c, Ano20i, Der22g, LG20, Ros23a, Smi23a, AG20, And20a, Ano20-90, Der22h, Per20l, Wea20]. **autonomy** [And20g]. **AV** [And20g]. **available** [Pou22]. **Avatar** [Ack23a]. **Avicena** [Moo23b]. **away** [Per22a]. **AWS** [Ano20-95]. **Axial** [GP22]. **Axial-Flux** [GP22]. **AxiDraw** [Cas20g]. **Ayar** [Moo23b]. **B** [Der21g]. **Back** [Ano20g, Ano20j, Ano20k, Ano20r, Ano20q, Ano20-69, Ano20-47, Ano20-48, Ano20-81, Ano20-92, Ano20s, Ano20-80, Ano20-102, Ano21-49, Ano21-50, Ano21-47, Ano21-48, Ano21-62, Ano22-46, Ano22-47, Ano22-50, Ano22-122, Ano22-132,

Cas23c, Gol23d, Jon24, LDO22, Luc20a, Rab22, WC23, Ano20-74, Ano20-75, Ano20-85, Red20, Ros20a, Sch21b, Ano20l, Ano20m, Ano20n, Ano20o, Ano21-33, Ano21-34, Ano21-35, Ano21-36, Ano21-37, Ano21-38, Ano21-39, Ano21-40, Ano21-41, Ano21-42, Ano21-43, Ano21-44, Ano21-45, Ano21-46, Ano22-52, Ano22-53, Ano22-54]. **Backbone** [Tow21]. **backers** [AS22]. **backpack** [Ham20d]. **backup** [Sch20c]. **Bad** [Cho21, Smi21l]. **baggage** [GAG20]. **Baidu** [Smi23a]. **Balance** [AFH22]. **Balloons** [Sch22b]. **ban** [SG22]. **Bandgap** [Mis23]. **bands** [RHBM22]. **Bandwidth** [BD22, FBMI23, Pou22]. **Bang** [Sch21b]. **Bangladesh** [Fai20a]. **Bank** [Pau22]. **bare** [Cas20h]. **bargain** [Ano20-45]. **Barometer** [Sch22a]. **barrier** [Moo20e, Pan20]. **Based** [Sch23a, Tei23, Ack23d, Cas23d, Moo23b, Sch23b, Zor20]. **Batteries** [Cha24, Smi21e, And20c, Ano20i, Cri20, Fai21, Kum21, MW20, Moo21, Pat20, Ulr20b]. **Battery** [Bow21, GH23, Kum21, Mur23, Kum20]. **Battle** [Cas20b]. **Battlefield** [Ack21b]. **battling** [YS20]. **Be** [Cas22c, Ack23d, And20b, Ano20-68, BS22, Cas22g, Cas23d, Cas24c, Cho21, CHM21, DM20, FBMI23, GOL24a, Gui20, Hsu20a, Hsu20b, Moo22c, Pat22, Pot20b, Sch21d, Sch22e, Smi21d, Smi22l, Smi23c, VH20, WPBS23]. **Beam** [Smi21d]. **beamed** [Jaf22]. **Beams** [Mos22]. **Beat** [Ack23c, Cha24]. **Beatles** [Arm20]. **Became** [Deg24, Ano20-68]. **Because** [Ano21-27, Ano22-55]. **Become** [Ano20p, Ano21a, MS22, Ros22c]. **Becomes** [SH22b]. **Becoming** [TGLM21]. **Been** [Smi21m, Der23c, GOL24a, Koz24b, Per21b, Smi22g]. **Before** [Gen22, Jon23k, NG23, Pes21a, Sch21b, BMRW20, Dut22]. **began** [Tem20]. **begin** [Koz23d]. **beginning** [Smi22d]. **Begun** [Usk21, Ulr20c]. **Behemoths** [Fai23a]. **Behind** [AZPC22, Koz23a, She24, HP20, Hut20]. **Behold** [Mar24a]. **Being** [GEN24b, Pes20a]. **Bekeryte** [GEN24b]. **Bell** [Der21e]. **bellwether** [Ano20s]. **Below** [CPBZ21]. **bend** [ZL20b]. **bendable** [Som21]. **bespoke** [Dum20]. **Best** [Ack23c, Ano21-144, Ano22-131, Ano22-132, Der21g, GP22, Sto23, Wat24, Ano20-103, Ano20-104, Ano21-145, Pot20b, Wal20a]. **Bet** [Ano21-53, Koz24c]. **bets** [Rak24, Sch21a, Ulr20b]. **Better** [Baj22, Bro23c, BSAH21, Gol22a, Ano21-91, Arm20]. **betting** [Scu20b]. **between** [Ano20-79]. **Beware** [Bro22d, Ros22b]. **Beyond** [Ano21-124, CAS24a, PSD22, BS22, Ros20a]. **bias** [Str20b]. **biased** [Hut21]. **Big** [Ano21-53, Ano21-54, Ano21-55, Ano21-56, Ano21-51, Ano21-52, Ano21-114, Ano21-136, Ano22-56, Ano22-57, Ano22-58, Cly20, Der22a, Koz21a, Koz24c, LH24, McC20, Ras20b, Sch24, Str22a, Ano20-71, BS22, DM20, Ulr20b, Sch21b]. **Biggest** [Hub24]. **Bike** [Sch21d]. **bikes** [MMP22]. **billion** [Ulr20b]. **Biofuels** [MW20]. **Biology** [Ano20q]. **Bionic** [Str22b, SH22b, You22]. **Bionic-Hand** [You22]. **Biosensors** [Per20a]. **birds** [Smi20c]. **Bit** [Coo21]. **Bitcoin** [Per22b]. **Bits** [Cas22g, Sar20]. **Black** [Mar21d, Per20b, Bou20, Moo20c]. **BlackFly** [Zor23c]. **Blessin** [Sac20]. **blimp** [Rae20]. **Blind** [Jon23a, SH22b, Tho21b]. **Bloat** [Hub24]. **blockchain** [Per20j, Sto20]. **blocks** [And20b]. **Blood** [KK21, Wal24]. **Blue** [Moo23b]. **board** [Ack21a, Lew20, Per21a, RG20]. **Boat** [Smi21d]. **Body** [Smi21e, SH22b, Ano20r, SMD20, Som21]. **body-conforming** [Som21]. **Boeing** [JAR24]. **Bold** [RS23]. **bolsters** [CFPP22]. **Bombs** [Smi22i]. **Bon** [And20a]. **Boom** [Bro22c, CFPP22, Jag22, Koz24b, Str21, Ros21]. **boom-and-bust** [Str21]. **Boost** [Bow21, Bro23c, Cha24, Fun20, Moo20b]. **Boosters** [Bro22a]. **Boot** [Ack21b, Koz24a]. **boozy** [Ano20-100]. **boredom** [Wal20b].

Borkowski [Gen24d]. **Born** [Bro22b, Mar20a]. **Boston** [Ack22b]. **Both** [Gan24, Gol24c, VA23, Hsu20b]. **Box** [Jon23h, Mar21d, Sch20d]. **boxes** [Ack22b]. **Brain** [AS22, Bou21, Cha21b, Dut22, Jon23c, Wal24, Ack20, Dol23b, Gen24c, SG22, WAC⁺20]. **Brain-Controlled** [Jon23c]. **Brain-Implant** [Wal24]. **brain-inspired** [Gen24c]. **Brakes** [Ros22c]. **braking** [Ros22c]. **Brand** [CAS24a]. **Break** [Pau22]. **Breaking** [Pan20, Hec20]. **breakout** [Lew20]. **breakthrough** [And20b, Pri21]. **Breeder** [Pat23b]. **Brew** [Szk21]. **Brewed** [Ack23d, Cas23d]. **Bricked** [Pes21b]. **Brij** [Der23a]. **brilliance** [Zor22a]. **Bring** [WC23]. **Bringing** [Red20, Lee20]. **brings** [Gen23b]. **briny** [Pat24a]. **Brittle** [Cho21]. **broadband** [Hig20h]. **broadcast** [Ano20-46]. **Brooklyn** [Ano20-100]. **Brutal** [Cha21a]. **Bugs** [Sca22]. **Build** [BF24, Cas20e, Jon23c, Sch20c, Szk21, Cro20, Per22b]. **Building** [Bro22c, CHM21, Der22e, Pat23a, Smi20a]. **buildings** [AF23]. **Builds** [Der22g, Kum21]. **Built** [Cha21b, Coh22, Sch24]. **Buolamwini** [Str24a]. **buoyancy** [Rae20]. **Buoyant** [Fai23a]. **Buried** [CPBZ21, Sch22d]. **Bursts** [Sch22a]. **Buses** [Ano22-56]. **business** [Pes20d, Rak24]. **bust** [Str21]. **Buy** [Zor23c, GA20].

C [Cas23c]. **C64s** [Ake23]. **cab** [Ulr20a]. **cable** [Koz21a]. **calculator** [Cas20h]. **California** [Ano20-101]. **Called** [GO22]. **Calling** [MZR21, Mar20b]. **Calls** [Smi22c, Ano20-79]. **Calories** [Mar21b, Sla21]. **Camera** [Sch23c, PK20]. **camera-town** [PK20]. **Cameras** [Gob23, Per21a]. **Camp** [Ack21b]. **Campaign** [SG22]. **Can** [Ack22a, Ack23b, AF23, BVKR23, Bra21, Car24, Cas22g, Cas23c, Cha21a, Cha24, Cly23, DM20, FBMI23, FK21, Gol22a, Hsu20a, Hsu20b, MZR21, NG23, Sch21d, Sch23a, Sha23, Smi21d, Szk21, Wal22, Zor23c, Ack22b, AFH22, BF24, BMRW20, Cas20a, Cas20f, Cas24c, Cho21, Der20, FOSMD23, Fra21, Gib21, Gol22b, GA20, Hec20, LA22, PN20, RHBM22, Sch21a, Scu20b, SHD20, Svr23, Wal20a, ZL20b]. **canceling** [Ros20b]. **cancellation** [Bra21]. **cancer** [Arm20]. **candidate** [Per20f]. **can't** [RK22, Smi22k, Wal20a]. **Capable** [LH24, GA20, Sar20]. **capacity** [Fai23b]. **Capture** [Pat24a, Sch23c, Ano20-100, Gal21b]. **car** [Ano20-69, GA20, Per20k, Smi23a]. **Carbide** [MZR21]. **Carbon** [Gal21b, Pat24a, Smi21j, Smi22b, Smi22c, Ano20-100, Gal21a]. **carbon-capture** [Ano20-100]. **Carbon-Sucking** [Gal21b]. **card** [Per22b]. **care** [Str20b]. **Careers** [Ano20-95, Ano21a, Ano21-60, Ash23, Bar20, Cas20i, Der20, Der21a, Der21b, Der21c, Der21d, Der22a, Der22g, Der23a, Der23c, Der23b, Der23d, GEN24b, Gen23a, Gen23b, Gen23c, Gen23d, Gen24c, Gen24d, Gen24e, Gol23f, Per20j, Per20m, Per20i, Sac20, Zor23a]. **cargo** [DM20, Gal21a, Pat24b, Ros22d]. **carry** [Hec20]. **Cars** [Ack21a, Mar23k, WPBS23, And20g, Hsu20c, Pan20, RHBM22, Ulr20c]. **Carves** [Cas22d]. **Case** [Abb23, Ano21-140, Ano21-141, BSG22]. **cat** [Per21b]. **Cate** [Koz24b]. **Catfish** [Mar21a]. **cathode** [Cas20e]. **cathode-ray** [Cas20e]. **cathodes** [And20c]. **CDs** [Nor20a]. **Celebrate** [Gol22d]. **Celebration** [Ano21-142]. **cell** [WAC⁺20]. **Cellphones** [Lau23b]. **cells** [Gal21a, Ulr20b, WAC⁺20]. **Center** [Jon23f, Gol22e, ZL20a, Gen24d]. **Central** [Gol21]. **Century** [Mar23j, Lee20, LDO22, Moo20c, Tho21b]. **century-old** [Lee20, LDO22]. **CEO** [Koz23b, Zor23a]. **CEOs** [NS20]. **Cerf** [Per23]. **Certifiably** [Pes20b]. **chain** [RG20]. **Chakraverty** [Gen23d]. **Challenge** [Ack22c, Smi22d]. **Challenges**

[Gol23h, NG23]. **champion** [Cas20b]. **Change** [Bro22c, FK21, Tei23, MW20]. **Changed** [Gol22c, NS20]. **Changing** [SC23, Ano20-45]. **channel** [SMD20]. **characteristic** [Smi22j]. **Characterization** [Ano21-138, Ano21-137]. **characters** [Cas20a]. **Charge** [Ano22-56]. **charging** [Ulr20a]. **Chasing** [Sch22b]. **Chatbot** [Gol23g]. **Cheap** [Sch22b]. **Cheaper** [MD23, Ros23b]. **Checked** [Eis23]. **Chenming** [Per20c]. **Chess** [Gol22b, Mar23a]. **chicken** [Smi20g]. **Chief** [CD21]. **Chile** [SG22]. **China** [And20i, Pat22, Pat23b, Sto20]. **Chinese** [Smi23a]. **Chip** [Gen24a, Kim22, LA22, WPBS23, Moo20e]. **Chiplets** [Moo20b, Moo23a]. **chipmaker** [Rak24]. **Chips** [Moo22b, Moo24b, Ano20-87, Cho20, Sar20, Pat23a]. **Choong** [Kim22]. **Choong-Ki** [Kim22]. **Chris** [Koz23b]. **Christian** [Bar20]. **Chronicles** [Gol23f]. **Circa** [Mar23a]. **Circuit** [Bow21, RG20]. **circuitry** [Cho20]. **Circuits** [BSAH21, Der22d, MZR21]. **cities** [Ong20, Sto20]. **Citizen** [Gol23e]. **city** [MMP22]. **civilization** [Gol22c]. **claimed** [Der22f, Pot20b]. **Claiming** [Smi20b]. **Clapping** [Mar24d]. **Clark** [Zor23a]. **Clash** [Koz21b]. **clashed** [McC20]. **Class** [Jon22f, Zor23c]. **classic** [Cas20h]. **classical** [CD21]. **Classified** [Ano21-61]. **Cleaning** [GEN24b]. **clear** [Smi22d]. **Clever** [Ash23, Hoc22]. **click** [Cas24c]. **clickbait** [BSG22]. **Climate** [Bro22c, FK21, Tei23, Pat22]. **climate-friendly** [Pat22]. **clinics** [Der20]. **Clippers** [Bro22b]. **Clock** [Wat24, Cas20e]. **close** [Koz23b]. **cloud** [Pes21a, RS23]. **Clueless** [Cha23]. **Clustering** [Cas21c]. **CMOS** [Moo24a, PK20]. **Coal** [JJS22]. **cockpit** [Mar20b]. **cockpits** [Der20]. **code** [Cas20a]. **Coding** [VA23]. **Cognitive** [BMRW20]. **coil** [Sch20b]. **Cold** [Abb23, Zor22e, Arm20]. **Coldness** [AF23]. **collaborated** [McC20]. **collaborating** [JAR24]. **collaborative** [Cro20]. **Collapse** [Smi22m]. **colleagues** [Per20b]. **collect** [Sch22c]. **Color** [De 22, HF22, SC23]. **Colossus** [Mar20j]. **combat** [Str24b]. **Combating** [Ano21-62]. **combination** [SZ20]. **Combined** [Bro23a]. **Combines** [GP22]. **combustible** [Zor22a]. **come** [LSM23, Pal22]. **Comes** [Dum23, Moo22b, Wat24, Zor22e, And20e, Ano21-113, Per20]. **Coming** [GOL24a, Moo24b, Tow21, Lau24, Sch20a]. **command** [Ano20-50]. **command-print** [Ano20-50]. **commercial** [Ros21]. **commercialize** [Cly20]. **Commercializes** [Der22c]. **Commodordion** [Ake23]. **common** [Koz24c]. **Comms** [Cas23c]. **communicate** [Ong20]. **communication** [Ano20-79, Mit20]. **Communications** [Ano21-115, Zor22b]. **Companies** [WC23, Ack24, Cly20, Per20a, Per20f, Ras20b]. **Company** [Cho23, Koz23a, Smi211, Wal24, Has20b]. **comparable** [SB22a]. **Compelling** [Gen23d]. **Competitors** [Rak24]. **Compiling** [CG23]. **complacency** [Pes20c]. **complaint** [Koz24c]. **complement** [MMP22]. **completely** [Pan20]. **complexity** [Gol22f]. **Complicated** [You22]. **components** [Koz21b]. **Compression** [Per21b]. **Compute** [Moo24b]. **Computer** [CAS24a, Cal22, Kas23, Mar23a, Sch23b, Sch24, Per20o, Sar20, VH20]. **Computer-vision** [Cal22]. **computers** [AMK⁺20, BS22, Gen24c, VH20]. **Computing** [Bro23a, CD21, Moo22b, Moo23b, Ham21, Pes21a, Ras20b, Sch21a]. **COMSOL** [Ano20t, Ano21-29, Ano21-30, Ano21-28, Ano21-63, Ano23-59]. **Concept** [Smi22]. **Concerning** [CD21]. **Conclusion** [Mar23k]. **Concrete** [Ano20u]. **conditioning** [Smi20h]. **Conditions** [Rab22]. **Conference** [Ano21-115, Ano20t]. **confidential** [Ras20b]. **Confinement**

[BBFS22]. **conforming** [Som21]. **Congress** [Fai23c]. **Conjurer** [Per21b]. **connected** [BMRW20, Ong20]. **connected-vehicle** [Ong20]. **Connected** [FOSMD23]. **Conquer** [Ack22c]. **consensus** [Cro20]. **Consent** [WC23, Hig20c]. **Consequential** [Gol23f]. **conserve** [Gar20]. **consortium** [NG23]. **Constructing** [VH20]. **Consumer** [Gob23, Per20g, Der22f]. **Consumers** [Cha23]. **contact** [Hsu20b, Pes21a]. **contact-tracing** [Hsu20b]. **contacts** [Cas22e]. **Content** [Str24b]. **Contents** [Ano20v, Ano20w, Ano20x, Ano20y, Ano20z, Ano20-27, Ano20-28, Ano20-29, Ano20-30, Ano20-31, Ano21-64, Ano21-75, Ano21-65, Ano21-66, Ano21-67, Ano21-68, Ano21-69, Ano21-70, Ano21-71, Ano21-72, Ano21-73, Ano21-74, Ano22-60, Ano22-68, Ano22-69, Ano22-70, Ano22-71, Ano22-61, Ano22-62, Ano22-63, Ano22-64, Ano22-65, Ano22-66, Ano22-67, Ano23-60, Ano23-65, Ano23-66, Ano23-67, Ano23-68, Ano23-69, Ano23-70, Ano23-61, Ano23-62, Ano23-63, Ano23-64, Ano24t, Ano24u, Ano24v, Ano24w, Ano20-98, Ano21-113]. **Continent** [Smi22a]. **Contributors** [Ano20-32, Ano20-33, Ano20-34, Ano20-35, Ano20-36, Ano20-37, Ano20-38, Ano20-39, Ano20-40, Ano20-41, Ano20-42, Ano20-43, Ano21-76, Ano21-87, Ano21-77, Ano21-78, Ano21-79, Ano21-80, Ano21-81, Ano21-82, Ano21-83, Ano21-84, Ano21-85, Ano21-86, Ano22-72, Ano22-80, Ano22-81, Ano22-82, Ano22-83, Ano22-73, Ano22-74, Ano22-75, Ano22-76, Ano22-77, Ano22-78, Ano22-79, Ano23-76, Ano23-77, Ano23-78, Ano23-79, Ano23-80, Ano23-81, Ano23-71, Ano23-72, Ano23-73, Ano23-74, Ano23-75, Ano24x, Ano24y, Ano24z, Ano24-27]. **Control** [Ano21-138, Ano21-137, FBMI23, SHD20]. **Controlled** [Jon23c, Per20l]. **controversial** [Sch22c]. **conventional** [Ong20]. **Conversation** [Gol23g]. **Convolutional** [Fra21]. **Cool** [Gen24d, AF23]. **COP26** [Smi22c]. **Copy** [Cha21b, Per20o]. **Core** [Cas22g]. **Corners** [RHBM22]. **coronavirus** [And20b, Ham20a, Per20e, Wal20a]. **Corporate** [HS23]. **Correction** [BS22]. **Cost** [TGLM21]. **Costliest** [Smi22d]. **Costly** [You22]. **costs** [Gar20, Moo20b]. **Could** [BD22, CP21, Pat23b, Smi21j, TB21, Wal21, WC23, AMK⁺20, Cho20, CHM21, Gal20a, Gal21a, Gar20, Gui20, Jes21, LCBH20, Moo24b, Ong20, Pat20, Pat24b, Per21a, Raf20b, RS23, WB21]. **Count** [Sla21, Hig20e]. **Counterfeiters** [TB21]. **Counting** [Mar21b]. **Countries** [Smi21k]. **Country** [Kim22, Fai23b, JJS22]. **Courts** [Smi23c]. **Cover** [Ano21-88, Ano21-89, Ano21-90, Ano21-92, Ano21-93, Ano21-96, Ano21-103, Ano22-95, Ano22-103, Ano22-88, Ano22-96, Ano22-104, Ano22-89, Ano22-97, Ano22-105, Ano22-90, Ano22-98, Ano22-106, Ano22-91, Ano22-99, Ano22-107, Ano22-84, Ano22-92, Ano22-100, Ano22-85, Ano22-93, Ano22-101, Ano22-86, Ano22-94, Ano22-102, Ano22-87, Ano22-112, Ano22-113, Ano22-114, Ano22-115, Ano22-116, Ano22-117, Ano22-118, Ano22-119, Ano22-120, Ano23-82, Ano23-96, Ano23-105, Ano23-88, Ano23-97, Ano23-106, Ano23-89, Ano23-98, Ano23-107, Ano23-90, Ano23-99, Ano23-108, Ano23-91, Ano23-100, Ano23-83, Ano23-92, Ano23-101, Ano23-84, Ano23-93, Ano23-102, Ano23-85, Ano23-94, Ano23-103, Ano23-86, Ano23-95, Ano23-104, Ano23-87, Ano23-112, Ano23-113, Ano23-114, Ano23-115, Ano23-116, Ano23-117, Ano23-118, Ano23-119, Ano23-120, Ano23-121, Ano23-122, Ano24-28, Ano24-31, Ano24-34, Ano24-29, Ano24-32, Ano24-35, Ano24-30, Ano24-33, Ano24-36, Ano24-38, Ano24-39]. **Cover** [Ano24-40, Ano24-41, Ano20j, Ano20k, Ano20l, Ano20m, Ano20n, Ano20o, Ano20-52, Ano20-53, Ano20-54, Ano20-55, Ano20-56, Ano20-57, Ano20-58, Ano20-59, Ano20-60, Ano20-61, Ano20-62, Ano20-63,

Ano20-64, Ano20-65, Ano20-74, Ano20-75, Ano20-76, Ano20-77, Ano21-33, Ano21-34, Ano21-35, Ano21-36, Ano21-37, Ano21-38, Ano21-39, Ano21-40, Ano21-41, Ano21-42, Ano21-43, Ano21-44, Ano21-45, Ano21-46, Ano21-94, Ano21-95, Ano21-97, Ano21-98, Ano21-99, Ano21-100, Ano21-101, Ano21-102, Ano21-104, Ano21-111, Ano21-105, Ano21-106, Ano21-107, Ano21-108, Ano21-109, Ano21-110, Ano22-46, Ano22-47, Ano22-49, Ano22-48, Ano22-50, Ano22-51, Ano22-52, Ano22-53, Ano22-54, Ano22-109, Ano22-110, Ano22-111, Ano22-121, Ano22-122, Ano22-132]. **Cover2** [Ano23-109, Ano24-37]. **Cover3** [Ano23-110]. **Cover4** [Ano23-111]. **Coverage** [BD22].

COVID [And20b, Cha20a, Gib21, Ham20a, Has20a, Hut20, NS20, Per20a, Pes20e, Pes21a, Pre20, SB22a, SZ20, Wal22, YS20, SHD20, Str22b]. **COVID-19** [And20b, Cha20a, Gib21, Ham20a, Has20a, Hut20, NS20, Per20a, Pes20e, Pre20, SZ20, Wal22, YS20, SHD20].

CPU [Kas23, Reg23, Szk21]. **Cracked** [Abb23]. **crafted** [LCBH20]. **Craig** [Der22b]. **Cranes** [Smi20c]. **cranks** [Ulr20b]. **crashes** [Per22a]. **cravings** [Dol23b]. **Craze** [AZPC22]. **creaky** [Cha20b]. **Cream** [Gen24d]. **Create** [Der21e, Gol22d, Mit20]. **Created** [Gen22]. **Creating** [KK21, Sac20]. **Creation** [Koz23a]. **Creativity** [Bro23c, Gol22b]. **Creator** [Koz23c]. **Credentials** [Str24b]. **credit** [Per22b]. **credit-card** [Per22b]. **Creepy** [WC23]. **crewed** [Jon24]. **crisis** [Cha20a]. **Critical** [VA23]. **Critters** [Ros22e]. **CrossTalk** [Ano20u, Hig20a, Hig20c, Hig20g, Pes20d, Pes20f, Smi20c, Smi20e, Smi20f, Smi20h, Ano20-45, Ano20-94, Hig20j, Ano20-44, Ano20-88, HP20, Hig21, Smi20a, Smi20b, Smi20d, Smi20g, Smi21a]. **Crowdfunded** [Ste21]. **crucial** [Hsu20b]. **Cruise** [Ros23b, Per20l, Wea20]. **Crypto** [Ano21-53]. **Cryptocurrency** [Gen23e, Per22b]. **cryptographic** [Lew20]. **Cryptokitties** [Smi22m]. **Crystal** [Mar21e]. **CubeSats** [Mit20]. **Cummings** [Mar23k, Ros23a]. **Cup** [Sto23]. **Curbside** [Ulr20a]. **Currencies** [HS23]. **Current** [BSAH21]. **cut** [Moo20b, Per20h, Per20o, Scu20b]. **Cuts** [Smi22c]. **cybersecurity** [Der23c]. **cycle** [Str21].

D [And20f]. **Dangerous** [VA23]. **dared** [Ack23d, Cas23d]. **Dark** [Ano21-54, Moo23b, Sch20c]. **DARPA** [Ack22c]. **dashboard** [Sch23b]. **Data** [Car24, Dum20, Har22, Hig20b, Koz21a, LH24, Moo24b, Rab22, AS22, Nor20a, Per21b, RS23, Ras20b, SMD20, SG22, ZL20a]. **Data-driven** [Hig20b]. **databases** [Dum20]. **David** [Gol23e]. **Davis** [Ano20-101]. **Day** [Bro22b, Tow21, Gen24e]. **Days** [Ano21-55]. **DC** [Fai24]. **dead** [Red20]. **death** [Der20, SB22a]. **debut** [Per20a]. **Decades** [Bro22a, HF22, Der23c, Gol23d, Pat24b, Per21b, Per23, Ros20a, Zor20, Smi23b]. **Decarbonization** [Smi22c, Smi22d]. **Decarbonize** [Cab24, Gol24b, MMP22]. **December** [Ano21-115]. **Decent** [BD22]. **decision** [Hut21]. **decision-making** [Hut21]. **Declining** [Smi21k]. **Deco** [Jon22d]. **Decoupling** [RS23]. **Dedicated** [Tow21]. **Deep** [Ack21b, Ano21-113, Ham21, LCBH20, LDO22, MSS21, Sch21a, Sch22c, TGLM21, BMRW20, Jon24, Moo20e, Pat24a, Per20n, Zor22d, Dum20]. **deep-learning** [Per20n]. **deep-ocean** [Zor22d]. **Deep-Sea** [Sch22c]. **deep-space** [BMRW20, Jon24]. **Deep-speare** [LCBH20]. **Deep-time** [Dum20]. **deeper** [Ano20-84, Gal20a]. **deepfakes** [BSG22, Str20a, Str24b]. **DeepMind** [Chi21]. **Deere** [Der23a, Per20n]. **Defender** [Ulr22]. **Defense** [Cha21b, Lew23, Per22a]. **Defined** [Kas23, Cas22b, Lee20]. **defunct** [Red20]. **Delight** [Cas23b]. **Deliver**

[BD22, Per20e, Zor20]. **delivered** [Ano20-68, Wal24]. **delivering** [LDO22]. **Delivers** [Gol24c]. **Delivery** [Jon23b, Mar20h, Rak24, Sch20a]. **Dell** [Smi22i]. **Demand** [AFH22, Str22b, Per20j]. **demonstrate** [Cly22]. **Demos** [PRR23]. **Dennisa** [Der21d]. **density** [Cha24, Smi22k]. **Departments** [Per20d]. **Depend** [Fit21, Per20h]. **describe** [NS20]. **Desert** [Jon22e]. **deserve** [Hig20h]. **Design** [Ano21-91, Cha21a, Kas23, Gol22e, Hig20a]. **designed** [Per20l]. **Designer** [Gen23d]. **Designing** [Sto23]. **Designs** [GP22, Smi22e]. **Despite** [Fun20, Rab22]. **destroy** [And20h]. **Destroyed** [Mar23j, Moo20c]. **destructiveness** [Smi22i]. **Detect** [Sch22a, Sch23a, WB21]. **Detecting** [Mar23j]. **Detection** [Baj22]. **Detector** [Jon23i, Wal20b]. **Deterrence** [Baj22]. **develop** [Per20e]. **developers** [Per20j, Wea20]. **Development** [Ash23, Hsu20a, Zor20]. **Developments** [JPWB21, MJH⁺21, SAS⁺21, CKG⁺21]. **Device** [Gol22c, KK21, Moo22c]. **devices** [Ano21-91, Arm20, MW20]. **diagnostic** [YS20]. **Dialogue** [CD21]. **Did** [Bro23c]. **Didn't** [Bro23c, Cas20g]. **difference** [Pat24b]. **Different** [Dol23b, Ack23d, Cas23d]. **dig** [Gal20a]. **Digital** [Bow21, CAS24a, Der23d, Dum20, HS23, Smi23c, WC23, Koz23b, Mar20a, Str24b, Zel20]. **dilemma** [Hsu20b, Bro22d]. **dimension** [Per20c]. **Diminishing** [TGLM21]. **dioxide** [Ano20-100]. **direct** [Gal21b]. **direct-air** [Gal21b]. **direction** [RK22]. **disabilities** [Sac20]. **Disability** [Ano21-121]. **disappear** [Per21b]. **disappeared** [Fru20]. **disaster** [Cha20a]. **Disastrously** [Cho21]. **Discounts** [Ano21-117, Ano21-118, Ano21-119, Ano20-71, Ano21-120, Ano22-123]. **discovery** [Scu20b]. **discrimination** [Per20i]. **disinfected** [Ano20-68]. **disinfection** [Str24b]. **Disks** [Ake23]. **Disney** [Gen23b]. **Disorders** [Dol23a]. **Disparate** [Der21e]. **Display** [Som21, ZL20b, Cas20e, Cas22f, Mie22]. **Displays** [Gan24, Pal22, Per21a]. **Disrupt** [FK21]. **disruptors** [Bro22d]. **disrupts** [Ham20a]. **Distance** [Jaf22]. **Distanced** [Ano21-142]. **distances** [Jaf22]. **Distast** [Sch23a]. **distillery** [Str23]. **distinguish** [LCBH20]. **distribute** [Gib21]. **Dive** [Cal22]. **divide** [Koz23b]. **divided** [Koz21b]. **Divya** [Der21g]. **DIY** [Cas20d, Cas22a, Gol23e, Lew23, Pau22, Ros22b, Sch20b, Sch22d, Sla21, Tem20, Wat24]. **DNA** [Abb23, BF24, Car24]. **DNS** [Ras20a]. **Do** [PRR23, Cas23a, Gal20b, Wal20a]. **Do-or-Die** [PRR23]. **Docker** [Cas21c]. **Does** [Pre20]. **Doesn't** [Hus24]. **dog** [GA20]. **dominance** [Ulr20c]. **Done** [BSAH21, Per20h]. **Don't** [Smi21d, Smi21e, Smi21f, Smi21b, Smi21c, Smi21g, Smi21h, Smi21i, Smi21j, Smi21k, Smi22a, Smi22b, Smi22c, Smi22e, Smi22j, BS22, Smi22i]. **Doom** [Ano21-62]. **door** [Lew20]. **Doorstep** [RZ21]. **doses** [Gib21]. **dot** [Scu20a]. **Dots** [Pal22, PK20]. **Double** [CP21, Moo22b, Sch20c]. **double-backup** [Sch20c]. **Down** [Som21, Rae20, Fai23b]. **Downed** [Sch22b]. **Downs** [Moo21]. **drag** [Per20m]. **Dragon** [Cha21b]. **Dragonfly** [Cha21b]. **Dream** [Hoc22, Smi21f]. **Dressed** [CP21]. **drills** [Gal20a]. **drinking** [Smi20e]. **Drive** [Str22b, Ack21a, Ano20-69]. **driven** [Hig20b]. **driver** [Har22, Wea20]. **driverless** [Per20l]. **Drives** [Ros23b]. **Driving** [Mar23k, WPBS23, And20g, LG20, Pan20, Smi23a]. **Drone** [Tei23, DM20, Pot20a, Ros22d]. **Drone-Based** [Tei23]. **Drones** [Ack23c, Ros23b, DM20, Gen24c, Sch20a]. **Dropout** [Bow21]. **Drops** [Per22c]. **Drove** [Moo23a]. **drug** [Scu20b]. **Dual** [Kas23]. **Dual-CPU** [Kas23]. **Dumpster** [Cal22]. **Duo** [SH22a]. **Duolingo** [BBS23]. **during** [Arm20, Cha20a, NS20]. **Duty** [Der23a].

DVDs [Nor20a]. **Dynamic** [SH22a].
Dynamics [Ack22b].

E-Bike [Sch21d]. **E-Paper** [HF22]. **Each** [Gol23g]. **Ear** [Lew23]. **Early** [PRR23, Koz20c]. **Earn** [Ano20-93]. **ears** [Hoc22]. **Earth** [AF23, BMRW20, Ano20-85, Ano24-48, Dum20, WB21, Zor22b]. **Earth-like** [WB21]. **Earthquake** [Mar23j]. **Earthquakes** [Mar23j, Sch23a]. **Easier** [Cas21c, Co021, Gen24e]. **Easy** [Sch21d, Smi21n, Tho21a, Cas20d]. **Eat** [Smi22h]. **Eating** [Smi22h]. **Eavesdropping** [Dut22, Hoc22]. **Echo** [Has20b]. **economic** [Fun20]. **Economics** [Ros23b]. **Economy** [Sch23b]. **ED** [Wea20]. **edge** [Hig20d]. **Editorial** [Zor23b]. **Edwin** [Zor22c]. **EE** [Der23b]. **Effect** [Zor22c]. **effective** [Hsu20b]. **efficiency** [Sch21a]. **Efficient** [Cha21b, PSD22]. **eight** [Ack24]. **Eighth** [Cas21d]. **Eileen** [Der23b]. **Either** [Cas23b, Cha23]. **Election** [Str24b]. **Electric** [Ano22-56, MMP22, Mar21k, Mar22i, Smi21e, Smi21j, Ulr21, Ulr22, Wal21, And20c, Ano20r, Ano20-69, Cri20, Gol22f, JAR24, Ulr20b, Ulr20c]. **electric-vehicle** [Gol22f]. **electrical** [Ano20-86]. **Electricity** [AFH22, Ano20-45, Mar21i, Smi22a, Smi22j, Fai23b, Smi22g]. **Electrified** [GP22]. **Electrifying** [Der23a, Sch21d]. **Electrifyingly** [Sch21d]. **electrodes** [Dut22, Wal24]. **Electrolysis** [MD23]. **electrolytes** [And20c]. **Electromechanical** [Pau21, TB21]. **Electronic** [CP21, Mar24a]. **electronics** [AMK⁺20, Som21]. **Electrostatic** [Mar23c]. **Eliminates** [BBFS22]. **Elon** [Smi21f]. **Else** [Lev21]. **elusive** [Cly22, Luc20a]. **embed** [Cas20d]. **embedded** [Ano20-90]. **Embracing** [Has20a]. **emerged** [Zor22a]. **Emergency** [Ano20-46, Ros22c]. **Emerges** [Moo23b]. **Emissions** [Smi22c, Gal21a, Gal21b]. **emotional** [CHM21]. **emotions** [HVW20]. **employer** [Ano20-95]. **Empower** [Ack23b].

emulate [BBS23]. **Emulated** [Reg23]. **Enable** [Gan24]. **Enabled** [Pau22]. **Enabling** [Ong20]. **Encrypted** [Moo24b, Ras20a]. **Encryption** [Pau21, Koz20c, Moo24b]. **End** [Pes21a, Per20a, Smi22d]. **ended** [Ros20a]. **Ending** [Has20a]. **Energiewende** [Smi20d]. **Energy** [BSAH21, Gar20, GP22, Moo21, SC23, Smi22b, Smi22f, Cha24, Fai23c, Ham21, Jaf22, MMP22, Smi22k, Cly22]. **enforcer** [Zor23a]. **Engineer** [Der21g, Gol23h, Kim22, Ano20-47, CD21, Gen23a]. **Engineered** [And20b, Cas20h]. **Engineering** [Ash23, Der21d, HPK22, JPWB21, MJH⁺21, NS20, SAS⁺21, Ano20-86, Cas20b, CKG⁺21, CFPP22, Koz24a]. **Engineers** [FK21, Gol22d, Per22c, Gen23c, NS20]. **engines** [Gal21a]. **England** [Jon23d]. **Enhanced** [Gol21]. **Enhancing** [Ack22a]. **Enough** [MMP22, Cha24, Gal21b, Gib21]. **ensure** [Der22f]. **ensures** [Der21d]. **Entangled** [Ros22e]. **Enters** [WPBS23]. **enthalls** [Smi23b]. **entire** [Sha23]. **entrepreneur** [Ano21a, Goo23a]. **Entry** [Dum23]. **Environment** [Cha21a]. **Environmental** [Cab24]. **environments** [BMRW20]. **Envoy** [Mar22k]. **Equals** [Ake23]. **Equiano** [Koz21a]. **Equipment** [Hec20]. **equipped** [Sch20b]. **Era** [Cas22g, Shi22, Smi22a, Wal21, Bro22b, Sch22e]. **Error** [BS22]. **Essential** [Cor21a, Ano20-68]. **Eugene** [Der23c]. **Europa** [Cha21a]. **Europe** [Dum23, Fai24, Ros22c, Ros22d]. **EUV** [Van23]. **EV** [And20c, Cha23, GEN24b, GH23, Gol23h, Smi23a]. **evangelizing** [Per23]. **Even** [Cas23c, Per20g, Sch23a, Szk21, BMRW20]. **Event** [Lau24, Ano20t, Bou20]. **ever** [Dut22, Pri21]. **Every** [Har22, Smi22d]. **Everything** [Gol22c, Hig20b, Hig20d, Hig20e, Hig20f, Hig20h, Hig20i, HP21a, HP21b, HP21e, HP21f, HP21c, HP21d]. **Everywhere** [Gol23a, Per21c]. **Evolution**

[Cha21b, Cas22e, Fun20]. **Evolve** [Wal22]. **Evolved** [Smi22h]. **EVs** [Cha24, Der22e, Dum22, Gol22f, MMP22, Ulr20a]. **eVTOL** [AZPC22, Zor23a, Zor23c]. **eVTOLs** [ACDG21, NG23]. **Exascale** [Dum23, And20i, Sch22e]. **exceed** [Fai23b]. **Exceptional** [Pau21]. **Excess** [SB22a]. **Exclusive** [Ano20-71]. **exoplanet** [WB21]. **exoskeleton** [Ack20]. **Expect** [Fun20]. **expectations** [And20g, Per20d]. **Experience** [Der22d, Gol21]. **experiences** [Der20]. **experiments** [Cas20g, Ham20a]. **Expert** [Der23d, Mar23k]. **Experts** [Gal21b]. **Exploding** [Jag22]. **Explorers** [Der22g]. **Explores** [HPK22]. **expressions** [HVW20]. **extension** [Red20]. **Extra** [FBMI23]. **Extreme** [Smi22e]. **Extremely** [ACDG21]. **Eye** [Ano24-47, Zor22e, Sch20d]. **Eyeballs** [Gen23e]. **Eyewear** [Ano21-114]. **EZ** [Mie22].

Fab [Ano22-108]. **Fabs** [Pat23a]. **Facebook** [HS23, Str20a]. **faced** [BMRW20]. **Facial** [Abb23, HVW20]. **Factor** [Gen23d]. **facts** [Ano20u]. **faculty** [Ano20-86]. **fades** [Pes21a]. **Fail** [Cho21, Cha20b, Raf20b]. **failed** [HS23, Pat24b]. **Fair** [McC20]. **Fake** [Fra21]. **fallback** [Raf20b]. **False** [Eis23]. **famous** [Bou20]. **Fans** [Gal21b]. **fantasy** [Ano20-51]. **Far** [Fai23a, Ano20-49, PSD22]. **Farewell** [Zor23b]. **Farms** [Pat24a, Usk21]. **fascinating** [Gol22d]. **Fast** [Cha21b, WPBS23, YS20, Ano20-49, Ano20-79, Smi22j]. **Faster** [Tow21, Ano21-91, CHM21, Gal20a, Per20e, Ros21]. **faster-than-sound** [Ros21]. **father** [Per20c]. **Features** [Gol23g]. **Feedback** [Gan24]. **Feel** [Ack22a]. **Feels** [CHM21]. **Fell** [Ros22a]. **Ferrite** [Cas22g]. **Ferrite-Core** [Cas22g]. **fetch** [GA20]. **few** [LCBH20, ZL20b]. **fewer** [Sca22]. **Fi** [Gol24c, Koz24c, Lew23, Cas22a, Hig20j, Zel20]. **fibers** [Hec20]. **Fiction** [Der21g, Jon22a, Zim21]. **fieldwork** [Ham20a]. **fight** [Ras20a]. **Fighter** [Ros23a]. **fighting** [Der23c]. **Figure** [Jon22a]. **Figured** [Pau21]. **figures** [Mar20j]. **File** [PSD22]. **film** [Zel20]. **filter** [Ros20b]. **Final** [Ano20-48]. **finalist** [Ano20-100]. **Finally** [Cha24, Gob23, Zor23c, Gol23d, Zor20, Zor22d]. **Find** [MD23, Pri21]. **Finding** [Abb23, Zor20]. **Finds** [Gen23d]. **FinFets** [Per20c]. **Fires** [Fit21]. **First** [Gen24a, Koz21b, Mar221, Ros22a, Ste21, SG22, Zor22a, And20b, And20e, Fru20, Jon24, Mar20c, Mar20d, Pot20a, Sch22e, Zor23c]. **first-person** [And20e]. **Firsthand** [Mar23k]. **Fishing** [Her20]. **Fission** [Jon23d, And20d]. **Fit** [Smi221]. **fits** [Mar20f]. **five** [Per23, Scu20b]. **Fix** [Smi21n, Str24a]. **Fixed** [Smi221]. **Flares** [Sch22a]. **Fleet** [Der22e, Raf20b]. **flesh** [SMD20]. **Flexible** [Der21e]. **flier** [DM20]. **fliers** [Zor23c]. **fies** [Rae20]. **Flight** [Jon23j, Smi21e, Smi23b, Ano20-89, CD21, Fou22, Ros21]. **Flights** [Smi21e, Koz23d]. **Flipper** [Cas23b]. **floor** [Sch22c]. **Floppy** [Ake23]. **flourished** [Hoc22]. **Flow** [Cha24]. **flu** [SB22a]. **fluctuations** [Koz20c]. **flurry** [Pes21a]. **Flux** [GP22]. **Fly** [Cha21b, JAR24, Pot20a]. **flyer** [Pot20b]. **Flying** [Ano20-49, Ros20a, Ros22d, Zor23a]. **focus** [And20g]. **focuses** [Gol22d]. **fold** [ZL20b]. **followed** [Smi22j]. **Following** [GOL24a]. **Food** [Smi22f]. **Foosball** [Coh22]. **Footprint** [Smi22b]. **foreshadows** [Fai24]. **foresight** [SZ20]. **Forest** [Fit21, PN20]. **forestry** [Ano20f]. **Forgetful** [Cho21]. **Forgotten** [Shi22, Smi22g]. **fork** [Per22a]. **form** [And20e]. **Former** [Ros23a, Gen23c]. **Formerly** [Pal22]. **Formula** [Ano20-51]. **Forward** [Ano23-134, Bro23b, Cor21b, Goo23b, Mar20a, Mar20b, Mar20c, Mar20f, Mar20g, Mar20i, Mar21d, Mar21e, Mar21f, Mar21h, Mar21k, Mar21i, Mar21j, Mar21c, Mar21g, Mar22i, Mar22j, Mar22l, Mar22k, Mar22a, Mar22b, Mar22c, Mar22d, Mar22e, Mar22f, Mar22g, Mar22h,

Mar23b, Mar23d, Mar23e, Mar23f, Mar23g, Mar23h, Mar23i, Mar24b, Mar24c, Bre20]. **Found** [SH22b]. **Foundation** [Ano20-70, Ano21-31]. **foundry** [Rak24]. **FPGA** [Cas20f]. **Fractional** [AMK⁺20]. **Fraden** [Koz24a]. **Free** [Tho21a, Per20f]. **freight** [DM20]. **frequency** [Bra21]. **Fried** [Cas23a]. **friendly** [Fru20, Pat22]. **Front** [Ano20-53, Ano20-54, Ano20-55, Ano20-56, Ano20-57, Ano20-58, Ano20-59, Ano21-92, Ano21-93, Ano21-96, Ano21-103, Ano22-49, Ano22-48, Ano22-51, Ano22-112, Ano22-113, Ano22-114, Ano22-115, Ano22-116, Ano22-117, Ano22-118, Ano22-119, Ano22-120, Ano23-112, Ano23-113, Ano23-114, Ano23-115, Ano23-116, Ano23-117, Ano23-118, Ano23-119, Ano23-120, Ano23-121, Ano23-122, Ano24-38, Ano24-39, Ano24-40, Ano24-41, Ano20-76, Ano20-77, Ano20-52, Ano20-60, Ano20-61, Ano20-62, Ano20-63, Ano20-64, Ano20-65, Ano21-94, Ano21-95, Ano21-97, Ano21-98, Ano21-99, Ano21-100, Ano21-101, Ano21-102, Ano21-104, Ano21-111, Ano21-105, Ano21-106, Ano21-107, Ano21-108, Ano21-109, Ano21-110, Ano22-109, Ano22-110, Ano22-111, Ano22-121]. **frontier** [Som21, Sch22e]. **Fuel** [Sch23b, Smi22f, Svr23, Gal21a, Smi22k]. **Fuel-Economy** [Sch23b]. **fuelless** [Ano20-49]. **full** [Ano20-70]. **Fully** [Moo24b, Per20l, Smi23a]. **Fun** [Gen23d, Mar20e]. **Functional** [Sca22]. **Funded** [Pat23a]. **Fusion** [BBFS22, Cly22, Der21e, Gol23b, Jon22h, Cly20, Cly23]. **Future** [Ack22c, Ack23a, Ano21-122, GOL24a, Ham21, Str21, Tei23, And20c, And20d, Ano20-72, Ano20-73, Ano22-130, Luc20a, MW20, Moo20b, Ulr20b].

Gadget [Wal21]. **Gadgeteering** [Ano21-112]. **gains** [Per20i]. **Gakutensoku** [Fru20]. **Galaksija** [Ack23d, Cas23d]. **Gallium** [Jes21]. **Game** [Pes21a, Reg23, Wea20, And20e, Smi23b, ZL20a]. **Games** [Gen23d]. **gaming** [And20e, Pes21a]. **Gamma** [Ros22b, Sch22a]. **Gamma-Ray** [Ros22b, Sch22a]. **Ganguli** [Der21h]. **garage** [Lew20]. **Gas** [Jon22c, Gal21b]. **gateways** [Gol23c]. **gauge** [Sch23b]. **GE** [Has20b, JAR24]. **gear** [And20c]. **gears** [Jon24]. **Geek** [Cas20a, Cas20b]. **Geely** [Smi23a]. **Gen** [Pau22]. **General** [Der21h]. **Generate** [VA23]. **Generated** [Koz23a]. **generating** [Fai23b]. **generation** [Fai24, Koz24c]. **Generations** [Sto23]. **Generative** [Bro23c]. **Generator** [Svr23]. **Generators** [Mar23c]. **Geostationary** [Koz20a]. **geothermal** [Gal20a]. **Germany** [Dum23]. **Germicidal** [And20h]. **gestures** [Wea20]. **Get** [HS23, BS22, Fai23c, Gol23a, Gol23d, Hut20, Per20f, RK22]. **Gets** [Dol23a, Rab22, Ulr22, Hig20i, Per20h]. **Getting** [Ash23, LDO22]. **Ghost** [Koz20c, Cas23a]. **Giant** [Zor22b, Fru20, Gal20b, HS23]. **giants** [Smi23a]. **GIFs** [Per21b]. **Gig** [Gen24d]. **Gill** [Ack22a]. **Give** [Bro23c, FBMI23, Red20, RHBM22, WAC⁺20]. **Gives** [Coo21]. **Gizmo** [SP21a, SP21b, SP21c, SB22b, SB22c, Smi22l]. **Glass** [Smi22b, Nor20a, HVW20]. **Glasses** [Per21a]. **Gliders** [Jon23e]. **Glitch** [Ros22b]. **Global** [Ano21-115, Fai23a, Fai24, Raf20b, RG20]. **Globalism** [Bro22b]. **Gloom** [Ano21-62]. **Glucose** [KK21]. **GM** [Ulr20b]. **Go** [CAS24a, Wal21, Zel20, LG20, Ulr20a]. **goal** [Cly22, Koz21b, Kum21]. **Godfather** [Kim22]. **Goes** [Ack21b, MD23, Smi21k]. **GoFly** [Pot20b]. **Going** [Koz23c, Ros20a, Wal24, Kum21]. **Gone** [Jon23k, BMRW20]. **Gooaall** [Coh22]. **Good** [Ano20-66, Mar23j]. **goodbye** [Hig20j]. **Google** [HVW20, Has20b, Koz21a]. **government** [Cha20a, Raf20b]. **GPS** [Har21, Raf20b]. **Gracey** [Gen23c]. **Grade** [Pat23b]. **Grain** [Smi22f, Usk21]. **graphics**

[Cas20e]. **Grapples** [Gol23h, Fai20b].
Grappling [Sch21e]. **Gravity** [Moo21].
Great [Ano21-113, Koz23c, Per21c, Smi21l,
 BBS23, Smi20a]. **greatest** [Cro20]. **Greedy**
 [Cha23]. **Green** [Fai23b, Str23, Pat22].
greener [Hus24]. **greenhouse** [Gal21b].
Greening [Gol24b]. **Greta** [GEN24b]. **Grid**
 [AFH22, Dum22, Eis23, Fai21, Gol22f,
 Fai23c, Fai24, Lee20, Moo21, Pat20]. **grids**
 [Ano20-66]. **Grit** [Abb23]. **Groceries**
 [RZ21]. **Groove** [LDO22]. **Gropper**
 [Ano21a]. **Gross** [Der20]. **Grosser** [Der22a].
Groundbreaking [HPK22]. **Grounding**
 [Jon23g]. **Group** [Ano21-121]. **grow**
 [Fai20a]. **grown** [Gui20]. **Growth** [Bro22c,
 Pat24a, Smi21j, Smi21k, Ano20-44, Per20j].
guard [Arm20]. **guardian** [Per20k]. **Guide**
 [Ano21-144, Ano21-145, Ano22-131,
 Ano22-132, CFPP22, RZ21, Ano20-103,
 Ano20-104, Gol23c]. **Guided**
 [Jon23e, Smi23c]. **Gun** [Ros23b]. **guy**
 [Ano20-81].

H [Der23c]. **Hack**
 [Zel20, AF23, Lew20, RG20]. **hack-proof**
 [Lew20]. **Hackable** [Cas24c]. **Hacker**
 [Cas23b]. **hacks** [Hoc22]. **Hall** [Zor22c].
Ham [Cas24c]. **HamMessenger** [Tho21a].
Hand [Coo21, You22]. **Handful** [PRR23].
Handheld [Cas24c, Wal21]. **Handie**
 [Bre20]. **Handie-Talkie** [Bre20]. **handle**
 [Moo20a]. **Hands**
 [Cas20d, Cas20e, Cas20g, Cas20f, Cas20h,
 Cas21a, Cas21b, Cas22g, Cas24b, Ehn23,
 Gob23, Gol23e, Laz21, Lew20, Mar24d,
 Pom21, Sar20, Sch20b, Sch20c, Sch20d,
 Sch21c, Tem20, You22, Zel20, Pre20].
Hands-On [Gol23e]. **Happen** [Har21].
Happens [SH22b]. **happier** [AS22]. **hard**
 [Hut21, Sca22, VH20]. **Harder** [Cha23].
Hardest [Chi21]. **Hardware** [Gen24a,
 Ros22a, Sch23c, Smi21l, LA22, Per22b].
Hardy [Ros22e]. **harming** [And20h].
harnesses [Koz20c]. **Harsh** [Rab22].

Harvard [Der23d]. **Harvest** [Jon22e].
Harvesting [Usk21]. **hasten** [JJS22]. **Hate**
 [Cas23b]. **Having** [Gol23b]. **head** [Per21a].
head-up [Per21a]. **headphones** [Hsu20c].
healing [Ano20-67]. **Health** [Str20b].
healthcare [Ano20-96, Ano20-97]. **heap**
 [Smi22g]. **Hear** [Bra21, Koz20b, Tho21b].
Hearing [Mar22i, Mos22, Sch20b]. **Heat**
 [MZR21]. **Heating** [Ano23-137]. **Heavens**
 [Sch23c]. **Heavy** [Der23a, Ack22b].
Heavy-Duty [Der23a]. **Heights**
 [Jon23b, RK22]. **Helena** [Koz21a].
helicopter [Pot20a]. **Hell** [Cha21a].
Hellish [MZR21]. **Hello** [AG20]. **Help**
 [Ack22a, CPBZ21, Gol22a, Jon22b, Gal20a,
 Pre20, SHD20]. **Helped**
 [Bro23c, Kim22, Ros22a, Fai23c, Per22a].
helpful [CHM21]. **Helping** [Koz20b]. **Helps**
 [Gol22b, Bar20, Der22c, HVW20]. **Her**
 [Der22d, Der22g, Der23b, GEN24b, Cas22d].
Here [Ano21-144, Ano22-131, Ano22-132,
 Bou20, Car24, Per20l, Sch20b, Ano20-103,
 Ano20-104, Ano21-145, YS20, Hut20, Jag22].
here-and-now [YS20]. **Hi**
 [Cas22a, Gol24c, Lew23]. **Hi-Fi**
 [Gol24c, Lew23, Cas22a]. **Hidden**
 [GH23, TB21, Mar20j]. **hide** [LA22]. **High**
 [Ano21-114, Coo22, Fai24, Gan24, Van23,
 You22, And20c, Cly23, Has20a, Has20b,
 YS20, Zor23a]. **high-flying** [Zor23a].
High-Numerical-Aperture [Van23].
High-Quality [Gan24, Has20b].
High-Resolution [Coo22]. **High-Tech**
 [Ano21-114, You22, Has20a, YS20].
high-temperature [Cly23]. **High-Voltage**
 [Fai24]. **Highway** [Mar23k]. **hiring**
 [Hsu20a]. **History** [Eis23, Jon23a, Mar21e,
 Mar23b, Cro20, Scu20a]. **hitch** [Pot20a].
Hits [Gen24a, Nor20b]. **Hoard** [Har22].
Hoards [GH23]. **hockey** [Zor23a]. **hole**
 [Bou20]. **Home** [Ack23d, Ano23-137, Cas21c,
 Cas23d, Jon23b, MZR21, Szk21, Wat24,
 AG20, Has20b, Per20g, Sar20, Sch20c].
home-automation [Has20b]. **Home-Brew**

[Szk21]. **Home-Brewed** [Ack23d, Cas23d]. **Homemade** [Sch22b]. **homes** [Ano20-96, Ano20-97]. **homomorphic** [Moo24b]. **Hopes** [Per20d, Rak24]. **Horizon** [Zim21, Bou20]. **Horse** [Moo23b]. **hospital** [Ano20-68]. **Host** [Dum23, Lau24]. **Hot** [Cas21d, Szk21, Per20j]. **hour** [Ack22b]. **Hsiang** [Der22c]. **Hu** [Per20c]. **Huge** [Coo21, GOL24a, Moo20e]. **Human** [Ack23a, Ack23c, Bro21, Smi22h, BBS23]. **Humanity** [Ack23b, Gib21]. **Humanoid** [Ack24]. **Humans** [Ack21b, Gol22b, Gol23g, And20h, Gol22a]. **Hummer** [Smi22e]. **Hundreds** [Usk21, Dum20]. **Hunt** [Sch22b]. **Hunts** [GH23]. **Hurdles** [Pat20]. **Hybrid** [JAR24]. **hybrid-electric** [JAR24]. **Hydrogen** [Fai23b, MD23, Str23]. **Hydropower** [Smi22g]. **hype** [Fun20, Hig20i]. **Hyper** [Smi21f]. **Hyperloop** [Smi21f]. **Hypersonic** [Ros20a].

IBM's [Cho23]. **Ice** [Rab22, Tei23, Gen24d]. **Iconic** [Mar23c]. **Icy** [Cha21a]. **ID** [Gen23e]. **ideal** [Zor20]. **ideas** [Cly20]. **Identifies** [Koz23a]. **identities** [RS23]. **identity** [Per20b]. **IEEE** [Ano20-70, Ano20-71, Ano21-31, Ano21-115, Ano21-117, Ano21-118, Ano21-120, Ano21-119, Ano21-121, Ano21-116, Ano22-122, Ano22-123, Per22c, Ano21-57, Ano21-58, Ano21-59, Ano22-59, Gol21, HPK22, Zor23b]. **If** [BS22, Mar20f, Sch24, Sha23, Pou22, Raf20b]. **II** [Hoc22]. **image** [Bou20, PK20]. **Images** [Koz23a, Sch23c]. **Imagine** [Bro23c, CD21]. **Imaging** [Jag22]. **immersive** [WAC⁺20]. **Immortality** [Mar23c]. **Impacts** [Cab24]. **Implant** [Wal24, Dut22]. **Implants** [Bou21, SH22b]. **important** [Ano22-130]. **impossible** [VH20]. **Impossibly** [Smi22c]. **Impractical** [You22]. **impressive** [Smi22i]. **improve** [Cho20, Gol22b]. **Improvement** [TGLM21]. **improving** [Per23]. **included** [Hig20f]. **Income** [Ano21-121, Per22c]. **increases** [Per20i]. **increasingly** [Lau23b, SB22a]. **Indeed** [Smi21d]. **Indefinitely** [Pes21b]. **Independence** [Ack22a]. **Indeterminate** [Ano20-44]. **India** [Fai20b, JJS22, Jon23f]. **Indoor** [Smi21n]. **induction** [Sch20b]. **Industrial** [Gen23a]. **Industry** [GEN24b, Jag22, Kim22, Pat24a, WC23, And20g, Koz21b]. **inertial** [Ano21-134, Per21a]. **Inexpensive** [Rab22]. **Inflation** [Per22c]. **Inflation-Adjusted** [Per22c]. **information** [Der20]. **Infrastructure** [Fit21, Gol22c]. **ingenuity** [Luc20b]. **inhaler** [And20b]. **Ink** [HF22]. **Inkjets** [BF24]. **Innovate** [Ano20-72, Ano20-73, Ano21-122]. **Innovation** [Gen24d, Moo20c]. **Innovator** [Bro22d]. **input** [Cas20f]. **input/output** [Cas20f]. **insde** [Ano22-48]. **Insight** [Zor22c]. **Insights** [Per22c]. **Inspired** [Sto23, Gen24c]. **Instacart** [RZ21]. **Instant** [Sch21d]. **Institute** [Gol22d, Raf20a]. **Instrument** [Ake23]. **Instruments** [CP21, Ano22-51]. **Insulin** [KK21]. **Insurance** [Ano21-121]. **Integrated** [Pau22]. **Intel** [Rak24]. **Intelligence** [Bro21, Gol23a, CHM21, Fun20, Hut21]. **intelligent** [Ano20-90, Pou22, Pri21]. **intended** [Der21d]. **Intentional** [Jon23g]. **Interactive** [Ros22a]. **Interconnects** [CPBZ21]. **interface** [Per20o]. **interference** [Bra21]. **Internet** [AFH22, Der22b, Hig20b, Hig20d, Hig20e, Hig20f, Hig20h, Hig20i, HP21a, HP21b, HP21e, HP21f, HP21c, HP21d, Mit20, PRR23, Per23, PSD22, Sha23, Shi22, Tow21]. **interoperable** [Koz21b]. **InterPlanetary** [PSD22]. **interrupted** [Ham20a]. **Invented** [Ano20-78, Cro20]. **invention** [Ano22-130]. **inventions** [Gol24b]. **inventors** [Moo20c]. **invisible** [Gol22c]. **ion** [Kum21, Mur23]. **IoT** [Ano20-79, Hig20c, Pes20b]. **Irresistible** [VA23]. **Island** [Koz21a, Koz24b]. **isn't** [Cha23, Koz23c].

items [CKG⁺21]. **Itself** [Bra21, Smi211].
Iverson [Der21e].

Jacob [Per21b]. **Jam** [Har21]. **James**
[Mar23c, Sch21b]. **Janelle** [Ano23a]. **Japan**
[Fru20, McC20]. **Java** [Ano20-95]. **Jenkins**
[Fai23c]. **Jersey** [Sha23]. **Jesse** [Fai23c].
Jetson [Cas20d]. **Jim** [Gen23a]. **Job**
[Ack22b, Per20f]. **Jobs**
[Der21e, Ack24, Koz20a, Per20j, Per20m].
John [Der23a, Per20n]. **Jolt** [Dol23a].
Jonathan [Der23d]. **Journal**
[And20f, Ano20-91, Ham20d, Ham20b,
Hsu20c, Wal20b]. **Journey**
[Der23b, GEN24b]. **Joy** [Str24a]. **JPL**
[BD22, Cha21a]. **Juan** [Bro22b]. **Jugular**
[Wal24]. **Juice** [Jon23h]. **Julie** [Der22g].
Julien [Moo24a]. **Jump** [Ros22a].
Jump-Start [Ros22a]. **JUPITER** [Dum23].
Just [BF24, Koz23c, Pat23b, MS22].

K5 [Cas24c]. **Keep**
[Ano21-123, Pes21b, BMRW20]. **keeps**
[AG20, Ulr20a]. **Kelp** [Pat24a]. **Kenya**
[Der22e]. **Kepler** [Mit20]. **key** [YS20]. **Ki**
[Kim22]. **kicked** [Per23]. **Kicking** [Gol23c].
kid [PK20]. **kids** [HVW20]. **Killer** [Fai21].
kilometer [Jaf22]. **Kilometers**
[Smi21e, Cly23]. **Kim** [Kim22]. **kind**
[RHBM22]. **kinds** [AMK⁺20]. **Kirchhoff**
[BSAH21]. **kit** [Cas20f]. **kits** [Per20e]. **know**
[Cas20g, Per23]. **Knowledge** [Mar23k].
Known [Mar23c]. **Korea** [Kim22].
KrakenSDR [Cas22b]. **Kubernetes**
[Cas21c]. **Kyle** [Zor23a].

L [Der23d]. **lab**
[Ham20a, Hec20, Tem20, Moo23b]. **Lags**
[Smi22a]. **laminography** [LA22]. **lamps**
[And20h]. **land** [DM20, Ulr22]. **landing**
[Fou21]. **Lane** [WPBS23]. **Language**
[Cas22c, BBS23]. **language-learning**
[BBS23]. **Languages**
[Cas21d, CG23, Cas20i]. **Lapse** [Sch23c].

Laptop [Smi22l, Mar20c]. **large**
[Per20f, VH20]. **Larry** [Per20o]. **Laser**
[BVKR23, Mar22l, Moo23b]. **laser-based**
[Moo23b]. **Lasers**
[BVKR23, BBFS22, Ros23b, Cho20, Koz23b].
last [Som21]. **Lasted** [Shi22]. **lasting**
[Ano20i]. **Later** [SB22a, Smi20d, Smi23b].
Latest [JPWB21, MJH⁺21, SAS⁺21, Cas20i,
CKG⁺21]. **Lattice** [BBFS22]. **Launch**
[Fou22, GO22, Pot20a, Sto20]. **launched**
[Bro22b]. **Law**
[BSAH21, Der23d, Smi22i, BSAH21,
CPBZ21, Moo24a, Per20c, RK22, Van23].
Law-for [Smi22i]. **layer** [Gol22f]. **lead**
[AMK⁺20]. **Leader** [Der21f]. **leads**
[Der22h, Dum22]. **league** [Ano20-51]. **leaks**
[MJS20]. **lean** [Hub24]. **leaner** [Hus24].
Leap [Cho23, Zor22b]. **Leapfrog** [Rak24].
Learn
[BBS23, Cas21c, Kas23, CHM21, Sca22].
Learned [ALRW21, Goo23a]. **Learning**
[Ack21b, Ano21-125, Ano21-126, GH23,
Ham21, MSS21, RZ21, Sch21a, Str22a,
TGLM21, Ano21-113, BBS23, Cas20d,
DHOW20, Hig20d, LDO22, Moo20e, Per20n].
Learns [BBS23]. **lease** [Red20]. **Leaves**
[Bea22]. **led** [Hut20, Per22a]. **legacy**
[Ano20g]. **legal** [Hoc22]. **Legged** [Ack24].
Lego [Tem20]. **Leland** [Jon23a]. **Length**
[Smi21d]. **Length-to-Beam** [Smi21d]. **Less**
[Sch22a, Per20b, Sch22d, Smi22e]. **Lessons**
[CG23, Cha21b, Gen22, Mar22j, Goo23a].
Let [Cas20b, Der21e, Sch21b, WAC⁺20].
Lets [Der22d]. **Letters** [Tho21b]. **Letting**
[RHBM22]. **Level** [Gol22b, Kas23, And20g].
Leveraging [AS22]. **LGBTQ** [Gen23c].
Lidar [WPBS23, Per21a]. **Lie** [Smi21d,
Smi21e, Smi21f, Smi21c, Smi21g, Smi21h,
Smi21i, Smi21j, Smi21k, Smi22a, Smi22b,
Smi22c, Smi22e, Smi22j, Smi22i, Smi21b].
Life [Ano20-81, Bow21, Cas20c, Gen22,
Cas20a, Der20, Fru20, Gen23b, Har22, Pri21,
Red20, Smi22d, Cas20b]. **Lifesaving**
[Per22a]. **Lift** [Fou22]. **Light**

[Ano20-82, Gen23a, Mar21j, Mos22, SC23, Sch21a, Ano20-67, Ano21-50, AF23, Ham21, Koz20c, Mar20i, Raf20a]. **lightens** [Ham20d]. **Lightest** [Jon22c]. **lighting** [Has20b]. **Lightmatter** [Sch21a]. **like** [Moo22c, WB21, ZL20b]. **Limbs** [FBMI23]. **Limited** [And20d]. **Limits** [Smi21d, Ano21-113, Ano21-123]. **Limor** [Cas23a]. **line** [Ulr20b]. **Linear** [Svr23, Gar20]. **Lines** [Cha20a, Has20a, Has20b, Luc20a, Per20b, Per20l, Per20n, Per20e, Per20h, Per20o, Pre20]. **link** [Dum20]. **liquid** [Smi22k]. **Listen** [Pri21]. **lists** [Ano20-95]. **lite** [LG20]. **Literally** [Ros22a]. **Lithium** [Cha24, Kum21, Mur23, Kum20]. **Lithium-ion** [Kum21, Mur23]. **lithium-metal** [Kum20]. **Lithography** [Van23]. **Little** [Coo21, Mar23c, Mar22j]. **Live** [Mar23c]. **lively** [Ano20-82]. **lives** [Ong20]. **Living** [De 22]. **load** [DM20, Ham20d]. **Location** [Ano20-83]. **logjams** [DM20]. **Long** [Bro22a, Mur23, Smi21d, Smi21m, And20d, Hig20j, Ros22d]. **long-range** [Ros22d]. **long-term** [And20d]. **Look** [Ano20-84, PK20, Per21a, Sch20d, Str24b, VA23]. **Looking** [Ano21-124, Gol23d]. **Looks** [Tei23, Ano21-27, Ano22-55]. **Loop** [Ack23a, Bro21, Sch20b]. **loopholes** [Hoc22]. **lose** [Per20i]. **Lot** [Coo21, Cas20d, Cas20f]. **Love** [Cas23b, Cas22a]. **loving** [Der22b]. **Low** [Bow21]. **Low-Dropout** [Bow21]. **Lower** [Lew23]. **LTA** [Koz23d]. **Lu** [Der22c]. **Luke** [Str23]. **lunar** [LSM23]. **Lurk** [Cas23c]. **luxury** [GA20, Has20b].

Mach [Ros20a, Sch21e]. **Machine** [Ano21-125, Ano21-126, Bro23a, Bro22c, Bro22b, Bro22d, DHOW20, GH23, Hig20d, Mar24c, Pau21, RZ21, SB22b, SB22c, Str22a, Van23, Cas20d, Cas23a, HPK22]. **Machine-Learning** [Str22a, Cas20d]. **machines** [AG20, Smi20c]. **Macro** [HP21a, HP21b, HP21e, HP21f, HP21c, HP21d, Pes20a, Pes20b, Pes20c, Pes22, SP21a, SP21b, SP21c]. **Made** [Cas21c, Cha21a, Arm20, Hsu20a, Per20i, Wea20]. **Madni** [Per22a]. **Magaly** [Der22d]. **Magazine** [Ano21-127]. **Magdalene** [Der22e]. **Magic** [Gen23a]. **Magnetic** [Shi22]. **Magnetometer** [Sch22d]. **Magnets** [BBFS22]. **Mail** [Mar21h]. **Mainspring** [Svr23]. **Major** [Der21f, Pau21, Cly20]. **Make** [BVKR23, Bro23a, Der22d, Gol22a, Gol23g, Kim22, LH24, Lew20, Pat23b, Pat24a, RZ21, AS22, Ano20-66, Baj22, Fai23b, Has20a, Hus24, Jes21, Koz21b, Moo24b, Pat20, Pat24b, Per20b, PSD22]. **Makeover** [Ulr22]. **Makers** [Hsu20a]. **Makes** [Coo21, Gen23d, Tho21a, Cas20d, Gen24e, Hut21]. **Making** [Bro22a, Fai23b, HVW20, Hig20e, Gol23d, Hut21, Per21b]. **male** [Per20b]. **Maluta** [Der22e]. **malware** [Ham20c, Sha23]. **Man** [Mar23c, Abb23, Reg23]. **Managing** [Cha20a]. **Manan** [Gen24c]. **manifests** [Str24b]. **manufacture** [Gib21]. **Manufacturers** [ACDG21, Pes21b]. **Many** [BVKR23, And20h, Hut20]. **Map** [Tow21]. **Mapped** [Wal22]. **Maps** [Wal22]. **Marcellus** [Der21f]. **Maria** [Der22f]. **marine** [Der22h]. **Mark** [Cho23]. **Market** [Ash23, Gen24a, Has20b]. **Mars** [Cas20c, Pot20a]. **masks** [Pre20]. **Mass** [Smi23a, Has20b]. **mass-market** [Has20b]. **Mass-Produce** [Smi23a]. **Masses** [Gen23e, Per22b]. **Massive** [BBFS22]. **Masterpiece** [Jon22d]. **Masthead** [Ano22-124, Ano22-125, Ano22-126, Ano22-127, Ano22-128, Ano23-123, Ano23-124, Ano23-125, Ano23-126, Ano23-127, Ano23-128, Ano23-129, Ano23-130, Ano23-131, Ano23-132, Ano24-42, Ano24-43, Ano24-44, Ano24-45]. **match** [Smi22k]. **Math** [Cho21]. **MATLAB** [Ano21-128, Ano22-50]. **Matrix** [SZ23]. **May**

[Pat23b, Pot20b, Smi23c, Ano21-113, Cha24, Dol23b, Ros21, Sch22e, ZL20b]. **Mayflower** [And20a]. **McDonald** [Ano20-87]. **Me** [Ano22-122, Bro23c, Sha23, Ano21-116]. **mean** [AMK⁺20, Der20]. **Means** [Ack22c]. **Meanwhile** [Ano20-85]. **Measure** [Mar23j, Smi21n]. **measures** [Pre20]. **Measuring** [Smi21e]. **Meat** [Smi22h]. **Meat-Eating** [Smi22h]. **Mechanical** [Ano24-46, Mie22]. **Media** [Str24b, Nor20a]. **Medical** [Bea22, Ano20-68]. **medicine** [CFPP22]. **Megatalent** [Ano24-46]. **Megatruck** [Jon22c]. **Melanie** [Der22h]. **melts** [Gal20a]. **Member** [Ano21-117, Ano21-118, Ano21-119, Ano21-121, Gol21, Ano20-71, Ano20-93, Ano21-120, Ano22-123]. **membership** [Ano20-71]. **memories** [Ano20-88]. **Memory** [BSAH21, Cas22g, Moo22b]. **MEMS** [Zor20]. **MEMS-based** [Zor20]. **Menus** [Bro23a]. **Merchant** [Pat24b]. **Merely** [Smi21f]. **Merryl** [Der20]. **Mesmerizing** [Sch23c]. **mess** [Hut20]. **Messages** [Ham20b]. **Messy** [She24]. **Meta** [Gen22]. **Metal** [Cha21a, GO22, Cas20h, Kum20, Sch22c]. **metal-rich** [Sch22c]. **Metalenses** [Gob23]. **Metallic** [GO22]. **Metals** [GH23]. **Metamaterials** [Pou22]. **methane** [MJS20]. **metric** [Smi22i]. **Micro** [HP21a, HP21b, HP21e, HP21f, HP21c, HP21d, Pes20a, Pes20b, Pes20c, Pes22, SP21a, SP21b, SP21c]. **Microcomputer** [Ack23d, Cas23d]. **Microcontroller** [Ros22b]. **microcredit** [Fai21]. **Microgrids** [FOSMD23]. **Microgried** [FOSMD23]. **MicroLED** [Ham20b]. **microLEDs** [Moo23b]. **Micromanufacturer** [Cas22d]. **Microsatellites** [MJS20]. **microscope** [Tem20]. **microscopy** [WAC⁺20]. **Microstory** [Gol24c]. **midst** [Der22b]. **might** [AMK⁺20, And20h, Ham21, HS23, WB21]. **mighty** [MS22, Smi22g]. **Mile** [Koz21b]. **Military** [Har21]. **Millimeter** [Gal20a]. **million** [Hec20, Pot20b]. **millions** [Smi23b]. **millisecond** [Pan20]. **Mind** [Kim22]. **Minerals** [GH23]. **minikit** [Cas20g]. **Minimalist** [Str22a]. **Mining** [Sch22c, Zor22d]. **Miracle** [Smi23b]. **Missile** [Cha21b]. **Missiles** [Ros23b]. **Mission** [GO22, Red20, Jon24]. **Missions** [BD22, BMRW20]. **Missy** [Mar23k, Ros23a]. **mist** [And20b]. **mix** [Zor22a]. **Mobile** [Ham20c]. **modded** [Cas24c]. **Model** [Cas22f, Ras20b]. **modeler** [Fai23c]. **modeling** [Pre20]. **models** [Hut20]. **Modern** [Bro23a, Cor21b, Ano22-130, Lee20, Smi22i]. **modular** [Pat24b]. **Molly** [Koz23c]. **Moment** [Gol23b, HF22]. **Moments** [PRR23]. **Momentum** [Kum21]. **Money** [Bow21]. **monopoly** [Koz21a]. **months** [Scu20b]. **Moon** [Jon24, BD22, Fou21, LSM23, Zor22b]. **Moore** [CPBZ21, Moo24a, Per20c, RK22, Smi22i, Van23]. **Morgan** [Gen23b]. **Mortalities** [SB22a, Ano20-88]. **Most** [Ack23b, ALRW21, Cas24c, Lev21, Ano22-130, Smi22i]. **motion** [Rae20]. **Motor** [Der21h, GP22, Mar21k]. **Motorized** [Ham20d]. **mouse** [Cas24c]. **Mouse's** [Ano24-47]. **Mouse's-Eye** [Ano24-47]. **Move** [Moo23a, Str24a, Ack22b]. **Movement** [Bou21, Smi22i]. **Movie** [Smi21i]. **Moving** [Gob23, Gen24e]. **MPGs** [Sch23b]. **Mr.** [Per23]. **Much** [BF24, WB21]. **Muddy** [Sch22c]. **Muffling** [Lew23]. **Multiphysics** [Ano21-63, Ano20t]. **murky** [Fou22]. **Musk** [Smi21f]. **must** [LSM23]. **mutates** [Ham20c]. **mute** [Ros20b]. **My** [Bro23c, Coo22, Lev20]. **Mysteries** [Jon23i]. **mysteriously** [Fru20]. **mystery** [MJS20]. **Myth** [Bro22c, Bro22b, Bro22d, SB22b, SB22c]. **Naffziger** [Moo23a]. **Naked** [LA22]. **nano** [Cas20d]. **Nanometer** [TB21]. **Nanometer-Scale** [TB21]. **Nanoparticles**

[Cha24]. **Nanostructures** [Gob23]. **Narrative** [Mar21i]. **narrow** [Fou21]. **NASA** [BBFS22, Der21f, Fou21, Fou22, GO22, JAR24, Jon24, Pot20a]. **nasal** [And20b]. **nascent** [Rak24]. **nasty** [Sca22]. **national** [Sto20]. **Nature** [Gol23e]. **navigation** [Ano21-134]. **Navy** [Gen23c]. **Nazi** [Mar21f]. **Near** [Smi21e]. **nearby** [Hsu20c]. **Need** [Ack23b, BBS23, Cab24, Fit21, Cas20f, Gal21b, Gol24b, MMP22, Pan20, Ros20a]. **need-for-speed** [Ros20a]. **Needed** [MZR21]. **Needs** [BD22, Fit21, BSG22, Ham21]. **neighbors** [Ano20-66]. **Nerve** [Dol23a]. **Nest** [Has20b]. **nets** [Moo22b]. **Network** [BSAH21, Cha21b, FOSMD23, Fra21, Hig20f, Tow21, Fai24, Koz21b, SMD20]. **Networked** [PRR23]. **Networking** [Bro23a, Has20b]. **Networks** [Cho21, MSS21, Ham21, Pan20]. **Neural** [BSAH21, Cha21b, Cho21, Fra21, MSS21, Dut22, Ham21, Moo22b]. **Neural-Network** [BSAH21]. **Neuralink** [Wal24]. **Neuromorphic** [Coh22]. **Neurons** [FBMI23]. **Neuroprosthetic** [Str22b]. **Neurorights** [SG22]. **neurotech** [SG22]. **Neutrino** [Jon23i]. **never** [BS22]. **News** [ACDG21, ARPH22, ACLS22, And20b, AMK⁺20, And20d, And20e, And20g, Ano20h, Ano20-46, Ano20-49, Ano20-51, Ano20-83, Ano20-82, Ano20-85, Ano20-87, Ano20-89, Ano20-50, Ano21-129, Ano21-130, Ano21-131, Ano21-132, Ano21-139, BGR⁺21, CKG⁺21, CSB22, CKX⁺23, Dum20, Fai20a, Fai20b, Gal20a, Gar20, GHG⁺22, Gen24a, GDUF22, Ham20a, Ham20c, Hec20, HPHU21, Hsu20a, HCP⁺23, JPWB21, Koz20b, KPG⁺21, KPCA23, Lau23a, Moo20c, Moo20a, MJH⁺21, MDC⁺22, MHLC23, NS20, Nor20a, Ong20, PCRC24, Pat20, PPUS22, PMPG23, PLUM23, Per20a, Pot20b, Pot20a, Raf20a, Raf20b, RCAP23, Ras20a, Ras20b, Red20, Ros20b, RPC⁺23, SAS⁺21, Scu20a, SCPG22, SCPC23, SZCB24, Str20b, SCMP22, SGS⁺23, Ulr20a, WAC⁺20, ZJL⁺24]. **Next** [Moo24a, Pal22, Pau22, Van23, Zor22b, Ano21-113, Ano22-58, Fai24, Gui20, Koz24c, Ano20-68]. **Next-Gen** [Pau22]. **next-generation** [Fai24]. **Ng** [Str22a]. **Niche** [Cas22d]. **Night** [SC23, AF23, LSM23]. **Nile** [Smi20b]. **No** [Cha20b, Jon23k, Lau23b, LA22, Sch21b, Ack21a, BMRW20, Has20a, Smi22d]. **no-tech** [Has20a]. **Nobel** [Mar22]. **node** [Moo20d]. **nodules** [Sch22c]. **Noise** [Ros20b]. **Noise-canceling** [Ros20b]. **nonsense** [Moo20d]. **normal** [Per20d]. **North** [Ano20t]. **Nose** [Str22b]. **Nothing** [Gol22e]. **notices** [Cha20b]. **novel** [Gol24b]. **November** [Bro22b]. **now-famous** [Bou20]. **Nowhere** [Smi21e]. **Nuclear** [Baj22, Jon22h, Pat24b, And20d, Cly20]. **Nuclear-powered** [Pat24b]. **number** [VH20]. **Numbers** [Smi21d, Smi21e, Smi21f, Smi21b, Smi21c, Smi21g, Smi21h, Smi21i, Smi21j, Smi21k, Smi22a, Smi22b, Smi22c, Smi22e, Smi22j, Smi22i]. **Numerical** [Van23]. **Nvidia** [Cas20d]. **obey** [Ack20]. **Object** [Mar23b]. **obscure** [Cho20]. **Obsolete** [SH22b]. **occur** [Koz20c]. **Ocean** [Der22g, Sch22c, Zor22d]. **Oceans** [Baj22]. **Ode** [Ano23-133, Mar22k]. **Off** [Fai21, Fou22, DM20, Per23]. **Off-Grid** [Fai21]. **offense** [And20h]. **offers** [Ano20-71, Lew20]. **officer** [Gen23c]. **Offices** [GEN24b]. **offs** [Lau24]. **Offset** [Smi21j]. **Offshore** [Fai23a, MD23]. **Often** [Ano23a, You22, Smi22e]. **Ohm** [BSAH21]. **oil** [Her20, Smi20f]. **Old** [Abb23, Ack22a, Smi21f, Zor22c, Cas20e, Hec20, Lee20, LDO22, Ano20-87]. **oldest** [Mie22]. **OLED** [Pal22]. **Olsen** [Der22h]. **Olympics** [Lau24, Lau24, Pat22]. **Omicron** [Wal22]. **Omnivorous** [Svr23]. **on-the-spot** [Per20a]. **Once** [Gol23a, RHBM22]. **One** [Ake23, Ano21-116, BVKR23, GEN24b, Gol23h, Sch21b, Smi22a, Zor22b, Ack21a,

Ano21-138, Cha20b, Chi21, ZL20b]. **Online** [Gen22, RS23, Pes21a]. **only** [Gol22a, RK22]. **opacity** [Hut21]. **Open** [Gen24a, Koz21b]. **Open-Source** [Gen24a]. **opener** [Lew20, Zor23c]. **operations** [Sch22e]. **operators** [Koz21a]. **Optical** [Nor20a, Sch21a]. **optics** [Ano21-134]. **Optimized** [Ano20-78]. **Option** [Pat24b]. **optophone** [Tho21b]. **orbit** [Mar20c]. **organizations** [Str24b]. **organize** [Dum20]. **origin** [Per20]. **original** [Ros20a, Smi23b]. **Oscar** [Gen23a]. **oscillators** [Cas20b]. **Oscilloscope** [Cas20e]. **Other** [Bro22d, Gol23g, RZ21, Mit20]. **Our** [Ano21-122, Ano21-124, Cas20i, Cas21d, Gol23e, Gol23g, MZR21, Smi22d, Ano20-72, Ano20-73, RS23, WB21]. **outposts** [LSM23]. **output** [Cas20f]. **outputs** [Sch23b]. **Overnight** [Bro22a]. **Oversees** [Der21f]. **Overtake** [Ack21a]. **Own** [Cas22g, Sch23c, Szk21, WB21]. **oxide** [Jes21].

Pac [Reg23]. **Pac-Man** [Reg23]. **Package** [Rab22]. **Packetizing** [AFH22]. **packs** [Cas20d]. **paid** [Per20b]. **Painless** [Cas20f]. **Painting** [Fra21]. **Pallets** [Ros22d]. **Pan** [Bro22b]. **Pancreas** [KK21]. **Pandemic** [ALRW21, Ano20-88, Hig20g, Pes21a, Ano20-92, Cha20a, Ham20a, Has20a, NS20, Per20d]. **pandemics** [YS20]. **Paper** [HF22]. **Parachute** [Ros22a]. **Paradox** [Smi21n]. **Parcel** [Smi22f]. **Paris** [Lau24]. **park** [Fai20b]. **Part** [Smi22f, SH22b, Cas22f]. **particle** [Arm20, Gar20]. **particle-accelerating** [Gar20]. **particles** [AMK+20]. **Partridge** [Der22b]. **passes** [Gar20, Koz20c]. **Passive** [Cas22b]. **Password** [Coo22]. **Past** [Ano23-134, Bre20, Bro23b, Cho23, Cor21b, Goo23b, Mar20a, Mar20b, Mar20c, Mar20f, Mar20g, Mar20i, Mar21d, Mar21e, Mar21f, Mar21h, Mar21k, Mar21i, Mar21j, Mar21c, Mar21g, Mar22i, Mar22j, Mar22l, Mar22k, Mar22a, Mar22b, Mar22c, Mar22d, Mar22e, Mar22f, Mar22g, Mar22h, Mar23b, Mar23d, Mar23e, Mar23f, Mar23g, Mar23h, Mar23i, Mar24b, Mar24c, Str21, Ano22-130]. **paste** [Per20o]. **Patch** [Sha23]. **Pathfinder** [Koz23d]. **Paths** [Moo22a]. **patients** [Ano20-68, Arm20]. **Patryk** [Gen24d]. **pattern** [Smi22j]. **Pay** [Per21c, Per20h]. **PC** [Bro23a]. **PCB** [RG20]. **Peak** [Smi20f]. **Pedaling** [Sch20c]. **Peer** [PSD22]. **Peer-to-peer** [PSD22]. **Peering** [Pes21a]. **People** [Ack23b, SH22b, Ano20-68, Fou21, Gol22d, Sch20b, Sch20d, Tho21b, Wea20]. **Pepsico** [McC20]. **perform** [AG20]. **performance** [Moo20b, Moo22b]. **Perhaps** [Baj22]. **Peril** [Sch21e]. **Perilous** [Mar21i]. **Perry** [Gol23f]. **Perseverance** [Pot20a]. **person** [And20e]. **Personal** [Der22e, Pot20b]. **perspective** [Ano20-47]. **Peter** [Gen23c]. **Pets** [Fit21]. **Phase** [Moo24a]. **phenomenon** [Cho20]. **Philip** [Gen22, Zor23b]. **Phoenix** [Rae20]. **Phone** [MZR21, Tho21a]. **Phone-Free** [Tho21a]. **Photon** [Ano20-89]. **Photonic** [Ham21]. **Photonics** [BVKR23, Cho20]. **Photons** [SC23]. **physics** [Arm20]. **Pi** [Sch23a, Cas21c, Ros22b, Sch23c]. **Pi-Based** [Sch23a]. **Pichardo** [Der22d]. **Pico** [Ros22b]. **Picture** [Ano21-53, Ano21-54, Ano21-55, Ano21-56, Ano21-51, Ano21-52, Ano21-114, Ano21-136, Ano22-56, Ano22-57, Ano22-58, Jon22f]. **Pie** [Smi22h]. **pieced** [Bou20]. **Piezoelectrics** [Gan24]. **Pillai** [Goo23a]. **Pilot** [Ros23a, Ong20, Sch22c]. **Pilots** [Ros22d]. **Pinch** [Cly22]. **Pioneer** [Str22a]. **Pioneering** [Moo23a, Moo21]. **pivot** [Per22a]. **Pixar** [Smi21i]. **Placentas** [Zim21]. **places** [And20h]. **plain** [MS22]. **Plan** [RS23, Per20a]. **plane** [Per22a]. **Planet** [Lev21, MZR21, Pot20a, WB21, Ano21-136]. **planning** [MMP22]. **Plans** [Jon23b, Ham20a, SG22]. **plant** [Ulr20b].

plastics [Gol22a]. **Plate** [Smi22b].
platform [Sto20]. **Play** [Coh22]. **players**
 [Gol22b]. **plea** [Hub24]. **Plenty**
 [Smi22a, Pou22]. **plotter** [Cas20g]. **Plotting**
 [Cas20g]. **Plugging** [LSM23]. **Plus**
 [Ake23, Ano20-71]. **Plutonium** [Pat23b].
pneumatic [Fru20]. **Podcast** [Gol23g].
Podcasts [Ano20-100]. **point** [Cas22e].
points [Ano20-99]. **poised** [And20c].
polarization [Koz20c]. **Polaroid** [Zel20].
Pole [LSM23]. **Policymakers**
 [Cha23, Hut20]. **pool** [Per20f]. **Pope**
 [Gen23b]. **Popular** [Ros22b]. **Population**
 [Bro22c, Smi21k]. **Portrait**
 [Ano21-133, Bou20, Gol23f]. **possible**
 [Fou21, Has20a]. **post** [Per20d].
post-pandemic [Per20d]. **Potassium**
 [Pat20]. **Potent** [Fai23a]. **potential**
 [Ano20-70]. **potentials** [Ano20q]. **Power**
 [AFH22, Ano21-56, AF23, BBFS22, Bow21,
 CPB221, Eis23, Fai24, Fit21, Jaf22, MSS21,
 And20d, Ano20i, Cas20d, Cly20, Cly23,
 Fai20a, Fai23c, Gar20, Hig20b, JJS22,
 LSM23, Lee20, Moo20b, Rak24, Sch20c,
 Smi22i, Ulr20a, Ulr20b]. **power-delivery**
 [Rak24]. **Powered**
 [Ano23-137, MW20, Pat24a, Pat24b].
Powerful [BBFS22, Jes21]. **Practical**
 [Cho20, Smi21d]. **Pratt** [Ack22a]. **Precise**
 [Lev21, WB21]. **precision** [BSG22]. **preps**
 [Pot20a]. **Prescription** [And20e].
Prescription-strength [And20e]. **present**
 [Ano22-130]. **Preserving** [RS23]. **press**
 [Ano20-50]. **pressure** [ALRW21]. **prevent**
 [Kum21, Per22a]. **preventive** [Pre20]. **price**
 [GA20]. **prices** [Ano20-45]. **print**
 [Ano20-50]. **printed** [RG20, Tho21b].
printer [And20f, Zel20]. **PrintFixer**
 [And20f]. **Printing** [BF24, SC23]. **Privacy**
 [Pes20e, RS23, Ano21a, Hig20g]. **private**
 [Hoc22, Hsu20b]. **Prize** [Pot20b]. **Probe**
 [Cas21d, GO22]. **problem**
 [Gol22a, Hig20c, Sch21a]. **Problems**
 [Chi21, Per20n]. **Proceedings** [Ano21-59].
process [Cro20]. **Processing**
 [BSAH21, Moo22b].
processing-in-memory [Moo22b].
Processors [Moo22a, Szk21, Moo20b].
Proctor [Der21f]. **Produce**
 [Pat23b, Smi23a]. **producing** [Str23].
Product [Ash23]. **production** [RG20].
productive [AS22]. **productivity** [Fun20].
products [Der22f]. **professionals** [Per20b].
Professor [Ano20-90, Der23d, Mar22j].
Profile [Der22g, Der22h, Sac20]. **Program**
 [Ano21-116, Cas20a, Koz24a, Sch22c].
programmers [Gol22b]. **Programming**
 [Cas21d, CG23, Cas20f, Cas20i, Sca22].
Programs [Pat23a]. **progress** [And20d].
Project [MD23, Dum20, Sch23b, Tem20].
Projects [Coo21, Der21f, Gol23e, And20d,
 Cas20d, Cas20f, Cas22a]. **Promise**
 [Sch21e, LDO22, Pat20]. **proof** [Lew20].
Proposals [Fai23b]. **Propulsion** [Zor22c].
Prosthetic [Jon23c]. **protect**
 [Gib21, Ras20b]. **Protecting** [Mar23j].
Proto [Mar20g]. **Proto-Roomba** [Mar20g].
Protocol [Cas23c, Cro20]. **protracted**
 [Smi22j]. **Provide** [Gan24]. **Provides**
 [Tow21]. **providing** [Har22]. **proximity**
 [Ano20-91]. **Psyche** [GO22].
ptychographic [LA22]. **public** [Ack21a].
published [Ano20p]. **pull** [HS23]. **pumps**
 [Fai21]. **Purdue** [Der22c]. **Purpose** [Chi21].
Pursuing [Ano20-92]. **pushing**
 [Ano21-123, Per21c]. **Put**
 [BVKR23, Gol22e, Som21, And20h, Cas20i].
Putting [Ros20b]. **Pyramid** [Smi20a].
pyramids [Smi22e]. **Python**
 [Ano20-95, Cas20i, CG23].
Quakes [Sch23a]. **Quality**
 [Gan24, Smi21n, Has20b]. **Quantum**
 [BS22, CFPP22, Cho23, Pal22, Ros22e,
 Scu20a, VH20, AMK⁺20, CD21, Cas22e,
 Cho20, PK20]. **Quantum-dot** [Scu20a].
Quantum-Entangled [Ros22e].
Quantum-Sensor [CFPP22]. **Quartz**

[Wat24]. **Quasiparticles** [AMK⁺20]. **Qubit** [Cho23]. **qubits** [Moo20a, VH20]. **Quest** [Jon23d, Per20n]. **Question** [Cor21a]. **Questions** [Ano23a, Cas23a, Jon23a, Koz23a, Koz23b, Koz23c, Koz24a, Koz24b, Moo23a, Moo24a, Ros23a, Sch22c, Str23, Str24a, And20d, Cha20a]. **quick** [DM20]. **quiet** [Bro22d].

Race [Fai23a, You22, Moo23b, Ros20a, Wal20a, YS20]. **Racers** [Ack23c]. **racial** [Per20b, Str20b]. **racing** [And20e]. **racism** [Moo20c]. **Radar** [Cas22b, Tei23, RHBM22]. **Radical** [Har22, Cro20, Moo21, Ros22d, Zor23c]. **Radio** [Bra21, Cas22a, Cas24c, Laz22, MZR21, Zor22b, BMRW20, Cas22b, DHOW20, Mar20d, Mar21f]. **Radio-Spectrum** [Laz22]. **Radioactive** [Cha21a, Gal20b]. **radios** [BMRW20, Bra21, Jes21, Koz20b]. **rail** [MMP22]. **raise** [And20d]. **RAN** [Koz21b]. **Range** [Der22d, Ros22d]. **rankings** [Cas20i]. **Raspberry** [Sch23a, Sch23c]. **Rates** [Koz21a]. **Ratio** [Smi21d]. **Rattner** [Gen24e]. **Ray** [Ano21-124, Ano21-134, Ros22b, Ros23b, Sch22a, Cas20e, LA22, Mar20f]. **Ray-Gun** [Ros23b]. **reach** [Sch22e]. **reached** [Ano21-113]. **reactor** [Cly20, Cly22]. **Reactors** [Pat23b, Pat24b]. **readers** [Cas22a, LCBH20]. **Ready** [AS22, Cha23, HS23, Smi23c]. **readying** [Fou22]. **Real** [BSG22, Smi21l, LCBH20, Zor20]. **real-world** [Zor20]. **realistic** [LDO22]. **Reality** [Fai23b, Ros22a, She24, Ano20-102, HVW20, Per21a]. **Realize** [Ano20-70]. **Really** [Sch24]. **Realm** [Dum23]. **reams** [Har22]. **reappear** [Per21b]. **Reasons** [Ano21-116]. **Reborn** [Ano21-127]. **receive** [Bra21]. **Receiver** [Sch22b]. **Reckoning** [Ano21-113]. **reconfigurable** [Pou22]. **Reconnaissance** [Zor22e]. **Reconstruction** [Abb23]. **record** [Hec20]. **record-breaking** [Hec20]. **records** [Dum20]. **recovery** [Gar20]. **Recruit** [Ano20-93]. **recruiters** [Per20f]. **recruiting** [Hsu20a, Per20f]. **Recruitment** [Ano21-135]. **recyclables** [Cal22]. **Recycling** [Gol22a, Kum21]. **Red** [Mar21d, Ano21-136]. **redefine** [Per21a]. **reduce** [Dol23b, Gar20]. **Reducing** [Ham21]. **ReefWorks** [Der22h]. **reengineered** [Pan20]. **reexamine** [Hsu20a]. **Reflections** [Luc20b, Ano20-48]. **regardless** [Per20b]. **Regularly** [Lev21]. **regulate** [SG22]. **Regulating** [Gol23a]. **Regulation** [Mar23k]. **Regulator** [Bow21]. **Reich** [Shi22]. **reinvent** [AG20]. **Relay** [BD22]. **relegated** [Smi22g]. **Reliability** [Koz24c]. **Reliable** [WPBS23]. **rely** [Per20g]. **remade** [Cas20h]. **remain** [Pat20]. **remakes** [DHOW20]. **Remembering** [Per20o]. **renaissance** [Fai21]. **Renamed** [Smi21f]. **rendition** [WB21]. **Renewable** [Smi22g, Fai23b]. **Repair** [Smi22i]. **Report** [Ano21-143]. **Reports** [Der22f]. **reproduction** [LDO22]. **require** [Ano20i, Ham21]. **Required** [Smi22b]. **Requires** [Ash23]. **Rerech** [Der22f]. **Reroute** [Bou21]. **Research** [Ano21-56, Der22c, Ham20a, Koz23d]. **Researchers** [Jaf22, Per20e, Ros22e, Scu20b, WAC⁺20]. **reset** [And20g]. **Resignation** [Per21c]. **Resolution** [Coo22]. **Responds** [Smi22i]. **response** [NS20]. **responsibility** [Cha20a]. **Restore** [Bou21]. **Restoring** [Mos22]. **Results** [Dol23a, Der22c, Per20e]. **resurfaced** [Cha20a]. **Resurgence** [Ros23b]. **retackles** [Koz24c]. **Retinal** [SH22b]. **retires** [Zor23b]. **Retro** [Cas22a, Sch23b]. **retrospective** [Smi20f]. **Return** [Koz23d, Kum20]. **Returns** [Ros21, TGLM21]. **Reusable** [Bro22a]. **Revamping** [Jon22d]. **Revealed** [Ack23a]. **Revealing** [Cho21]. **revenue** [Der22c]. **reverse** [Cas20h]. **review** [Raf20a].

Revolution [Usk21, Fun20]. **Revolutionize** [AZPC22]. **revolutionized** [Per20o].
revolutions [CFPP22]. **rewards** [Ano20-93]. **RF** [Zor20]. **Rich** [CP21, Jon22e, Sch22c]. **ride** [Per20l, Pot20a]. **Right** [Smi22l, Hut20, Ong20, Zor22d]. **Ripples** [Zor22c]. **RISC** [Gen24a, Szk21]. **RISC-V** [Gen24a, Szk21]. **rise** [Ras20b]. **Rises** [Per21c]. **rising** [Smi22i]. **risk** [Cha20a].
Risks [Mar23k]. **Risky** [Ros23a]. **Rival** [Shi22, Fou22, Pal22]. **Rivers** [Jon22g].
Road [Bro22a, Dum22, HF22, Mur23, And20g, Goo23a, MMP22]. **roads** [Ack21a].
Roars [Fai24]. **Roasted** [Ano22-57].
Robocars [RHBM22]. **RoboCup** [Gol23c, Jon22f]. **Robot** [Ack21a, Ack22b, Ack23b, Bro23c, Chi21, Coh22, Mar21a, AG20, Fru20, GA20, Gui20, HP20, Lev20].
Robotic [Bea22, Usk21]. **roboticist** [Gen23b]. **Roboticians** [FBMI23, Gol23g, Sto23]. **Robotics** [Bea22, Bar20]. **Robots** [Ack21b, Ack22a, Ack22c, Ack22d, Ack23a, Ack23b, Ano21-144, Ano21-145, Ano22-131, Ano22-132, Gol23c, Gol23g, LH24, Pan20, Sto23, WPBS23, Ack24, Ano20-68, Ano20-91, Ano20-103, Ano20-104, Bar20, Gol23c]. **rock** [Gal20a]. **Rocket** [Bro22a, Per20f]. **rockets** [Fou22]. **role** [Cha20a]. **Roll** [RZ21, Sch23c].
Rollout [Smi22j]. **rollovers** [Per22a].
Roomba [Jon22g, Mar20g]. **rooms** [Ano20-68]. **Roots** [Gen24a]. **Rosedale** [Gen22]. **Roses** [Str22b]. **Ross** [Zor23b].
Round [Mar21d]. **Routers** [Mit20]. **Rover** [Ulr22, Pot20a]. **Royal** [Gen23c]. **rules** [AFH22, Smi20g]. **Run** [Svr23, Cha20b, Gen24c]. **Running** [Car24].
Runs [Jon22c, Reg23]. **Russian** [Usk21].
Ryckaert [Moo24a].
S [Gol23f]. **S**. [Der21g]. **Sackbut** [Mar24a].
Safe [ACDG21]. **safeguard** [RS23, SMD20].
Safety [Der21h]. **salad** [Gui20]. **salaries** [Per21c]. **salary** [Per22c]. **sale** [SG22].
salivate [Koz21a]. **salmon** [Nor20b]. **Sam** [Cas20b, Moo23a]. **Same** [Hec20, Bra21].
Samsung [Moo22b, Pal22]. **Sandia** [Der21d]. **Sandoval** [Der22d].
Sandoval-Pichardo [Der22d]. **Sapphire** [Lev21]. **Satellite** [Jag22, Koz21a, Zor22e, Lau23b, Mar20h, Raf20b].
Satellite-Imaging [Jag22]. **Satellites** [BD22, Koz20a, Mit20, Red20]. **Savant** [Has20b]. **Save** [Bow21, BSAH21, Car24, CPBZ21, GP22, Moo20b, Ong20, Per20c].
Savings [Smi21j]. **Saw** [GOL24a]. **Say** [ACDG21, AS22, Gal21b]. **Says** [Str22a, DM20]. **Scale** [Der21h, Gol23h, TB21, CFPP22, VH20].
Scan [Gen23e]. **Scandal** [Pau21]. **scanner** [GAG20]. **Scanning** [AS22, Pri21].
Scenarios [BSG22]. **Schematics** [Bro23c]. **scheme** [CD21]. **Schneider** [Gol23e].
Schrödinger [Ros22e]. **Sci** [Gol24c]. **Sci-Fi** [Gol24c]. **Science** [Der21g, JPWB21, MJH⁺21, SAS⁺21, Zim21, CKG⁺21].
Scientific [CP21, Dum20, Cas20h].
Scientist [Gol23e, Per20o]. **scientists** [NS20]. **Scientology** [Mar24c]. **Scope** [Har22]. **Scotland** [Fai24]. **SCR** [Bre20].
SCR-536 [Bre20]. **scramble** [Per20e, Ulr20c]. **scrambles** [Fai20a]. **scrap** [Smi22g]. **screen** [Som21]. **SDR** [Sch22b].
Sea [MD23, Sch22c]. **Seabed** [Zor22d].
Search [Sch22d]. **searches** [Ano20-86].
Second [Cas22c, Gen22, SH22b, RHBM22, Sch22e].
secret [LA22]. **Secrets** [Gol23e, Tei23, Der21d, RS23]. **sector** [Gol24b]. **secure** [Pes20b, SMD20]. **Secures** [Gen24a]. **Security** [Coo22, Gen24a, Lau24, RS23, Lew20, Ras20b]. **See** [Dol23a, Gol23d, RHBM22, PN20, Pes21a, Sch21b]. **Seeing** [Tei23, GAG20]. **seeks** [Raf20b]. **Seen** [Sch21b]. **segregation** [Moo20c].
Seismometer [Sch23a]. **Self** [Bra21, Mar23k, WPBS23, And20g, LG20,

Pan20, Smi23a]. **Self-Driving** [Mar23k, WPBS23, And20g, LG20, Pan20, Smi23a]. **Self-interference** [Bra21]. **Selfie** [Ano21-136]. **Semiconductor** [Gob23, Jes21, Kim22, Pat23a]. **Sensation** [Bou21]. **Sense** [Ano20-94, Pat20]. **Senses** [KK21, Dut22, Pes20f]. **sensing** [CFPP22]. **sensitive** [Har22, SMD20]. **Sensor** [Ano21-138, Ano21-137, CP21, CFPP22, Der21e, Per22a, Rab22, Ano20-91]. **Sensor-Rich** [CP21]. **sensoribility** [Ano20-94]. **Sensors** [CFPP22, Fit21, WPBS23, Ano20-79, Gen24c, Lee20, PK20, Per21a, WB21]. **sequestering** [Pat24a]. **Serious** [Gol23a, Fai23c]. **Service** [Lau23b]. **Set** [Der21e, Has20b]. **Seth** [Koz24a]. **Seven** [Ano21-116]. **several** [RHBM22]. **Severestorms** [FOSMD23]. **Sews** [Jor21]. **Shakes** [Sch23a]. **Shakespearean** [LCBH20]. **Shane** [Ano23a]. **Shaped** [PRR23]. **Shaping** [Zor22c]. **shares** [Goo23a]. **sharing** [Per20l, PSD22]. **Sheer** [Abb23]. **Shelves** [Nor20b]. **shift** [And20c]. **shifts** [And20g]. **ship** [And20a]. **Shipping** [Ano21-139, Pat24b]. **ships** [Gal21a, Pat24b]. **Short** [Bea22, Fru20]. **shortage** [Per20e]. **Shortcut** [BBFS22]. **Shot** [Jon22h, Ros23b, Wal20a]. **Should** [Cas22c, Pes21b, Ros23b, LG20, Per20h, Str24a]. **Shouldn't** [Fit21]. **show** [Pat20, Pat22, Str20b]. **shows** [WB21]. **Side** [Bro22d]. **Sight** [SH22b, RHBM22]. **sights** [Has20b]. **Signals** [Bou21, Har21]. **significantly** [Fun20]. **Silicon** [BVKR23, MZR21, Per20m, She24]. **Simple** [Cas23c, AG20, Sch20b]. **simpler** [Cly22]. **simplified** [Per22b]. **simplify** [Cas20f]. **Simulation** [Ano21-124, Ano21-140, Ano21-141, Ano20t, Ano21-134]. **Simulator** [Smi23b]. **Sinclair** [Cas20h]. **sing** [Cas20b]. **Singh** [Der23a]. **single** [Cas20a]. **sirens** [Ros20b]. **Sister** [MZR21]. **six** [Scu20b]. **Skeptical** [Cha23]. **sketch** [Per23]. **Skies** [JAR24, Ros22a]. **Skill** [Der21e]. **Skills** [Ano20-95, Bea22, Gol22b]. **Skin** [Som21, ZL20b]. **Skinny** [Smi21d]. **Sky** [Sch23c, Zor22e]. **Skydiver** [Jor21]. **Slam** [Ros22c]. **slash** [Gal21a, Gal21b]. **Sleuths** [Ano21-133]. **Slow** [Smi22j, Str24a, LG20]. **Slowed** [Smi21k]. **SLS** [Fou22]. **sludge** [Gal20b]. **Small** [Cha21b, Deg24, Koz21a, Str22a, Zor22b, Koz20a, LG20, Nor20a, Pat24b, Per20f]. **smaller** [RK22]. **Smallest** [Der22d]. **Smart** [Fit21, Hsu20c, Ano20-96, Ano20-97, GA20, Ros20b]. **Smartly** [CP21]. **Smartphone** [Sla21, Som21]. **Smartphones** [Ano20-96, Ano20-97, ZL20b]. **smashes** [Moo20e]. **Smashing** [SC23]. **Smell** [Str22b]. **Smelling** [Fit21]. **Smoke** [Fit21]. **SMS** [Tho21a]. **Snapshots** [PK20]. **Soar** [NG23]. **Socially** [Ano21-142]. **Software** [Cab24, Hub24, Hus24, Kas23, Pes21b, VA23, Ano21-29, Ano21-30, Bar20, Cas22b, Cha20b, Hsu20a, Lee20]. **Software-Defined** [Kas23, Cas22b, Lee20]. **Solar** [Ano21-124, Fai21, Jon23f, Pat24a, SC23, Sch22a, Fai20b, JJS22, LSM23]. **Solar-powered** [Pat24a]. **Solution** [Gal21a, Pou22, Zor22d]. **solutions** [Has20a]. **Solve** [Jon23i, NG23, DM20, Gol22a, Per20n, Sch21a]. **Some** [Ake23, Der21g, Smi21k, ZL20b, Ano20-87]. **someday** [Pat20]. **someone** [Ano21-27, Ano22-55]. **Somerton** [Abb23]. **Soon** [Bro21, Fou21, HS23]. **Soonish** [Zor23c]. **sort** [Cal22]. **Sound** [Mar24d, Arm20, LDO22, Ros21]. **Sounds** [Lew23, Ros20b]. **Source** [Gen24a, Smi22g]. **South** [Kim22, LSM23]. **Space** [AF23, CP21, Coo21, Der21f, Fou22, Jon23j, Sch21b, Sch22a, BMRW20, Jon24, Mit20, Pri21]. **Spacecraft** [CP21, Der21e, Zor22c, Red20]. **Spafford** [Der23c]. **spawned** [Cro20]. **Spawning** [Pat23a]. **speare** [LCBH20]. **Special** [Ano21-143, Mar20h]. **Spectacular** [Smi22m]. **Spectators** [Bea22]. **Spectral**

[Cha20a, Has20a, Has20b, Luc20a, Per20b, Per20l, Per20n, Per20e, Per20h, Per20o, Pre20]. **Spectrometer** [Coo22]. **Spectroscopy** [Ros22b]. **Spectrum** [Laz22, Bar20, Ano20s, Cas22a, Gol21, HPK22, Zor23b]. **Speed** [Ack23c, Moo23b, Sch21a, Cal22, Moo20e, Ros20a]. **speeds** [Hec20]. **spent** [Kum21]. **Spidey** [Pes20f]. **spies** [Luc20b]. **spin** [Lau24]. **spin-offs** [Lau24]. **sponsored** [Sto20]. **Spoof** [Har21]. **Spooky** [Jaf22]. **Spot** [Cas22b, GA20, MJS20, Per20a]. **spray** [And20b]. **spread** [Smi22j]. **sprung** [Gen24a]. **Spy** [Mar21a, Pau21]. **SQL** [Ano20-95, Cas22c]. **Square** [Per22b]. **squares** [Nor20a]. **Squash** [Sca22]. **St.** [Koz21a]. **Staff** [Ano23-135]. **Staggering** [Cas22g, Gol23h]. **standard** [Ros22c]. **stands** [Koz21a]. **star** [Gol23d, Per20g]. **Start** [Ros22a, LG20]. **Starts** [Eis23]. **Startup** [Der22g, Ano20-100, DM20, Gen24e, Ros22d, Str23]. **Startups** [AZPC22, Cly20, Moo21]. **State** [Fra21, MS22, Sto20]. **state-sponsored** [Sto20]. **Stay** [Per20g]. **Stay-at-home** [Per20g]. **Steal** [Baj22]. **Stealth** [Baj22]. **Steep** [Smi22c]. **Stefany** [Cas22d]. **Step** [Zor22b, Raf20b]. **Still** [Hub24, Smi21d, Smi22a, Per20b, Smi22g, Smi22k, Smi23b]. **still-mighty** [Smi22g]. **Stimulation** [Dol23a, Dol23b]. **Stirs** [Sch22c]. **stood** [Arm20]. **Storage** [Car24, Moo21, Dum22, Nor20a, Pat20]. **Store** [RZ21, Scu20a]. **Storing** [Nor20a]. **Story** [Ano20g, Ano20r, Ano20q, Ano20-69, Ano20-47, Ano20-48, Ano20-81, Ano20-92, Ano20s, Ano20-80, Ano20-102, Ano21-49, Ano21-50, Ano21-47, Ano21-48, Ano21-62, Smi21j]. **Storyteller** [Gol24c]. **straddles** [CD21]. **Strange** [GO22, Smi21m, Fru20]. **strategies** [Fou21, Pat22]. **strategy** [Koz20c]. **street** [Ros20b, Wea20]. **strength** [And20e]. **stretch** [ZL20b, Ack22b]. **stretchable** [Som21]. **Strikes** [Cas23c, Cha20a]. **Structures** [BF24, CP21]. **students** [Bar20, Sac20]. **Studio** [Smi21j]. **Study** [Ano21-140, Ano21-141, GO22]. **stuff** [Cas22b]. **stutters** [Per20j]. **Submarine** [Baj22]. **Subspace** [Tow21]. **substantial** [Jaf22]. **Subterranean** [Ack22c]. **Success** [Bro22a, Goo23a]. **Sucking** [Gal21b]. **Sucks** [Hus24]. **Sun** [Ano22-57]. **sunk** [LSM23]. **Sunny** [Ano21-55, Tow21]. **Superbatteries** [Smi22k]. **Supercharged** [Jes21]. **Supercharges** [SC23]. **Supercold** [Lev21]. **supercomputer** [Sch22e]. **Supercomputing** [Dum23, And20i]. **superconducting** [Cly23]. **superheroes** [Gen23b]. **Superhuman** [Ack23c, Cal22]. **Superior** [Wat24]. **Superpower** [Kim22]. **Supersonic** [Ros21, Sch21e]. **supplies** [Ano20-68]. **Supply** [AFH22, Pes21b, Fai20a, LSM23, RG20, Sch20c]. **sure** [Hig20e]. **surfaces** [Pou22]. **Surgeons** [Bea22]. **Surgery** [Bea22]. **Surgical** [Bea22]. **Suri** [Gen24c]. **Surpass** [Bro21]. **Surprises** [Cas23c, Sca22]. **Surprisingly** [Cho21, Sar20]. **Surveillance** [Lau24, Pes21a]. **survey** [Per22c]. **Survivors** [Str22b]. **Sushama** [Gen23d]. **Sustain** [Smi21e]. **SUV** [Per20l, Per22a, Smi21j]. **SUVs** [Smi21j]. **swabbed** [Ano20-68]. **Swallowed** [CG23]. **sweat** [MW20]. **Swimmer** [Mar21a]. **switch** [Jes21, Zor20]. **switches** [Zor20]. **Synchron** [Wal24]. **System** [Ano21-124, Fou22, Kas23, Ros22a, Moo23b, NG23, PSD22]. **System-Level** [Kas23]. **systemic** [Moo20c]. **Systems** [CD21, Ano20g, Ano20-90, Cal22, Cha20b, CHM21, Der21d, Hsu20a, Pat24a, Has20b]. **T** [Sch20b]. **T-coil-equipped** [Sch20b]. **Table** [Ano20-98, Ano21-113]. **tackle** [Per20e]. **Tackling** [Chi21]. **Tags** [TB21]. **Take** [Ano22-56, Cho23, Jon23b, MZR21, Per20h, Sch21e, WAC⁺20, Ano20-80, DM20, Fun20, Jag22]. **takeoff** [DM20]. **Takes**

[Cal22, Sto20, Str20a, Wal20a]. **Taking** [Mar23j, RK22]. **Talkie** [Bre20]. **talking** [CD21]. **Tan** [Str23]. **Tandy** [Cas22f]. **Tanghal** [Der23b]. **tanks** [Gal20b]. **Tap** [Fai23a]. **tape** [Cly23]. **Tapped** [FBMI23]. **Tardigrade** [Ros22e]. **tasks** [AG20]. **Taste** [Ano24-48]. **tattoos** [Scu20a]. **taught** [ALRW21, SZ20]. **Taxi** [AZPC22]. **Taxis** [NG23]. **Taylor** [Koz23b]. **teach** [Wea20]. **teacher** [Bar20]. **Team** [Ack21b, Bou20]. **Tech** [Ano21-114, Ano21-143, Ano22-129, Ano23-136, Ano24-49, Cha23, Cho23, Dum22, MD23, Per21c, RZ21, Shi22, Szk21, Wat24, You22, And20h, CFPP22, Der22h, Gar20, Has20a, HS23, Koz24c, McC20, Ong20, Per20a, Per20b, Per20m, Per20d, Per20g, Per20i, Raf20b, Rak24, Ras20b, Sac20, Smi23a, SZ20, Ulr20a, Ulr20c, YS20]. **Technical** [Gen23a]. **Technicolor** [HF22]. **Technologies** [GOL24a, Gol23d, LG20, Pal22]. **technologists** [BS22]. **Technology** [Der23d, JPWB21, Jon23a, MJH⁺21, SAS⁺21, Ano20-100, CKG⁺21, Gol22d, Gol22e, Gol22f, Hsu20b, Lee20, Smi22i]. **technophobes** [Per20g]. **teenager** [Sha23]. **Tekla** [Gol23f]. **telecom** [Koz21a]. **Telepresence** [Ack23a]. **telescope** [Bou20, HPK22, Sch21b]. **television** [Mie22]. **Tell** [Fra21, Mar23k, Hut21]. **Tells** [Gol22f]. **temperature** [Cly23]. **term** [And20d]. **Terminators** [BSG22]. **Tesla** [Har22, Ulr22]. **Tesler** [Per20o]. **Test** [Dum22, Gar20, Koz20c, Koz23d, Per20e, Ros21, Ros22d, YS20]. **Testing** [YS20, Der22h, Per20a]. **Tests** [Har21, Der22f, Per20a, YS20]. **Texas** [Gal21b, NG23]. **text** [Lau23b]. **Textiles** [CP21]. **Texting** [Tho21a]. **thank** [Per20o]. **their** [Gal21a, Gol23d, NS20, Per20b]. **Them** [BVKR23, Gol23g, Mar23j, Ack23b, And20h, Sch22b]. **Themselves** [Ros22c, Ack21a, Koz20b]. **theory** [SHD20, ZL20a]. **therapy** [HVW20]. **There** [Pou22, Pes20a, Str21, PK20]. **thermal** [Zel20]. **thermodynamics** [AF23]. **These** [Arm20, WC23]. **they'll** [Ano20-68]. **they're** [Hsu20a]. **thick** [Rad20]. **Thin** [Gob23]. **thing** [LCBH20]. **Things** [BVKR23, Pes21b, Str24a]. **Thinks** [Cha23]. **Third** [FBMI23, Per20c, Shi22]. **Thomas** [Der21d]. **thousand** [Cas20b]. **Thousands** [Smi21e, Jes21, Kum21]. **threatened** [Sha23]. **threats** [Der23c]. **Three** [Fou21, Moo20b]. **Threshold** [BS22]. **throats** [Ano20-68]. **throughout** [Moo20c]. **Throw** [MW20]. **thrust** [Cas20b]. **Thwart** [TB21]. **ticket** [Per20j]. **Ticks** [Lev21]. **Time** [Bow21, Gol23a, Sch23c, Ano20-68, Per20m, Pes20e, Zor22d, Dum20]. **Time-Lapse** [Sch23c]. **Timekeeper** [Lev21]. **Timeline** [Cas22e]. **Times** [Cor21b]. **Timing** [Wat24, Raf20a]. **Tinier** [Van23]. **Tiny** [Gob23, WPBS23, MS22, Per22a]. **Tips** [Ash23]. **tissue** [SMD20]. **Today** [Bea22, MSS21, PRR23, Ano20-78, Per20o]. **together** [Bou20, Pal22]. **Tokyo** [Mar23j]. **toll** [SB22a]. **Tomorrow** [Bea22, Hut20]. **Tones** [Tho21b]. **tons** [Kum21]. **To** [Hut20, Smi21d]. **Took** [HF22, Per20c]. **Tool** [Cor21b, Cro20, Gen24e, Hsu20a, Tem20]. **Tools** [RZ21, VA23, Gol22b]. **Top** [Ano21-143, Ano22-129, Ano23-136, Ano24-49, Cas21d, CG23, GEN24b, Ulr20c, Ano20-95, Cas20i]. **top-again** [Cas20i]. **topological** [Cho20]. **Touch** [Gan24]. **Tough** [Smi21n]. **tour** [WAC⁺20]. **toured** [Fru20]. **town** [PK20]. **Toyota** [Ack22a]. **Tracing** [Ano21-124, Hsu20b, Pes21a]. **Tracker** [Sla21]. **Tracking** [Rab22]. **trade** [LA22]. **traditional** [Gal20a]. **Traffic** [Tow21, Der22b, NG23, Raf20a]. **Train** [Chi21]. **Trainees** [Bea22]. **Training** [Bea22]. **transactions** [Per22b]. **Transform** [Ano20-73, Ano21-122, Gob23, Ano20-72, Cly23]. **transformation** [Fai24]. **Transformed** [Bro23a]. **Transformer**

[Fai23c]. **Transforming** [Ano21-56]. **Transgenic** [Nor20b]. **Transistor** [Ano22-130, Cas22e, MS22, Moo22c, Zor22a]. **Transistors** [Gol22c, Van23, Per20c, RK22, Rad20, Rak24]. **Transition** [Cha23, Gol23h, Gol22f, JJS22]. **transmission** [Fai24]. **transmit** [Bra21, Sch20b]. **Transparent** [Baj22, Smi22b, HVW20]. **transport** [MMP22, Ros22d]. **Transportation** [ACDG21, AZPC22, Der22a, Gol24b, Per20]. **trap** [Pes20c]. **Travel** [Ros21]. **treasure** [Sch22d]. **treated** [Arm20]. **treating** [Ano20-68]. **treatment** [And20b, And20e]. **trees** [PN20]. **Trend** [Ulr21]. **Trick** [Van23]. **tricky** [Cas22f]. **tries** [BBS23]. **triggering** [Fai21]. **Trip** [Smi21m]. **Trippe** [Bro22b]. **trips** [WAC⁺20]. **Triumphs** [Ano20-99]. **trojan** [LA22]. **Troynikov** [Koz23a]. **Trucks** [Ack21a]. **truly** [LDO22]. **try** [Pri21]. **Tube** [Shi22, Ano20-81, Cas20e]. **tunes** [And20f]. **tuning** [Per22a]. **tunnels** [Cas22e]. **Turbine** [Jon23k]. **Turbulent** [Str21]. **Turf** [Laz22]. **Turing** [Cas21c, Reg23]. **Turn** [Smi22h, Der22c, Gol23d, Per20g, SMD20]. **Turned** [Smi21]. **Turning** [Ano20-100, Bar20, Tho21b, Ano20-99]. **Turns** [Bea22, Rae20]. **tutor** [BBS23]. **TV** [Cas22b, Mie22, Pal22]. **tweet** [Cas20a]. **Twilight** [Pau21]. **twist** [Mie22]. **Two** [Ake23, And20d, CD21, GP22, HF22, Mar24d, Per20a, SB22a, Zor20]. **type** [Mie22]. **types** [Dol23b].

U.S. [Ack21b, And20d, Moo20c, Nor20b, Ong20, Pat23a, Per22c, Raf20b]. **ubiquitous** [MS22]. **UCDAVIS** [Ano20-101]. **UI** [Gen23d]. **Ultimate** [Cas22e, Fou22]. **Ultium** [Ulr20b]. **Ultra** [Deg24, BSG22]. **ultra-deepfakes** [BSG22]. **ultrafast** [Koz20c]. **Ultralight** [Cri20, Zor23c]. **Ultrasound** [Deg24]. **ultraviolet** [And20h]. **Unappreciated** [Cab24]. **Uncertain** [Str21]. **Uncovering** [GH23]. **underappreciated** [RG20]. **Underground** [Ack22c, Ack22d]. **Undermine** [Baj22]. **undermined** [Moo20c]. **understand** [HVW20, Pre20, Wea20]. **unfairly** [Smi22g]. **unfortunately** [Smi22i]. **unhackable** [Moo24b]. **Unicorn** [She24]. **Unilever** [Gen24d]. **Universal** [Gen23e, VH20]. **Universe** [Gen22, HPK22, Jon23i]. **universities** [Cly20]. **University** [Ano20-101, Pat23a, Der22c]. **unleash** [Gol22b]. **Unsustainable** [TGLM21]. **until** [Cha20b, Fru20]. **Unused** [FBMI23]. **Unveil** [Gol23e]. **unveils** [Per20]. **up-and-down** [Rae20]. **Upcycling** [Cas22f]. **Upon** [Sch22e]. **Ups** [Moo21]. **Upside** [Bro22c]. **uranium** [Mar20e]. **urban** [Per20]. **USA** [Per22c]. **Use** [Sch23c, Smi21j, Pou22, Ras20b, Szk21, YS20]. **use-anywhere** [YS20]. **used** [Hsu20a]. **user** [Der20, Gol22e, Per20o]. **users** [Hsu20a]. **uses** [Cho20, Zor20]. **Usher** [Wal21, Ros21]. **Using** [LH24, Pre20, RHBM22, Cas20e, Dum22, Koz23b, Per20f, Per20e]. **usual** [Pes20d]. **Utrecht** [Dum22]. **UV** [And20h, Cas24c]. **UV-K5** [Cas24c].

V [Gen24a, Szk21]. **V2G** [Gol22f]. **Vaccinate** [Gib21]. **vaccine** [Scu20a, Wal20a]. **Vaccines** [Wal21, Wal22]. **Vacuum** [Shi22, Arm20]. **Valley** [Per20m, She24]. **valuable** [Tem20]. **value** [Fou22, Per20h]. **Vanns** [Gen23a]. **Variants** [Wal22]. **variety** [Pat22]. **Varkey** [Sac20]. **Vast** [Der22d, Fai20b]. **Vastly** [Wat24]. **VC** [Der22a, Der23b]. **vector** [Cas20e]. **vector-graphics** [Cas20e]. **Vegan** [Smi22h]. **Vehicle** [Dum22, Eis23, Gol22f, MMP22, Ong20]. **Vehicle-to-Grid** [Dum22, Eis23, Gol22f]. **Vehicles** [Der23a, Ros23a, Smi21j, And20c, Ano20i, LG20, Ong20, Red20, Ulr20b, Wea20]. **Venus** [Ano24-48, MZR21]. **verse**

[LCBH20]. **Versions** [Bow21]. **vertical** [DM20]. **vertical-takeoff** [DM20]. **very** [GA20]. **vessel** [Wal24]. **VHF** [Tho21a]. **via** [Lau23b, Wal24]. **vicious** [And20h]. **Video** [Gen23d, Lau24, Smi23b]. **videoconferencing** [Sch20d]. **videos** [Hec20]. **vie** [Ack24]. **View** [Ano24-47, Jag22]. **Vince** [Koz24b]. **Vint** [Per23]. **vintage** [Sch23b]. **Violence** [Moo20c]. **violin** [Ano20-50]. **virtual** [Ano20-102]. **virtually** [Pes20a]. **viruses** [And20h]. **Vision** [Ano22-108, SC23, Cal22, Ros22d]. **Vital** [GH23]. **vodka** [Ano20-100]. **Voiceprinting** [Smi23c]. **Voices** [Smi23c]. **Voltage** [Bow21, Fai24]. **volts** [Jes21]. **Volume** [Lew23]. **votes** [Hig20e]. **voyage** [And20a]. **VR** [Per20j, WAC⁺20]. **vs** [Hig20g]. **Vulnerability** [Hub24, RG20]. **vying** [Cly20].

Wage [Per20i]. **Waiting** [Har21, Smi22k]. **Waits** [Koz21a]. **Wallet** [Per22b, ZL20b]. **Wanamaker** [Bar20]. **Want** [FBMI23, Per20h]. **Wanted** [Jon22b, Raf20b, Ano20-95, Cas20g]. **wants** [AG20, Ack21b, Per22b]. **War** [Smi22f, Arm20]. **Warehouse** [Ack22b]. **warn** [Hsu20c]. **Wars** [Laz22, Mis23]. **Was** [Hoc22, Bro22b, Cas20h, Fru20, Smi23b]. **Washing** [Pre20]. **waste** [Kum21]. **Watch** [And20f, Ano20-91, Ham20d, Ham20b, Hsu20c, Wal20b]. **Watchdog** [Fit21]. **Watts** [Pat23b]. **Wave** [AZPC22, Koz20c]. **waves** [Gal20a]. **Way** [Cab24, Sca22, Koz21a, Sch20b, Str21]. **Ways** [BVKR23, Cho21, Fou21, Moo20a, RG20]. **Weaning** [JJS22]. **Weapons** [Pat23b]. **Weapons-Grade** [Pat23b]. **wear** [Sch20b, ZL20b]. **Wearable** [KK21, MW20]. **Wearables** [Bou21, Per21a]. **wearing** [Pre20]. **Weather** [Sch22a, Sch22b, Tow21]. **Weave** [Cas22g]. **Weaving** [Mar20i]. **Web** [Pau22]. **Web-Enabled** [Pau22]. **Web3** [Koz23c]. **Webb** [Sch21b, HPK22]. **Website** [Gol21]. **weeks** [Ano20p]. **Weight** [GP22]. **Weird** [Ano23a, Cas22f, MS22]. **We'll** [Gol24b, FOSMD23, Ros23b, Pes21a]. **Well-Connected** [FOSMD23]. **wells** [Gal20a]. **We're** [Mar23j, Bro22a, Raf20b]. **west** [Ano20f, Gal21b]. **We've** [GOL24a]. **Where** [BMRW20, Jon23k, Sch21b, Per20h]. **wherever** [Per20h]. **Whether** [Fra21]. **while** [Ras20b, Sch20d]. **white** [Per20b, Koz23c]. **Who** [Ack23b, BSG22, Gol23g, Gol24c, HP20, Jor21, Per20o, Sch20b]. **Wi** [Koz24c, Hig20j, Zel20]. **Wi-Fi** [Koz24c, Hig20j, Zel20]. **Wide** [Mis23, Smi21e]. **Wide-Bandgap** [Mis23]. **Wide-Body** [Smi21e]. **wild** [Ano20f]. **Wildfire** [Fit21]. **Will** [And20b, And20i, Baj22, Cho23, CPBZ21, Dol23a, Fou22, Mis23, Smi23a, Ack20, Ack21a, AS22, BS22, Bow21, BSAH21, Cly22, Dum20, Dum23, Fou21, Fun20, GOL24a, GO22, GA20, Has20a, Hut20, Koz23d, Lau23b, MW20, Mit20, Moo22b, Moo22c, MD23, Pal22, Pan20, Pat22, Pot20a, Ros22c, Ros22d, Sch21b, Sch22c, Smi22h, Sto20, VH20, WPBS23]. **Wimshurst** [Mar23c]. **Win** [Gen24a, Mis23, SG22, Pot20b, ZL20a]. **Wind** [Ano23-137, Jon23k, MD23, JJS22]. **Wind-Powered** [Ano23-137]. **Wind-to-Hydrogen** [MD23]. **windfall** [Koz24b]. **Winding** [Mur23]. **Windows** [Bro23a, Ros20b]. **Winds** [Fai23a]. **wine** [Smi20e]. **Wingman** [Lev20]. **Winners** [Sto23]. **winning** [SZ20]. **Wins** [Gen23a]. **Winter** [Pat22]. **WinZips** [Per21b]. **Wireless** [BD22, Ulr20a, Koz21b, Koz24c, SMD20]. **Wiretapper** [Hoc22]. **wish** [Ano20-95]. **Without** [Gol22e, Lew23, Ros22d, WC23, And20h]. **Withstand** [FOSMD23, Cha21a]. **Wizard**

[Zor23b]. **Wizards** [Ano21-50]. **Wombs** [Zim21]. **Women** [GEN24b, Per20i, Per20b]. **wonder** [Smi23b]. **Wonderful** [Mar21j, Gol23c]. **Won't** [Pau22, Bro21]. **word** [Tho21b]. **Work** [Ros23b, Cro20, Der21d, Der22f, NS20, Per20h, Pre20]. **Workbench** [Coo21]. **Worked** [Zor22a, Smi23b]. **workers** [AS22, Ano20-68]. **Workforce** [Pat23a]. **Working** [Der21g, Pes21b, NG23]. **Workplace** [AS22, Per20d]. **Works** [MSS21]. **World** [Ano21-144, Ano22-131, Ano22-132, Car24, CG23, Gen23e, Gib21, GO22, GP22, Lev21, McC20, PRR23, Smi21k, Smi22h, Ano20-103, Ano20-104, Ano21-145, Ano22-130, Cha20b, Dum22, Gol23c, Jon24, Zor20, Sto23]. **Worldcoin** [Gen23e]. **Worst** [Ack22b, BSG22]. **Worst-Case** [BSG22]. **would** [DM20, PSD22]. **Wrapped** [CP21]. **Write** [Cab24, Cas20a]. **Writes** [Der21g]. **Wrong** [Ano23a, Hig20i]. **WW** [Hoc22]. **WYSIWYG** [Bro23a].

X [Cas20g, LA22, Mar20f]. **X-ray** [LA22, Mar20f]. **XB** [Ros21]. **XB-1** [Ros21]. **Xerox** [Bro23a]. **XPrize** [Ack23a, Ano20-100].

Year [Abb23, Ack24, Smi21f, Str24b, Zor22c, Ack21a, Ano20t, Per20j, Per20a, Smi20h]. **Years** [GOL24a, SB22a, Der22b, Fun20, Jon24, MS22, Scu20b, Smi20d, ZL20b, Zor22d, Zor23b]. **yellow** [GA20, Raf20a]. **yellow-light** [Raf20a]. **yields** [Sca22]. **York** [Hoc22]. **You'll** [Cas23b]. **Younger** [Ack22a]. **Yours** [Cas22g]. **yourself** [CD21]. **Yugoslavia** [Ack23d, Cas23d]. **Yung** [Der22c]. **Yung-Hsiang** [Der22c].

Z [Cly22]. **Z-pinch** [Cly22]. **Z80** [Ack23d, Cas23d]. **Z80-based** [Ack23d, Cas23d]. **Zach** [Gen24e]. **Zap** [Cly22]. **Zero** [Cas23b, Fit21]. **Zero-Power** [Fit21]. **Zittrain** [Der23d]. **Ziv**

[Per21b]. **Zoom** [Hec20, Sch20d]. **Zurich** [Ano22-51].

References

Abbott:2023:FSM

[Abb23] Derek Abbott. Finding Somerton Man: How DNA, AI facial reconstruction, and sheer grit cracked a 75-year-old cold case. *IEEE Spectrum*, 60(4):22–30, April 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Ackerman:2021:THS

[ACDG21] Evan Ackerman, Stephen Cass, Michael Dumiak, and Maria Gallucci. Transportation: How safe are eVTOLs?: Extremely safe say manufacturers: News. *IEEE Spectrum*, 58(11):6–13, November 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Ackerman:2020:EWO

[Ack20] E. Ackerman. This exoskeleton will obey your brain. *IEEE Spectrum*, 57(1):50–51, January 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Ackerman:2021:RTO

[Ack21a] E. Ackerman. Robot trucks overtake robot cars: This year, trucks will drive themselves on public roads with no one on board. *IEEE Spectrum*, 58(1):42–43, January 2021. CO-

- DEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ack21b] Evan Ackerman. Deep learning goes to boot camp: The U.S. Army wants to team humans and robots on the battlefield. *IEEE Spectrum*, 58(10):56–62, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ack22a] Evan Ackerman. How robots can help US act and feel younger: Toyota’s Gill Pratt on enhancing independence in old age. *IEEE Spectrum*, 59(8):26–31, August 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ack22b] Evan Ackerman. A robot for the worst job in the warehouse: Boston Dynamics’ Stretch can move 800 heavy boxes per hour. *IEEE Spectrum*, 59(1):50–51, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ack22c] Evan Ackerman. Robots conquer the underground: What DARPA’s subterranean challenge means for the future of autonomous robots. *IEEE Spectrum*, 59(5):30–37, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ack22d] Evan Ackerman. Underground with robots. *IEEE Spectrum*, 59(5):2, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ack23a] Evan Ackerman. Human in the loop: What the avatar XPrize revealed about the future of telepresence robots. *IEEE Spectrum*, 60(5):38–44, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ack23b] Evan Ackerman. A robot for humanity: How robots can empower people who need them the most. *IEEE Spectrum*, 60(11):22–29, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ack23c] Evan Ackerman. Superhuman speed : How autonomous drones beat the best human racers. *IEEE Spectrum*, 60(9):30–37, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ack23d] Evan Ackerman. Yugoslavia’s home-brewed microcomputer: The Z80-based Galaksija dared to be different. *IEEE Spectrum*, 60(8):21–22, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Ackerman:2021:DLG**
- Ackerman:2022:HRC**
- Ackerman:2022:RWJ**
- Ackerman:2022:RCU**
- Ackerman:2022:UR**
- Ackerman:2023:HLW**
- Ackerman:2023:RHH**
- Ackerman:2023:SSH**
- Ackerman:2023:YHB**

- [Ack24] **Ackerman:2024:YHL**
Evan Ackerman. Year of the humanoid: Legged robots from eight companies vie for jobs. *IEEE Spectrum*, 61(01):44–48, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [ACLS22] **Ackerman:2022:Nb**
Evan Ackerman, Charles Q. Choi, Lucas Laursen, and Rebecca Sohn. News. *IEEE Spectrum*, 59(9):6–13, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [AF23] **Assawaworrarit:2023:CSC**
Sid Assawaworrarit and Shanhui Fan. The coldness of space can power earth: We can hack thermodynamics to cool buildings and light up the night. *IEEE Spectrum*, 60(12):40–45, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [AFH22] **Almassalkhi:2022:PPG**
Mads Almassalkhi, Jeff Frolik, and Paul Hines. Packetizing the power grid: The rules of the Internet can also balance electricity supply and demand. *IEEE Spectrum*, 59(2):42–47, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [AG20] **Ackerman:2020:RKI**
E. Ackerman and E. Guizzo. A robot that keeps it simple: Hello robot wants to reinvent how autonomous machines perform tasks at home. *IEEE Spectrum*, 57(10):11, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ake23] **Akesson:2023:CTC**
Linus Akesson. The Commodordion: Two C64s plus some floppy disks equals one instrument. *IEEE Spectrum*, 60(1):20–22, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [ALRW21] **Acuto:2021:WWL**
Michele Acuto, Shaun Larcom, Ferdin Rauch, and Tim Willems. What we learned from the pandemic: Most of all, it taught us how to adapt under pressure. *IEEE Spectrum*, 58(8):22–27, August 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [AMK+20] **Anderson:2020:FPC**
M. Anderson, S. K. Moore, M. Koziol, R. N. Charette, and M. Scudellari. Fractional particles could mean new electronics: Quasiparticles might lead to new kinds of quantum computers — [news]. *IEEE Spectrum*, 57(11):6–13, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [And20a] **Anderson:2020:BVA**
M. Anderson. Bon voyage for the autonomous ship

Mayflower. *IEEE Spectrum*, 57(1):36–39, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anderson:2020:EAM

[And20b] M. Anderson. Engineered antibody mist blocks coronavirus: Will the first breakthrough COVID-19 treatment be an inhaler or nasal spray? — [news]. *IEEE Spectrum*, 57(10):6–7, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anderson:2020:EBS

[And20c] M. Anderson. EV batteries shift into high gear: Advances in anodes, cathodes, and electrolytes are poised to appear in future electric vehicles. *IEEE Spectrum*, 57(4):8–9, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anderson:2020:LPU

[And20d] M. Anderson. Limited progress for U.S. nuclear: Two fission projects raise questions about the long-term future of nuclear power — [news]. *IEEE Spectrum*, 57(6):6–7, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anderson:2020:PSG

[And20e] M. Anderson. Prescription-strength gaming: ADHD treatment now comes in the form of a first-person racing game — [news]. *IEEE Spectrum*, 57

(8):9–10, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anderson:2020:PTP

[And20f] M. Anderson. PrintFixer tunes any 3D printer — [journal watch]. *IEEE Spectrum*, 57(4):7, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anderson:2020:RAS

[And20g] M. Anderson. The road ahead for self-driving cars: The AV industry has had to reset expectations, as it shifts its focus to level 4 autonomy — [news]. *IEEE Spectrum*, 57(5):8–9, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anderson:2020:UOG

[And20h] M. Anderson. The ultraviolet offense: Germicidal UV lamps destroy vicious viruses. New tech might put them many more places without harming humans. *IEEE Spectrum*, 57(10):50–55, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anderson:2020:WCA

[And20i] M. Anderson. Will China attain exascale supercomputing in 2020? *IEEE Spectrum*, 57(1):52–53, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [Ano20a] **Anonymous:2020:Aa** Anonymous. Advertisements. *IEEE Spectrum*, 57(8):51, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano20b] **Anonymous:2020:Ab** Anonymous. Advertisements. *IEEE Spectrum*, 57(9):52, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano20c] **Anonymous:2020:Ac** Anonymous. Advertisements. *IEEE Spectrum*, 57(10):68, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano20d] **Anonymous:2020:Ad** Anonymous. Advertisements. *IEEE Spectrum*, 57(10):70–71, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano20e] **Anonymous:2020:Ae** Anonymous. Advertisements. *IEEE Spectrum*, 57(11):50–51, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano20f] **Anonymous:2020:AAF** Anonymous. Applying AI in forestry’s wild west. *IEEE Spectrum*, 57(8):2, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano20g] **Anonymous:2020:ALS** Anonymous. Attack of the legacy systems — [back story]. *IEEE Spectrum*, 57(9):2, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano20h] **Anonymous:2020:AAA** Anonymous. Automaton administers antiviral aerosol — [news]. *IEEE Spectrum*, 57(5):14–15, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano20i] **Anonymous:2020:AVR** Anonymous. Autonomous vehicles require batteries with lasting power. *IEEE Spectrum*, 57(12):5, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano20j] **Anonymous:2020:BCa** Anonymous. Back cover. *IEEE Spectrum*, 57(8):c4, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano20k] **Anonymous:2020:BCb** Anonymous. Back cover. *IEEE Spectrum*, 57(9):c4, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano20l] **Anonymous:2020:BCc** Anonymous. [Back cover]. *IEEE Spectrum*, 57(10):c4, October 2020. CODEN IEESAM. ISSN

0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:BCd

[Ano20m] Anonymous. [Back cover]. *IEEE Spectrum*, 57(11):c4, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:BICa

[Ano20n] Anonymous. [Back inside cover]. *IEEE Spectrum*, 57(10):c3, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:BICb

[Ano20o] Anonymous. [Back inside cover]. *IEEE Spectrum*, 57(11):c3, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:BPA

[Ano20p] Anonymous. Become a published author in 4 to 6 weeks [advertisement]. *IEEE Spectrum*, 57(12):15, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:BPB

[Ano20q] Anonymous. Biology's potentials — [back story]. *IEEE Spectrum*, 57(7):02, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:BEB

[Ano20r] Anonymous. The body electric — [back story]. *IEEE Spectrum*,

57(12):2, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:SBB

[Ano20s] Anonymous. *Spectrum's* bellwether — [back story]. *IEEE Spectrum*, 57(5):2, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:CCN

[Ano20t] Anonymous. COMSOL conference: 2020 North America: The multiphysics simulation event of the year. *IEEE Spectrum*, 57(8):17, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:CFC

[Ano20u] Anonymous. Concrete facts — [CrossTalk]. *IEEE Spectrum*, 57(3):20–21, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Ca

[Ano20v] Anonymous. Contents. *IEEE Spectrum*, 57(1):1, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cc

[Ano20w] Anonymous. Contents. *IEEE Spectrum*, 57(2):1, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Ce

[Ano20x] Anonymous. Contents. *IEEE Spectrum*, 57(3):1, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cg

[Ano20y] Anonymous. Contents. *IEEE Spectrum*, 57(4):1, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Ci

[Ano20z] Anonymous. Contents. *IEEE Spectrum*, 57(5):1, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Ck

[Ano20-27] Anonymous. Contents. *IEEE Spectrum*, 57(6):1, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cn

[Ano20-28] Anonymous. Contents. *IEEE Spectrum*, 57(8):1, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cp

[Ano20-29] Anonymous. Contents. *IEEE Spectrum*, 57(9):1, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cr

[Ano20-30] Anonymous. Contents. *IEEE Spectrum*, 57(10):1, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Ct

[Ano20-31] Anonymous. Contents. *IEEE Spectrum*, 57(11):1, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cb

[Ano20-32] Anonymous. Contributors. *IEEE Spectrum*, 57(1):3, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cd

[Ano20-33] Anonymous. Contributors. *IEEE Spectrum*, 57(2):3, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cf

[Ano20-34] Anonymous. Contributors. *IEEE Spectrum*, 57(3):3, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Ch

[Ano20-35] Anonymous. Contributors. *IEEE Spectrum*, 57(4):3, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cj

- [Ano20-36] Anonymous. Contributors. *IEEE Spectrum*, 57(5):3, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cl

- [Ano20-37] Anonymous. Contributors. *IEEE Spectrum*, 57(6):3, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cm

- [Ano20-38] Anonymous. Contributors. *IEEE Spectrum*, 57(7):03, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Co

- [Ano20-39] Anonymous. Contributors. *IEEE Spectrum*, 57(8):3, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cq

- [Ano20-40] Anonymous. Contributors. *IEEE Spectrum*, 57(9):3, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cs

- [Ano20-41] Anonymous. Contributors. *IEEE Spectrum*, 57(10):3, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cu

- [Ano20-42] Anonymous. Contributors. *IEEE Spectrum*, 57(11):3, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:Cv

- [Ano20-43] Anonymous. Contributors. *IEEE Spectrum*, 57(12):4, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:CIg

- [Ano20-44] Anonymous. CrossTalk: Indeterminate growth. *IEEE Spectrum*, 57(9):20–21, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:EPC

- [Ano20-45] Anonymous. Electricity prices: a changing bargain: Crosstalk. *IEEE Spectrum*, 57(2):17–18, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:EBN

- [Ano20-46] Anonymous. Emergency broadcast — [news]. *IEEE Spectrum*, 57(6):12–13, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:EPB

- [Ano20-47] Anonymous. The engineer's perspective — [back story]. *IEEE Spectrum*, 57(3):2, March 2020.

CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FRB

- [Ano20-48] Anonymous. Final reflections — [back story]. *IEEE Spectrum*, 57(1):2, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FFF

- [Ano20-49] Anonymous. Flying fast, far, and fuelless — [news]. *IEEE Spectrum*, 57(3):14–15, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:VPC

- [Ano20-50] Anonymous. For violin, press command-print — [news]. *IEEE Spectrum*, 57(4):14–15, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FFL

- [Ano20-51] Anonymous. Formula 1 fantasy league — [news]. *IEEE Spectrum*, 57(8):12–13, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FCa

- [Ano20-52] Anonymous. [Front cover]. *IEEE Spectrum*, 57(1):c1, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FCb

- [Ano20-53] Anonymous. Front cover. *IEEE Spectrum*, 57(2):c1, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FCc

- [Ano20-54] Anonymous. Front cover. *IEEE Spectrum*, 57(3):c1, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FCd

- [Ano20-55] Anonymous. Front cover. *IEEE Spectrum*, 57(4):c1, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FCe

- [Ano20-56] Anonymous. Front cover. *IEEE Spectrum*, 57(5):c1, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FCf

- [Ano20-57] Anonymous. Front cover. *IEEE Spectrum*, 57(6):c1, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FCg

- [Ano20-58] Anonymous. Front cover. *IEEE Spectrum*, 57(8):c1, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FCh

- [Ano20-59] Anonymous. Front cover. *IEEE Spectrum*, 57(9):c1, September 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FCi

- [Ano20-60] Anonymous. [Front cover]. *IEEE Spectrum*, 57(10):c1, October 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FCj

- [Ano20-61] Anonymous. [Front cover]. *IEEE Spectrum*, 57(11):c1, November 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FCK

- [Ano20-62] Anonymous. [Front cover]. *IEEE Spectrum*, 57(12):c1, December 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FICa

- [Ano20-63] Anonymous. [Front inside cover]. *IEEE Spectrum*, 57(10):c2, October 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FICb

- [Ano20-64] Anonymous. [Front inside cover]. *IEEE Spectrum*, 57(11):c2, November 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:FICc

- [Ano20-65] Anonymous. [Front inside cover]. *IEEE Spectrum*, 57(12):c2, December 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:GGM

- [Ano20-66] Anonymous. Good grids make good neighbors. *IEEE Spectrum*, 57(12):38–43, December 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:HL

- [Ano20-67] Anonymous. The healing light. *IEEE Spectrum*, 57(9):50, September 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:HRB

- [Ano20-68] Anonymous. How robots became essential workers: They disinfect hospital rooms. They delivered medical supplies. They swabbed people's throats. Next time around, they'll be treating patients. *IEEE Spectrum*, 57(10):36–43, October 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:DCE

- [Ano20-69] Anonymous. I drive the car electric — [back story]. *IEEE Spectrum*, 57(4):2, April 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:IFR

- [Ano20-70] Anonymous. IEEE Foundation: Realize: The full potential of IEEE. *IEEE Spectrum*, 57(12):7, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:IMD

- [Ano20-71] Anonymous. IEEE member discounts: Exclusive offers are another big plus to IEEE membership. *IEEE Spectrum*, 57(8):31, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:ITOa

- [Ano20-72] Anonymous. Innovate: transform our future. *IEEE Spectrum*, 57(8):23, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:ITOb

- [Ano20-73] Anonymous. Innovate: Transform our future. *IEEE Spectrum*, 57(9):13, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:IBCa

- [Ano20-74] Anonymous. Inside back cover. *IEEE Spectrum*, 57(8):c3, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:IBCb

- [Ano20-75] Anonymous. Inside back cover. *IEEE Spectrum*, 57

(9):c3, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:IFCa

- [Ano20-76] Anonymous. Inside front cover. *IEEE Spectrum*, 57(8):c2, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:IFCb

- [Ano20-77] Anonymous. Inside front cover. *IEEE Spectrum*, 57(9):c2, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:IOT

- [Ano20-78] Anonymous. Invented in the 1800s. Optimized for today. *IEEE Spectrum*, 57(11):5, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:ICF

- [Ano20-79] Anonymous. IoT calls for fast communication between sensors. *IEEE Spectrum*, 57(8):5, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:TBS

- [Ano20-80] Anonymous. It's a take — [back story]. *IEEE Spectrum*, 57(6):2, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:LTG

- [Ano20-81] Anonymous. Life of a tube guy — [back story]. *IEEE Spectrum*, 57(11):2, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:LLNb

- [Ano20-82] Anonymous. Light and lively — [news]. *IEEE Spectrum*, 57(12):16–17, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:LLNa

- [Ano20-83] Anonymous. Location, location — [news]. *IEEE Spectrum*, 57(2):12–13, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:LD

- [Ano20-84] Anonymous. Look deeper. *IEEE Spectrum*, 57(12):3, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:MBE

- [Ano20-85] Anonymous. Meanwhile, back on Earth — news. *IEEE Spectrum*, 57(7):12–13, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:NFS

- [Ano20-86] Anonymous. New faculty searches in electrical engineering 2020–21. *IEEE Spectrum*, 57(12):51–55, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:OMS

- [Ano20-87] Anonymous. Old McDonald had some chips — [news]. *IEEE Spectrum*, 57(9):14–15, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:PMM

- [Ano20-88] Anonymous. Pandemic memories and mortalities — [CrossTalk]. *IEEE Spectrum*, 57(10):16–17, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:PFN

- [Ano20-89] Anonymous. Photon flight — [news]. *IEEE Spectrum*, 57(11):14–15, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:PIA

- [Ano20-90] Anonymous. Professor intelligent and autonomous embedded systems. *IEEE Spectrum*, 57(9):51, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:PSR

- [Ano20-91] Anonymous. A proximity sensor for robots — [journal watch]. *IEEE Spectrum*, 57(5):10, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:PPB

- [Ano20-92] Anonymous. Pursuing the pandemic — [back story]. *IEEE*

Spectrum, 57(10):2, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:RME

- [Ano20-93] Anonymous. Recruit a member. Earn rewards! *IEEE Spectrum*, 57(9):31, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:SSC

- [Ano20-94] Anonymous. Sense and sensoribility — [crosstalk]. *IEEE Spectrum*, 57(2):20, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:SWS

- [Ano20-95] Anonymous. Skills wanted: SQL, Java, Python, and AWS top employers' wish lists — [careers]. *IEEE Spectrum*, 57(1):59, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:SSHa

- [Ano20-96] Anonymous. Smartphones, smart homes, smart healthcare? *IEEE Spectrum*, 57(9):5, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:SSHb

- [Ano20-97] Anonymous. Smartphones, smart homes, smart healthcare? *IEEE Spectrum*, 57(10):5, October 2020. CODEN IEESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:TC

- [Ano20-98] Anonymous. Table of contents. *IEEE Spectrum*, 57(12):1, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:TTP

- [Ano20-99] Anonymous. Triumphs turning points. *IEEE Spectrum*, 57(1):23, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:TCD

- [Ano20-100] Anonymous. Turning carbon dioxide into vodka: a Brooklyn startup is an XPrize finalist for its boozy carbon-capture technology — [podcasts]. *IEEE Spectrum*, 57(12):21, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:UUC

- [Ano20-101] Anonymous. UCDAVIS: University of California, Davis. *IEEE Spectrum*, 57(10):69, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:WAR

- [Ano20-102] Anonymous. When all reality is virtual — [back story]. *IEEE Spectrum*, 57(2):2, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:WBRa

- [Ano20-103] Anonymous. The world's best robots guide is here! [advertisement]. *IEEE Spectrum*, 57(11):37, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2020:WBRb

- [Ano20-104] Anonymous. The world's best robots guide is here! [advertisement]. *IEEE Spectrum*, 57(12):56, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:AGH

- [Ano21a] Anonymous. Adrian Gropper: How to become a privacy entrepreneur [careers]. *IEEE Spectrum*, 58(4):17, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Aa

- [Ano21b] Anonymous. Advertisement. *IEEE Spectrum*, 58(1):1, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ab

- [Ano21c] Anonymous. Advertisement. *IEEE Spectrum*, 58(2):46–47, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ac

- [Ano21d] Anonymous. Advertisement. *IEEE Spectrum*, 58(3):29, March 2021. CODEN IEESAM. ISSN

0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ae

- [Ano21e] Anonymous. Advertisement. *IEEE Spectrum*, 58(5):31, May 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Af

- [Ano21f] Anonymous. Advertisement. *IEEE Spectrum*, 58(5):47, May 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ag

- [Ano21g] Anonymous. Advertisement. *IEEE Spectrum*, 58(5):55, May 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ah

- [Ano21h] Anonymous. Advertisement. *IEEE Spectrum*, 58(6):3, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ai

- [Ano21i] Anonymous. Advertisement. *IEEE Spectrum*, 58(6):50, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Aj

- [Ano21j] Anonymous. Advertisement. *IEEE Spectrum*, 58(6):55, June 2021. CODEN IEESAM. ISSN

0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ak

[Ano21k] Anonymous. Advertisement. *IEEE Spectrum*, 58(6):67, June 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Al

[Ano21l] Anonymous. Advertisement. *IEEE Spectrum*, 58(8):47, August 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Am

[Ano21m] Anonymous. Advertisement. *IEEE Spectrum*, 58(9):3, September 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:An

[Ano21n] Anonymous. Advertisement. *IEEE Spectrum*, 58(9):5, September 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ao

[Ano21o] Anonymous. Advertisement. *IEEE Spectrum*, 58(9):57, September 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ap

[Ano21p] Anonymous. Advertisement. *IEEE Spectrum*, 58(9):69, September 2021. CODEN IIESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Aq

[Ano21q] Anonymous. Advertisement. *IEEE Spectrum*, 58(9):70–71, September 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ar

[Ano21r] Anonymous. [Advertisement]. *IEEE Spectrum*, 58(10):3, October 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:As

[Ano21s] Anonymous. [Advertisement]. *IEEE Spectrum*, 58(10):5, October 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:At

[Ano21t] Anonymous. [Advertisement]. *IEEE Spectrum*, 58(10):21, October 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Au

[Ano21u] Anonymous. [Advertisement]. *IEEE Spectrum*, 58(10):23, October 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Av

[Ano21v] Anonymous. [Advertisement]. *IEEE Spectrum*, 58(10):62–63, October 2021. CODEN

IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Aw

[Ano21w] Anonymous. Advertisement. *IEEE Spectrum*, 58(12):3, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ax

[Ano21x] Anonymous. Advertisement. *IEEE Spectrum*, 58(12):5, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ay

[Ano21y] Anonymous. Advertisement. *IEEE Spectrum*, 58(12):67, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Az

[Ano21z] Anonymous. Advertisement. *IEEE Spectrum*, 58(12):68–75, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:ABS

[Ano21-27] Anonymous. Advertisement: Because someone looks up to you. *IEEE Spectrum*, 58(12):57, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:ACa

[Ano21-28] Anonymous. Advertisement: COMSOL. *IEEE Spectrum*,

58(8):3, August 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:ACSa

[Ano21-29] Anonymous. Advertisement: COMSOL software. *IEEE Spectrum*, 58(7):5, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:ACSB

[Ano21-30] Anonymous. Advertisement: COMSOL software. *IEEE Spectrum*, 58(11):5, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:AIF

[Ano21-31] Anonymous. Advertisement: IEEE Foundation. *IEEE Spectrum*, 58(4):55, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ad

[Ano21-32] Anonymous. Advertisements. *IEEE Spectrum*, 58(4):54, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BCa

[Ano21-33] Anonymous. [Back cover]. *IEEE Spectrum*, 58(4):CV4, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BCb

[Ano21-34] Anonymous. [Back cover]. *IEEE Spectrum*, 58(6):CV4, June 2021.

CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BCc

[Ano21-35] Anonymous. [Back cover]. *IEEE Spectrum*, 58(8):CV4, August 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BCd

[Ano21-36] Anonymous. [Back cover]. *IEEE Spectrum*, 58(9):CV4, September 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BCe

[Ano21-37] Anonymous. [Back cover]. *IEEE Spectrum*, 58(10):CV4, October 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BCf

[Ano21-38] Anonymous. [Back cover]. *IEEE Spectrum*, 58(11):CV4, November 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BCg

[Ano21-39] Anonymous. [Back cover]. *IEEE Spectrum*, 58(12):CV4, December 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BICa

[Ano21-40] Anonymous. [Back inside cover]. *IEEE Spectrum*, 58(4):CV3,

April 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BICb

[Ano21-41] Anonymous. [Back inside cover]. *IEEE Spectrum*, 58(6):CV3, June 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BICc

[Ano21-42] Anonymous. [Back inside cover]. *IEEE Spectrum*, 58(8):CV3, August 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BICd

[Ano21-43] Anonymous. [Back inside cover]. *IEEE Spectrum*, 58(9):CV3, September 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BICe

[Ano21-44] Anonymous. [Back inside cover]. *IEEE Spectrum*, 58(10):CV3, October 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BICf

[Ano21-45] Anonymous. [Back inside cover]. *IEEE Spectrum*, 58(11):CV3, November 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BICg

[Ano21-46] Anonymous. [Back inside cover]. *IEEE Spectrum*, 58(12):CV3, December 2021. CODEN IEEESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BSa

- [Ano21-47] Anonymous. Back story. *IEEE Spectrum*, 58(1):3, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BSb

- [Ano21-48] Anonymous. Back story. *IEEE Spectrum*, 58(2):2, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BS

- [Ano21-49] Anonymous. Back story. *IEEE Spectrum*, 58(6):2, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BSW

- [Ano21-50] Anonymous. Back story: Wizards of light. *IEEE Spectrum*, 58(4):2, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BPa

- [Ano21-51] Anonymous. The big picture. *IEEE Spectrum*, 58(2):12–13, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BPb

- [Ano21-52] Anonymous. The big picture. *IEEE Spectrum*, 58(4):12–13, April 2021. CODEN IEESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BPBa

- [Ano21-53] Anonymous. The big picture: a big bet on crypto. *IEEE Spectrum*, 58(8):12–13, August 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BPB

- [Ano21-54] Anonymous. The big picture: In the dark. *IEEE Spectrum*, 58(11):14–15, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BPB

- [Ano21-55] Anonymous. The big picture: Sunny days ahead. *IEEE Spectrum*, 58(9):16–17, September 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:BPT

- [Ano21-56] Anonymous. The big picture: Transforming power research. *IEEE Spectrum*, 58(12):12–13, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:IAAa

- [Ano21-57] Anonymous. *IEEE Access* [advertisement]. *IEEE Spectrum*, 58(3):43, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:IAAb

- [Ano21-58] Anonymous. *IEEE Access* [advertisement]. *IEEE Spectrum*, 58(4):43, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:PIA

- [Ano21-59] Anonymous. *Proceedings of the IEEE* [advertisement]. *IEEE Spectrum*, 58(3):52, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cc

- [Ano21-60] Anonymous. Careers. *IEEE Spectrum*, 58(1):15, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:CAa

- [Ano21-61] Anonymous. [Classified ads]. *IEEE Spectrum*, 58(11):50–55, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:CDG

- [Ano21-62] Anonymous. Combating doom and gloom [back story]. *IEEE Spectrum*, 58(7):2, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:CMA

- [Ano21-63] Anonymous. COMSOL multi-physics [advertisement]. *IEEE Spectrum*, 58(4):5, April 2021.

CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ca

- [Ano21-64] Anonymous. Contents. *IEEE Spectrum*, 58(1):1–2, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cd

- [Ano21-65] Anonymous. Contents. *IEEE Spectrum*, 58(2):1, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cf

- [Ano21-66] Anonymous. Contents. *IEEE Spectrum*, 58(3):1, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ch

- [Ano21-67] Anonymous. Contents. *IEEE Spectrum*, 58(4):1, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ck

- [Ano21-68] Anonymous. Contents. *IEEE Spectrum*, 58(5):1, May 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Co

- [Ano21-69] Anonymous. Contents. *IEEE Spectrum*, 58(6):1, June 2021.

CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cq

[Ano21-70] Anonymous. Contents. *IEEE Spectrum*, 58(7):1, July 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cs

[Ano21-71] Anonymous. Contents. *IEEE Spectrum*, 58(8):1, August 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cu

[Ano21-72] Anonymous. Contents. *IEEE Spectrum*, 58(9):1, September 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cw

[Ano21-73] Anonymous. Contents. *IEEE Spectrum*, 58(10):1, October 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cy

[Ano21-74] Anonymous. Contents. *IEEE Spectrum*, 58(11):1, November 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cba

[Ano21-75] Anonymous. Contents. *IEEE Spectrum*, 58(12):1, December

2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cb

[Ano21-76] Anonymous. Contributors. *IEEE Spectrum*, 58(1):4, January 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ce

[Ano21-77] Anonymous. Contributors. *IEEE Spectrum*, 58(2):11, February 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cg

[Ano21-78] Anonymous. Contributors. *IEEE Spectrum*, 58(3):11, March 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ci

[Ano21-79] Anonymous. Contributors. *IEEE Spectrum*, 58(4):4, April 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cj

[Ano21-80] Anonymous. Contributors. *IEEE Spectrum*, 58(5):3, May 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cp

[Ano21-81] Anonymous. Contributors. *IEEE Spectrum*, 58(6):4, June 2021.

CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cr

[Ano21-82] Anonymous. Contributors. *IEEE Spectrum*, 58(7):4, July 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Ct

[Ano21-83] Anonymous. Contributors. *IEEE Spectrum*, 58(8):4, August 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cv

[Ano21-84] Anonymous. Contributors. *IEEE Spectrum*, 58(9):4, September 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cx

[Ano21-85] Anonymous. Contributors. *IEEE Spectrum*, 58(10):4, October 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cz

[Ano21-86] Anonymous. Contributors. *IEEE Spectrum*, 58(11):4, November 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cbb

[Ano21-87] Anonymous. Contributors. *IEEE Spectrum*, 58(12):4, December

2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cj

[Ano21-88] Anonymous. Cover 2. *IEEE Spectrum*, 58(5):CV2, May 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cm

[Ano21-89] Anonymous. Cover 3. *IEEE Spectrum*, 58(5):CV3, May 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Cn

[Ano21-90] Anonymous. Cover 4. *IEEE Spectrum*, 58(5):CV4, May 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:DBD

[Ano21-91] Anonymous. Design better devices faster. *IEEE Spectrum*, 58(1):1, January 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FCa

[Ano21-92] Anonymous. Front cover. *IEEE Spectrum*, 58(1):1, January 2021. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FCb

[Ano21-93] Anonymous. Front cover. *IEEE Spectrum*, 58(2):1, February

2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FCc

[Ano21-94] Anonymous. [Front cover]. *IEEE Spectrum*, 58(3):1, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FCd

[Ano21-95] Anonymous. [Front cover]. *IEEE Spectrum*, 58(4):1, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FCe

[Ano21-96] Anonymous. Front cover. *IEEE Spectrum*, 58(5):1, May 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FCf

[Ano21-97] Anonymous. [Front cover]. *IEEE Spectrum*, 58(6):1, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FCg

[Ano21-98] Anonymous. [Front cover]. *IEEE Spectrum*, 58(7):1, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FC h

[Ano21-99] Anonymous. [Front cover]. *IEEE Spectrum*, 58(8):1, August 2021.

CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FCi

[Ano21-100] Anonymous. [Front cover]. *IEEE Spectrum*, 58(9):1, September 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FCj

[Ano21-101] Anonymous. [Front cover]. *IEEE Spectrum*, 58(10):1, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FCk

[Ano21-102] Anonymous. [Front cover]. *IEEE Spectrum*, 58(11):1, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FCl

[Ano21-103] Anonymous. Front cover. *IEEE Spectrum*, 58(12):1, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FCi a

[Ano21-104] Anonymous. [Front inside cover]. *IEEE Spectrum*, 58(4):CV2, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FCi c

[Ano21-105] Anonymous. [Front inside cover]. *IEEE Spectrum*, 58(7):CV2, July

2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FICd

[Ano21-106] Anonymous. [Front inside cover]. *IEEE Spectrum*, 58(8):CV2, August 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FICe

[Ano21-107] Anonymous. [Front inside cover]. *IEEE Spectrum*, 58(9):CV2, September 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FICf

[Ano21-108] Anonymous. [Front inside cover]. *IEEE Spectrum*, 58(10):CV2, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FICg

[Ano21-109] Anonymous. [Front inside cover]. *IEEE Spectrum*, 58(11):CV2, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FICh

[Ano21-110] Anonymous. [Front inside cover]. *IEEE Spectrum*, 58(12):CV2, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:FICb

[Ano21-111] Anonymous. [Front inside cover - advertisement]. *IEEE Spectrum*,

58(6):CV2, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:G

[Ano21-112] Anonymous. Gadgeteering. *IEEE Spectrum*, 58(10):2, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:GAR

[Ano21-113] Anonymous. The great AI reckoning: Deep learning may have reached its limits. What comes next? [table of contents]. *IEEE Spectrum*, 58(10):24–25, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:HTE

[Ano21-114] Anonymous. High-tech eyewear [the big picture]. *IEEE Spectrum*, 58(7):14–15, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:IGC

[Ano21-115] Anonymous. IEEE Global Communications Conference, 7–11 December 2021. *IEEE Spectrum*, 58(11):19, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:IMO

[Ano21-116] Anonymous. IEEE ME: One program. seven reasons. *IEEE Spectrum*, 58(2):1, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:IMDa

- [Ano21-117] Anonymous. IEEE member discounts. *IEEE Spectrum*, 58(1):1, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:IMDb

- [Ano21-118] Anonymous. IEEE member discounts. *IEEE Spectrum*, 58(5):39, May 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:IMDd

- [Ano21-119] Anonymous. IEEE member discounts. *IEEE Spectrum*, 58(11):3, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:IMDc

- [Ano21-120] Anonymous. IEEE member discounts [advertisement]. *IEEE Spectrum*, 58(7):3, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:IMG

- [Ano21-121] Anonymous. IEEE member group disability income insurance. *IEEE Spectrum*, 58(7):CV3, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:ITO

- [Ano21-122] Anonymous. Innovate transform our future. *IEEE Spectrum*, 58(5):19, May 2021. CO-

DEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:KPL

- [Ano21-123] Anonymous. Keep pushing the limits! *IEEE Spectrum*, 58(1):1, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:LBO

- [Ano21-124] Anonymous. Looking beyond our solar system with ray tracing simulation. *IEEE Spectrum*, 58(3):3, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:MLa

- [Ano21-125] Anonymous. Machine learning. *IEEE Spectrum*, 58(1):1, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:MLb

- [Ano21-126] Anonymous. Machine learning. *IEEE Spectrum*, 58(2):1, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:MR

- [Ano21-127] Anonymous. A magazine reborn. *IEEE Spectrum*, 58(5):2, May 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:MA

- [Ano21-128] Anonymous. MATLAB [advertisement]. *IEEE Spectrum*,

58(7):CV4, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Na

[Ano21-129] Anonymous. News. *IEEE Spectrum*, 58(1):6–11, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Nb

[Ano21-130] Anonymous. News. *IEEE Spectrum*, 58(2):4–10, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Nc

[Ano21-131] Anonymous. News. *IEEE Spectrum*, 58(3):4–10, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:Nd

[Ano21-132] Anonymous. News. *IEEE Spectrum*, 58(4):6–11, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:PPS

[Ano21-133] Anonymous. Portrait of the portrait sleuths. *IEEE Spectrum*, 58(9):2, September 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:ROS

[Ano21-134] Anonymous. Ray optics simulation for inertial navigation.

IEEE Spectrum, 58(2):1, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:R

[Ano21-135] Anonymous. Recruitment. *IEEE Spectrum*, 58(1):55, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:RPS

[Ano21-136] Anonymous. Red Planet selfie [the big picture]. *IEEE Spectrum*, 58(6):14–15, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:SCCb

[Ano21-137] Anonymous. Sensor control and characterization [advertisement]. *IEEE Spectrum*, 58(3):1, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:SCCa

[Ano21-138] Anonymous. Sensor control and characterization: All in one. *IEEE Spectrum*, 58(2):1, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:SN

[Ano21-139] Anonymous. The shipping news. *IEEE Spectrum*, 58(3):2, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:SCSa

- [Ano21-140] Anonymous. Simulation case study. *IEEE Spectrum*, 58(5):5, May 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:SCSb

- [Ano21-141] Anonymous. Simulation case study [advertisement]. *IEEE Spectrum*, 58(6):5, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:SDC

- [Ano21-142] Anonymous. Socially distanced celebration. *IEEE Spectrum*, 58(3):12–13, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:TTS

- [Ano21-143] Anonymous. Top tech 2021: a special report. *IEEE Spectrum*, 58(1):21, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:WBRa

- [Ano21-144] Anonymous. The world's best robots guide is here! [advertisement]. *IEEE Spectrum*, 58(4):3, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2021:WBRb

- [Ano21-145] Anonymous. The world's best robots guide is here! [advertisement]. *IEEE Spectrum*, 58

(11):21, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Aa

- [Ano22a] Anonymous. [Advertisement]. *IEEE Spectrum*, 59(1):3, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ab

- [Ano22b] Anonymous. Advertisement. *IEEE Spectrum*, 59(1):5, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ac

- [Ano22c] Anonymous. Advertisement. *IEEE Spectrum*, 59(1):59, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ad

- [Ano22d] Anonymous. Advertisement. *IEEE Spectrum*, 59(1):60–63, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ae

- [Ano22e] Anonymous. Advertisement. *IEEE Spectrum*, 59(2):5, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Af

- [Ano22f] Anonymous. Advertisement. *IEEE Spectrum*, 59(3):5, March

2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ag

[Ano22g] Anonymous. Advertisement. *IEEE Spectrum*, 59(4):3, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ah

[Ano22h] Anonymous. Advertisement. *IEEE Spectrum*, 59(4):51, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ai

[Ano22i] Anonymous. Advertisement. *IEEE Spectrum*, 59(5):3, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Aj

[Ano22j] Anonymous. Advertisement. *IEEE Spectrum*, 59(5):5, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ak

[Ano22k] Anonymous. Advertisement. *IEEE Spectrum*, 59(5):6, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Al

[Ano22l] Anonymous. Advertisement. *IEEE Spectrum*, 59(5):23, May

2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Am

[Ano22m] Anonymous. Advertisement. *IEEE Spectrum*, 59(5):50, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:An

[Ano22n] Anonymous. Advertisement. *IEEE Spectrum*, 59(5):51, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ao

[Ano22o] Anonymous. Advertisement. *IEEE Spectrum*, 59(6):3, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ap

[Ano22p] Anonymous. Advertisement. *IEEE Spectrum*, 59(6):53, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Aq

[Ano22q] Anonymous. Advertisement. *IEEE Spectrum*, 59(6):63, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ar

[Ano22r] Anonymous. Advertisement. *IEEE Spectrum*, 59(7):3, July

2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano22s] **Anonymous:2022:As** Anonymous. Advertisement. *IEEE Spectrum*, 59(7):19, July 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano22t] **Anonymous:2022:At** Anonymous. Advertisement. *IEEE Spectrum*, 59(7):47, July 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano22u] **Anonymous:2022:Au** Anonymous. Advertisement. *IEEE Spectrum*, 59(8):3, August 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano22v] **Anonymous:2022:Av** Anonymous. Advertisement. *IEEE Spectrum*, 59(8):47, August 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano22w] **Anonymous:2022:Aw** Anonymous. Advertisement. *IEEE Spectrum*, 59(9):3, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano22x] **Anonymous:2022:Ax** Anonymous. Advertisement. *IEEE Spectrum*, 59(9):5, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano22y] **Anonymous:2022:Ay** Anonymous. Advertisement. *IEEE Spectrum*, 59(9):65, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano22z] **Anonymous:2022:Az** Anonymous. Advertisement. *IEEE Spectrum*, 59(9):66, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano22-27] **Anonymous:2022:Aba** Anonymous. Advertisement. *IEEE Spectrum*, 59(9):67, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano22-28] **Anonymous:2022:Abb** Anonymous. Advertisement. *IEEE Spectrum*, 59(10):3, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano22-29] **Anonymous:2022:Abd** Anonymous. Advertisement. *IEEE Spectrum*, 59(10):5, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano22-30] **Anonymous:2022:Abe** Anonymous. Advertisement. *IEEE Spectrum*, 59(10):31, October 2022. CODEN IEESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Abf

[Ano22-31] Anonymous. Advertisement. *IEEE Spectrum*, 59(10):39, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Abg

[Ano22-32] Anonymous. Advertisement. *IEEE Spectrum*, 59(10):53, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Abh

[Ano22-33] Anonymous. Advertisement. *IEEE Spectrum*, 59(10):54, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Abi

[Ano22-34] Anonymous. Advertisement. *IEEE Spectrum*, 59(10):55, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Abj

[Ano22-35] Anonymous. Advertisement. *IEEE Spectrum*, 59(11):3, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Abk

[Ano22-36] Anonymous. Advertisement. *IEEE Spectrum*, 59(11):13, November 2022. CODEN

IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ab1

[Ano22-37] Anonymous. Advertisement. *IEEE Spectrum*, 59(11):46, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Abm

[Ano22-38] Anonymous. Advertisement. *IEEE Spectrum*, 59(11):47, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Abn

[Ano22-39] Anonymous. Advertisement. *IEEE Spectrum*, 59(12):3, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Abo

[Ano22-40] Anonymous. Advertisement. *IEEE Spectrum*, 59(12):5, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Abp

[Ano22-41] Anonymous. Advertisement. *IEEE Spectrum*, 59(12):71, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Abq

[Ano22-42] Anonymous. Advertisement. *IEEE Spectrum*, 59(12):72, December 2022. CODEN IEESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Abr

- [Ano22-43] Anonymous. Advertisement. *IEEE Spectrum*, 59(12):73, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Abs

- [Ano22-44] Anonymous. Advertisement. *IEEE Spectrum*, 59(12):74, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Abt

- [Ano22-45] Anonymous. Advertisement. *IEEE Spectrum*, 59(12):75, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:ABCa

- [Ano22-46] Anonymous. Advertisement [back cover]. *IEEE Spectrum*, 59(2):CV4, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:ABCb

- [Ano22-47] Anonymous. Advertisement [back cover]. *IEEE Spectrum*, 59(3):CV4, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:AFIb

- [Ano22-48] Anonymous. Advertisement [front inside cover]. *IEEE Spectrum*, 59(3):CV2, March 2022.

CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:AFIa

- [Ano22-49] Anonymous. Advertisement [front inside cover]. *IEEE Spectrum*, 59(2):CV2, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:AMB

- [Ano22-50] Anonymous. Advertisement, Matlab [back cover]. *IEEE Spectrum*, 59(4):CV4, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:AZI

- [Ano22-51] Anonymous. Advertisement, Zurich Instruments [front inside cover]. *IEEE Spectrum*, 59(4):CV2, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:BC

- [Ano22-52] Anonymous. [Back cover]. *IEEE Spectrum*, 59(1):CV4, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:BICa

- [Ano22-53] Anonymous. [Back inside cover]. *IEEE Spectrum*, 59(1):CV3, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:BiCb

- [Ano22-54] Anonymous. [Back inside cover]. *IEEE Spectrum*, 59(4):CV3, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:BSL

- [Ano22-55] Anonymous. Because someone looks up to you [advertisement]. *IEEE Spectrum*, 59(3):57, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:BPB

- [Ano22-56] Anonymous. The big picture: Electric buses take charge. *IEEE Spectrum*, 59(3):14–15, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:BPS

- [Ano22-57] Anonymous. The big picture: Sun roasted. *IEEE Spectrum*, 59(2):14–15, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:BPW

- [Ano22-58] Anonymous. The big picture: What's next? *IEEE Spectrum*, 59(4):12–13, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:IAA

- [Ano22-59] Anonymous. *IEEE Access* [advertisement]. *IEEE Spectrum*, 59(3):67, March 2022. CO-

DEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ca

- [Ano22-60] Anonymous. Contents. *IEEE Spectrum*, 59(1):1–2, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cc

- [Ano22-61] Anonymous. Contents. *IEEE Spectrum*, 59(2):1, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ce

- [Ano22-62] Anonymous. Contents. *IEEE Spectrum*, 59(3):1, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cg

- [Ano22-63] Anonymous. Contents. *IEEE Spectrum*, 59(4):1, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cj

- [Ano22-64] Anonymous. Contents. *IEEE Spectrum*, 59(5):1, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Co

- [Ano22-65] Anonymous. Contents. *IEEE Spectrum*, 59(6):1, June 2022.

CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ct

[Ano22-66] Anonymous. Contents. *IEEE Spectrum*, 59(7):1, July 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cy

[Ano22-67] Anonymous. Contents. *IEEE Spectrum*, 59(8):1, August 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbd

[Ano22-68] Anonymous. Contents. *IEEE Spectrum*, 59(9):1, September 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbi

[Ano22-69] Anonymous. Contents. *IEEE Spectrum*, 59(10):1, October 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbn

[Ano22-70] Anonymous. Contents. *IEEE Spectrum*, 59(11):1, November 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbs

[Ano22-71] Anonymous. Contents. *IEEE Spectrum*, 59(12):1, December

2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cb

[Ano22-72] Anonymous. Contributors. *IEEE Spectrum*, 59(1):6, January 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cd

[Ano22-73] Anonymous. Contributors. *IEEE Spectrum*, 59(2):2, February 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cf

[Ano22-74] Anonymous. Contributors. *IEEE Spectrum*, 59(3):3, March 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ch

[Ano22-75] Anonymous. Contributors. *IEEE Spectrum*, 59(4):2, April 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ck

[Ano22-76] Anonymous. Contributors. *IEEE Spectrum*, 59(5):4, May 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cp

[Ano22-77] Anonymous. Contributors. *IEEE Spectrum*, 59(6):4, June 2022.

CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cu

[Ano22-78] Anonymous. Contributors. *IEEE Spectrum*, 59(7):4, July 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cz

[Ano22-79] Anonymous. Contributors. *IEEE Spectrum*, 59(8):4, August 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbe

[Ano22-80] Anonymous. Contributors. *IEEE Spectrum*, 59(9):4, September 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbj

[Ano22-81] Anonymous. Contributors. *IEEE Spectrum*, 59(10):4, October 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbo

[Ano22-82] Anonymous. Contributors. *IEEE Spectrum*, 59(11):4, November 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbt

[Ano22-83] Anonymous. Contributors. *IEEE Spectrum*, 59(12):4, December

2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ci

[Ano22-84] Anonymous. Cover 2. *IEEE Spectrum*, 59(5):CV2, May 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cn

[Ano22-85] Anonymous. Cover 2. *IEEE Spectrum*, 59(6):CV2, June 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cs

[Ano22-86] Anonymous. Cover 2. *IEEE Spectrum*, 59(7):CV2, July 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cx

[Ano22-87] Anonymous. Cover 2. *IEEE Spectrum*, 59(8):CV2, August 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbc

[Ano22-88] Anonymous. Cover 2. *IEEE Spectrum*, 59(9):CV2, September 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbh

[Ano22-89] Anonymous. Cover 2. *IEEE Spectrum*, 59(10):CV2, October 2022. CODEN IIESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbm

[Ano22-90] Anonymous. Cover 2. *IEEE Spectrum*, 59(11):CV2, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbr

[Ano22-91] Anonymous. Cover 2. *IEEE Spectrum*, 59(12):CV2, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cl

[Ano22-92] Anonymous. Cover 3. *IEEE Spectrum*, 59(5):CV3, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cq

[Ano22-93] Anonymous. Cover 3. *IEEE Spectrum*, 59(6):CV3, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cv

[Ano22-94] Anonymous. Cover 3. *IEEE Spectrum*, 59(7):CV3, July 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cba

[Ano22-95] Anonymous. Cover 3. *IEEE Spectrum*, 59(8):CV3, August 2022. CODEN IEESAM. ISSN

0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbf

[Ano22-96] Anonymous. Cover 3. *IEEE Spectrum*, 59(9):CV3, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbk

[Ano22-97] Anonymous. Cover 3. *IEEE Spectrum*, 59(10):CV3, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbp

[Ano22-98] Anonymous. Cover 3. *IEEE Spectrum*, 59(11):CV3, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbu

[Ano22-99] Anonymous. Cover 3. *IEEE Spectrum*, 59(12):CV3, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cm

[Ano22-100] Anonymous. Cover 4. *IEEE Spectrum*, 59(5):CV4, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cr

[Ano22-101] Anonymous. Cover 4. *IEEE Spectrum*, 59(6):CV4, June 2022.

CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cw

[Ano22-102] Anonymous. Cover 4. *IEEE Spectrum*, 59(7):CV4, July 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbb

[Ano22-103] Anonymous. Cover 4. *IEEE Spectrum*, 59(8):CV4, August 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbg

[Ano22-104] Anonymous. Cover 4. *IEEE Spectrum*, 59(9):CV4, September 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbl

[Ano22-105] Anonymous. Cover 4. *IEEE Spectrum*, 59(10):CV4, October 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbq

[Ano22-106] Anonymous. Cover 4. *IEEE Spectrum*, 59(11):CV4, November 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Cbv

[Ano22-107] Anonymous. Cover 4. *IEEE Spectrum*, 59(12):CV4, December 2022. CODEN IEEESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:FV

[Ano22-108] Anonymous. A fab and a vision. *IEEE Spectrum*, 59(6):2, June 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:FCa

[Ano22-109] Anonymous. [Front cover]. *IEEE Spectrum*, 59(1):1, January 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:FCb

[Ano22-110] Anonymous. [Front cover]. *IEEE Spectrum*, 59(2):1, February 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:FCc

[Ano22-111] Anonymous. [Front cover]. *IEEE Spectrum*, 59(3):1, March 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:FCd

[Ano22-112] Anonymous. Front cover. *IEEE Spectrum*, 59(4):1, April 2022. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:FCe

[Ano22-113] Anonymous. Front cover. *IEEE Spectrum*, 59(5):1, May 2022.

CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:FCf

[Ano22-114] Anonymous. Front cover. *IEEE Spectrum*, 59(6):1, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:FCg

[Ano22-115] Anonymous. Front cover. *IEEE Spectrum*, 59(7):1, July 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:FC h

[Ano22-116] Anonymous. Front cover. *IEEE Spectrum*, 59(8):1, August 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:FCi

[Ano22-117] Anonymous. Front cover. *IEEE Spectrum*, 59(9):1, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:FCj

[Ano22-118] Anonymous. Front cover. *IEEE Spectrum*, 59(10):1, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:FCk

[Ano22-119] Anonymous. Front cover. *IEEE Spectrum*, 59(11):1, November

2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:FCl

[Ano22-120] Anonymous. Front cover. *IEEE Spectrum*, 59(12):1, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:FC

[Ano22-121] Anonymous. [Front inside cover]. *IEEE Spectrum*, 59(1):CV2, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:IMB

[Ano22-122] Anonymous. IEEE & me [back inside cover]. *IEEE Spectrum*, 59(2):CV3, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:IMD

[Ano22-123] Anonymous. IEEE member discounts. *IEEE Spectrum*, 59(1):15, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Ma

[Ano22-124] Anonymous. Masthead. *IEEE Spectrum*, 59(8):4, August 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Mb

[Ano22-125] Anonymous. Masthead. *IEEE Spectrum*, 59(9):4, September

2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Mc

[Ano22-126] Anonymous. Masthead. *IEEE Spectrum*, 59(10):4, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Md

[Ano22-127] Anonymous. Masthead. *IEEE Spectrum*, 59(11):4, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Me

[Ano22-128] Anonymous. Masthead. *IEEE Spectrum*, 59(12):4, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:Tt

[Ano22-129] Anonymous. Top tech 2022. *IEEE Spectrum*, 59(1):25, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:TPP

[Ano22-130] Anonymous. The transistor at 75: The past, present, and future of the modern world's most important invention. *IEEE Spectrum*, 59(12):22–23, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:WBRa

[Ano22-131] Anonymous. The world's best robots guide is here! [advertisement]. *IEEE Spectrum*, 59(2):3, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2022:WBRb

[Ano22-132] Anonymous. The world's best robots guide is here! [back inside cover]. *IEEE Spectrum*, 59(3):CV3, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:QJS

[Ano23a] Anonymous. 5 questions for Janelle Shane: Why AI is so often weird, argumentative, and wrong. *IEEE Spectrum*, 60(9):23, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Aa

[Ano23b] Anonymous. Advertisement. *IEEE Spectrum*, 60(1):3, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Ab

[Ano23c] Anonymous. Advertisement. *IEEE Spectrum*, 60(1):5, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Ac

[Ano23d] Anonymous. Advertisement. *IEEE Spectrum*, 60(1):7, Jan-

- uary 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano23e] **Anonymous:2023:Ad** Anonymous. Advertisement. *IEEE Spectrum*, 60(1):58, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano23f] **Anonymous:2023:Ae** Anonymous. Advertisement. *IEEE Spectrum*, 60(1):59, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano23g] **Anonymous:2023:Af** Anonymous. Advertisement. *IEEE Spectrum*, 60(1):60, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano23h] **Anonymous:2023:Ag** Anonymous. Advertisement. *IEEE Spectrum*, 60(1):61, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano23i] **Anonymous:2023:Ah** Anonymous. Advertisement. *IEEE Spectrum*, 60(1):62, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano23j] **Anonymous:2023:Ai** Anonymous. Advertisement. *IEEE Spectrum*, 60(1):63, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano23k] **Anonymous:2023:Aj** Anonymous. Advertisement. *IEEE Spectrum*, 60(3):3, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano23l] **Anonymous:2023:Ak** Anonymous. Advertisement. *IEEE Spectrum*, 60(3):13, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano23m] **Anonymous:2023:Al** Anonymous. Advertisement. *IEEE Spectrum*, 60(3):65, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano23n] **Anonymous:2023:Am** Anonymous. Advertisement. *IEEE Spectrum*, 60(3):66, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano23o] **Anonymous:2023:An** Anonymous. Advertisement. *IEEE Spectrum*, 60(3):67, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ano23p] **Anonymous:2023:Ao** Anonymous. Advertisement. *IEEE Spectrum*, 60(4):3, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

0018-9235 (print), 1939-9340
(electronic).

Anonymous:2023:Ap

[Ano23q] Anonymous. Advertisement. *IEEE Spectrum*, 60(4):31, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Aq

[Ano23r] Anonymous. Advertisement. *IEEE Spectrum*, 60(4):54, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Ar

[Ano23s] Anonymous. Advertisement. *IEEE Spectrum*, 60(4):55, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:As

[Ano23t] Anonymous. Advertisement. *IEEE Spectrum*, 60(5):3, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:At

[Ano23u] Anonymous. Advertisement. *IEEE Spectrum*, 60(5):5, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Au

[Ano23v] Anonymous. Advertisement. *IEEE Spectrum*, 60(5):6, May 2023. CODEN IEESAM. ISSN

0018-9235 (print), 1939-9340
(electronic).

Anonymous:2023:Av

[Ano23w] Anonymous. Advertisement. *IEEE Spectrum*, 60(5):45, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Aw

[Ano23x] Anonymous. Advertisement. *IEEE Spectrum*, 60(5):53, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Ax

[Ano23y] Anonymous. Advertisement. *IEEE Spectrum*, 60(5):54, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Ay

[Ano23z] Anonymous. Advertisement. *IEEE Spectrum*, 60(5):55, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Az

[Ano23-27] Anonymous. Advertisement. *IEEE Spectrum*, 60(6):3, June 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Aba

[Ano23-28] Anonymous. Advertisement. *IEEE Spectrum*, 60(6):13, June 2023. CODEN IEESAM. ISSN

0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abb

[Ano23-29] Anonymous. Advertisement. *IEEE Spectrum*, 60(6):67, June 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abc

[Ano23-30] Anonymous. Advertisement. *IEEE Spectrum*, 60(7):3, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abd

[Ano23-31] Anonymous. Advertisement. *IEEE Spectrum*, 60(7):5, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abe

[Ano23-32] Anonymous. Advertisement. *IEEE Spectrum*, 60(7):50, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abf

[Ano23-33] Anonymous. Advertisement. *IEEE Spectrum*, 60(7):51, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abg

[Ano23-34] Anonymous. Advertisement. *IEEE Spectrum*, 60(8):CV2, August 2023. CODEN IEESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abh

[Ano23-35] Anonymous. Advertisement. *IEEE Spectrum*, 60(8):3, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abi

[Ano23-36] Anonymous. Advertisement. *IEEE Spectrum*, 60(8):23, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abj

[Ano23-37] Anonymous. Advertisement. *IEEE Spectrum*, 60(8):37, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abk

[Ano23-38] Anonymous. Advertisement. *IEEE Spectrum*, 60(8):50, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abi

[Ano23-39] Anonymous. Advertisement. *IEEE Spectrum*, 60(8):51, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abm

[Ano23-40] Anonymous. Advertisement. *IEEE Spectrum*, 60(8):CV3, August 2023. CODEN IEESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abn

[Ano23-41] Anonymous. Advertisement. *IEEE Spectrum*, 60(8):CV4, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abo

[Ano23-42] Anonymous. Advertisement. *IEEE Spectrum*, 60(9):3, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abp

[Ano23-43] Anonymous. Advertisement. *IEEE Spectrum*, 60(9):5, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abq

[Ano23-44] Anonymous. Advertisement. *IEEE Spectrum*, 60(9):6, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abx

[Ano23-45] Anonymous. Advertisement. *IEEE Spectrum*, 60(9):15, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abs

[Ano23-46] Anonymous. Advertisement. *IEEE Spectrum*, 60(9):67, September 2023. CODEN IEESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abt

[Ano23-47] Anonymous. Advertisement. *IEEE Spectrum*, 60(10):3, October 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abu

[Ano23-48] Anonymous. Advertisement. *IEEE Spectrum*, 60(10):50, October 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abv

[Ano23-49] Anonymous. Advertisement. *IEEE Spectrum*, 60(10):51, October 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abw

[Ano23-50] Anonymous. Advertisement. *IEEE Spectrum*, 60(11):3, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abx

[Ano23-51] Anonymous. Advertisement. *IEEE Spectrum*, 60(11):5, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abx

[Ano23-52] Anonymous. Advertisement. *IEEE Spectrum*, 60(11):51, November 2023. CODEN

IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Abz

- [Ano23-53] Anonymous. Advertisement. *IEEE Spectrum*, 60(12):3, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Aca

- [Ano23-54] Anonymous. Advertisement. *IEEE Spectrum*, 60(12):13, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Acb

- [Ano23-55] Anonymous. Advertisement. *IEEE Spectrum*, 60(12):46, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Acc

- [Ano23-56] Anonymous. Advertisement. *IEEE Spectrum*, 60(12):65, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Acd

- [Ano23-57] Anonymous. Advertisement. *IEEE Spectrum*, 60(12):66, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Ace

- [Ano23-58] Anonymous. Advertisement. *IEEE Spectrum*, 60(12):67, December 2023. CODEN IEESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:CAa

- [Ano23-59] Anonymous. COMSOL — advertisement. *IEEE Spectrum*, 60(1):1s–36s, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cb

- [Ano23-60] Anonymous. Contents. *IEEE Spectrum*, 60(1):1–2, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cg

- [Ano23-61] Anonymous. Contents. *IEEE Spectrum*, 60(3):1–2, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cl

- [Ano23-62] Anonymous. Contents. *IEEE Spectrum*, 60(4):1, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cq

- [Ano23-63] Anonymous. Contents. *IEEE Spectrum*, 60(5):1, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cv

- [Ano23-64] Anonymous. Contents. *IEEE Spectrum*, 60(6):1, June 2023.

CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cba

[Ano23-65] Anonymous. Contents. *IEEE Spectrum*, 60(7):1, July 2023. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbe

[Ano23-66] Anonymous. Contents. *IEEE Spectrum*, 60(8):1, August 2023. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbh

[Ano23-67] Anonymous. Contents. *IEEE Spectrum*, 60(9):1, September 2023. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbm

[Ano23-68] Anonymous. Contents. *IEEE Spectrum*, 60(10):1, October 2023. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbr

[Ano23-69] Anonymous. Contents. *IEEE Spectrum*, 60(11):1, November 2023. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbw

[Ano23-70] Anonymous. Contents. *IEEE Spectrum*, 60(12):1, December

2023. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cc

[Ano23-71] Anonymous. Contributors. *IEEE Spectrum*, 60(1):6, January 2023. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Ch

[Ano23-72] Anonymous. Contributors. *IEEE Spectrum*, 60(3):4, March 2023. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cm

[Ano23-73] Anonymous. Contributors. *IEEE Spectrum*, 60(4):4, April 2023. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cr

[Ano23-74] Anonymous. Contributors. *IEEE Spectrum*, 60(5):4, May 2023. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cw

[Ano23-75] Anonymous. Contributors. *IEEE Spectrum*, 60(6):4, June 2023. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbb

[Ano23-76] Anonymous. Contributors. *IEEE Spectrum*, 60(7):4, July 2023.

CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbf

[Ano23-77] Anonymous. Contributors. *IEEE Spectrum*, 60(8):4, August 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbi

[Ano23-78] Anonymous. Contributors. *IEEE Spectrum*, 60(9):4, September 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbn

[Ano23-79] Anonymous. Contributors. *IEEE Spectrum*, 60(10):4, October 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbs

[Ano23-80] Anonymous. Contributors. *IEEE Spectrum*, 60(11):4, November 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbx

[Ano23-81] Anonymous. Contributors. *IEEE Spectrum*, 60(12):4, December 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Ca

[Ano23-82] Anonymous. Cover 2. *IEEE Spectrum*, 60(1):CV2, January

2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cf

[Ano23-83] Anonymous. Cover 2. *IEEE Spectrum*, 60(3):CV2, March 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Ck

[Ano23-84] Anonymous. Cover 2. *IEEE Spectrum*, 60(4):CV2, April 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cp

[Ano23-85] Anonymous. Cover 2. *IEEE Spectrum*, 60(5):CV2, May 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cu

[Ano23-86] Anonymous. Cover 2. *IEEE Spectrum*, 60(6):CV2, June 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cz

[Ano23-87] Anonymous. Cover 2. *IEEE Spectrum*, 60(7):1, July 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbl

[Ano23-88] Anonymous. Cover 2. *IEEE Spectrum*, 60(10):CV2, October 2023. CODEN IIESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbq

[Ano23-89] Anonymous. Cover 2. *IEEE Spectrum*, 60(11):CV2, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbv

[Ano23-90] Anonymous. Cover 2. *IEEE Spectrum*, 60(12):CV2, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cd

[Ano23-91] Anonymous. Cover 3. *IEEE Spectrum*, 60(1):CV3, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Ci

[Ano23-92] Anonymous. Cover 3. *IEEE Spectrum*, 60(3):CV3, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cn

[Ano23-93] Anonymous. Cover 3. *IEEE Spectrum*, 60(4):CV3, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cs

[Ano23-94] Anonymous. Cover 3. *IEEE Spectrum*, 60(5):CV3, May 2023.

CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cx

[Ano23-95] Anonymous. Cover 3. *IEEE Spectrum*, 60(6):CV3, June 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbc

[Ano23-96] Anonymous. Cover 3. *IEEE Spectrum*, 60(7):1, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbo

[Ano23-97] Anonymous. Cover 3. *IEEE Spectrum*, 60(10):CV3, October 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbt

[Ano23-98] Anonymous. Cover 3. *IEEE Spectrum*, 60(11):CV3, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cby

[Ano23-99] Anonymous. Cover 3. *IEEE Spectrum*, 60(12):CV3, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Ce

[Ano23-100] Anonymous. Cover 4. *IEEE Spectrum*, 60(1):CV4, January

2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cj

[Ano23-101] Anonymous. Cover 4. *IEEE Spectrum*, 60(3):CV4, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Co

[Ano23-102] Anonymous. Cover 4. *IEEE Spectrum*, 60(4):CV4, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Ct

[Ano23-103] Anonymous. Cover 4. *IEEE Spectrum*, 60(5):CV4, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cy

[Ano23-104] Anonymous. Cover 4. *IEEE Spectrum*, 60(6):CV4, June 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbd

[Ano23-105] Anonymous. Cover 4. *IEEE Spectrum*, 60(7):1, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbp

[Ano23-106] Anonymous. Cover 4. *IEEE Spectrum*, 60(10):CV4, October 2023. CODEN IEESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbu

[Ano23-107] Anonymous. Cover 4. *IEEE Spectrum*, 60(11):CV4, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbz

[Ano23-108] Anonymous. Cover 4. *IEEE Spectrum*, 60(12):CV4, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbg

[Ano23-109] Anonymous. Cover2. *IEEE Spectrum*, 60(9):1, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbj

[Ano23-110] Anonymous. Cover3. *IEEE Spectrum*, 60(9):1, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Cbk

[Ano23-111] Anonymous. Cover4. *IEEE Spectrum*, 60(9):1, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:FCa

[Ano23-112] Anonymous. Front cover. *IEEE Spectrum*, 60(1):1, January 2023.

CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:FCb

[Ano23-113] Anonymous. Front cover. *IEEE Spectrum*, 60(3):1, March 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:FCc

[Ano23-114] Anonymous. Front cover. *IEEE Spectrum*, 60(4):1, April 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:FCd

[Ano23-115] Anonymous. Front cover. *IEEE Spectrum*, 60(5):1, May 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:FCe

[Ano23-116] Anonymous. Front cover. *IEEE Spectrum*, 60(6):1, June 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:FCf

[Ano23-117] Anonymous. Front cover. *IEEE Spectrum*, 60(7):1, July 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:FCg

[Ano23-118] Anonymous. Front cover. *IEEE Spectrum*, 60(8):1, August 2023.

CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:FCb

[Ano23-119] Anonymous. Front cover. *IEEE Spectrum*, 60(9):1, September 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:FCi

[Ano23-120] Anonymous. Front cover. *IEEE Spectrum*, 60(10):1, October 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:FCj

[Ano23-121] Anonymous. Front cover. *IEEE Spectrum*, 60(11):1, November 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:FCk

[Ano23-122] Anonymous. Front cover. *IEEE Spectrum*, 60(12):1, December 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Ma

[Ano23-123] Anonymous. Masthead. *IEEE Spectrum*, 60(1):6, January 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Mb

[Ano23-124] Anonymous. Masthead. *IEEE Spectrum*, 60(3):4, March 2023.

CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Mc

[Ano23-125] Anonymous. Masthead. *IEEE Spectrum*, 60(4):4, April 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Md

[Ano23-126] Anonymous. Masthead. *IEEE Spectrum*, 60(5):4, May 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Me

[Ano23-127] Anonymous. Masthead. *IEEE Spectrum*, 60(6):4, June 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Mf

[Ano23-128] Anonymous. Masthead. *IEEE Spectrum*, 60(7):4, July 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Mg

[Ano23-129] Anonymous. Masthead. *IEEE Spectrum*, 60(8):4, August 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Mh

[Ano23-130] Anonymous. Masthead. *IEEE Spectrum*, 60(9):4, September

2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Mi

[Ano23-131] Anonymous. Masthead. *IEEE Spectrum*, 60(10):4, October 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:Mj

[Ano23-132] Anonymous. Masthead. *IEEE Spectrum*, 60(11):4, November 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:OA

[Ano23-133] Anonymous. Ode to an arm. *IEEE Spectrum*, 60(8):52, August 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:PF

[Ano23-134] Anonymous. Past forward. *IEEE Spectrum*, 60(9):68, September 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:S

[Ano23-135] Anonymous. Staff. *IEEE Spectrum*, 60(12):4, December 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:TT

[Ano23-136] Anonymous. Top tech 2023. *IEEE Spectrum*, 60(1):23, January 2023. CODEN IIESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2023:WPH

[Ano23-137] Anonymous. Wind-powered home heating. *IEEE Spectrum*, 60(8):14–15, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Aa

[Ano24a] Anonymous. Advertisement. *IEEE Spectrum*, 61(01):3, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ab

[Ano24b] Anonymous. Advertisement. *IEEE Spectrum*, 61(01):5, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ac

[Ano24c] Anonymous. Advertisement. *IEEE Spectrum*, 61(01):21, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ad

[Ano24d] Anonymous. Advertisement. *IEEE Spectrum*, 61(01):59, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ae

[Ano24e] Anonymous. Advertisement. *IEEE Spectrum*, 61(01):60, January 2024. CODEN IEESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Af

[Ano24f] Anonymous. Advertisement. *IEEE Spectrum*, 61(01):61, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ag

[Ano24g] Anonymous. Advertisement. *IEEE Spectrum*, 61(01):62, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ah

[Ano24h] Anonymous. Advertisement. *IEEE Spectrum*, 61(01):63, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ai

[Ano24i] Anonymous. Advertisement. *IEEE Spectrum*, 61(01):1, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Aj

[Ano24j] Anonymous. Advertisement. *IEEE Spectrum*, 61(01):1, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ak

[Ano24k] Anonymous. Advertisement. *IEEE Spectrum*, 61(2):3, February 2024. CODEN IEESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Al

[Ano24l] Anonymous. Advertisement. *IEEE Spectrum*, 61(2):35, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Am

[Ano24m] Anonymous. Advertisement. *IEEE Spectrum*, 61(2):47, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:An

[Ano24n] Anonymous. Advertisement. *IEEE Spectrum*, 61(3):3, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ao

[Ano24o] Anonymous. Advertisement. *IEEE Spectrum*, 61(3):13, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ap

[Ano24p] Anonymous. Advertisement. *IEEE Spectrum*, 61(3):63, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Aq

[Ano24q] Anonymous. Advertisement. *IEEE Spectrum*, 61(4):3, April 2024. CODEN IEESAM. ISSN

0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ar

[Ano24r] Anonymous. Advertisement. *IEEE Spectrum*, 61(4):5, April 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:As

[Ano24s] Anonymous. Advertisement. *IEEE Spectrum*, 61(4):51, April 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Cb

[Ano24t] Anonymous. Contents. *IEEE Spectrum*, 61(01):1-2, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ce

[Ano24u] Anonymous. Contents. *IEEE Spectrum*, 61(2):1, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Cj

[Ano24v] Anonymous. Contents. *IEEE Spectrum*, 61(3):1, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Co

[Ano24w] Anonymous. Contents. *IEEE Spectrum*, 61(4):1, April 2024.

CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Cc

[Ano24x] Anonymous. Contributors. *IEEE Spectrum*, 61(01):6, January 2024. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Cf

[Ano24y] Anonymous. Contributors. *IEEE Spectrum*, 61(2):4, February 2024. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ck

[Ano24z] Anonymous. Contributors. *IEEE Spectrum*, 61(3):4, March 2024. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Cp

[Ano24-27] Anonymous. Contributors. *IEEE Spectrum*, 61(4):4, April 2024. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Cd

[Ano24-28] Anonymous. Cover 2. *IEEE Spectrum*, 61(2):CV2, February 2024. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ci

[Ano24-29] Anonymous. Cover 2. *IEEE Spectrum*, 61(3):CV2, March

2024. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Cn

[Ano24-30] Anonymous. Cover 2. *IEEE Spectrum*, 61(4):CV2, April 2024. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Cg

[Ano24-31] Anonymous. Cover 3. *IEEE Spectrum*, 61(2):CV3, February 2024. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Cl

[Ano24-32] Anonymous. Cover 3. *IEEE Spectrum*, 61(3):CV3, March 2024. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Cq

[Ano24-33] Anonymous. Cover 3. *IEEE Spectrum*, 61(4):CV3, April 2024. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ch

[Ano24-34] Anonymous. Cover 4. *IEEE Spectrum*, 61(2):CV4, February 2024. CODEN IEEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Cm

[Ano24-35] Anonymous. Cover 4. *IEEE Spectrum*, 61(3):CV4, March

2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Cr

[Ano24-36] Anonymous. Cover 4. *IEEE Spectrum*, 61(4):CV4, April 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ca

[Ano24-37] Anonymous. Cover2. *IEEE Spectrum*, 61(01):1, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:FCa

[Ano24-38] Anonymous. Front cover. *IEEE Spectrum*, 61(01):1, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:FCb

[Ano24-39] Anonymous. Front cover. *IEEE Spectrum*, 61(2):1, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:FCc

[Ano24-40] Anonymous. Front cover. *IEEE Spectrum*, 61(3):1, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:FCd

[Ano24-41] Anonymous. Front cover. *IEEE Spectrum*, 61(4):1, April 2024.

CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Ma

[Ano24-42] Anonymous. Masthead. *IEEE Spectrum*, 61(01):6, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Mb

[Ano24-43] Anonymous. Masthead. *IEEE Spectrum*, 61(2):4, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Mc

[Ano24-44] Anonymous. Masthead. *IEEE Spectrum*, 61(3):4, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:Md

[Ano24-45] Anonymous. Masthead. *IEEE Spectrum*, 61(4):4, April 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:MM

[Ano24-46] Anonymous. Mechanical megatalent. *IEEE Spectrum*, 61(4):14–15, April 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:MEV

[Ano24-47] Anonymous. A mouse's-eye view. *IEEE Spectrum*, 61

(3):14–15, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:TVE

[Ano24-48] Anonymous. A taste of Venus on Earth. *IEEE Spectrum*, 61(2):14–15, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Anonymous:2024:TT

[Ano24-49] Anonymous. Top tech 2024. *IEEE Spectrum*, 61(01):23, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Armstrong:2020:VDS

[Arm20] C. M. Armstrong. These vacuum devices stood guard during the Cold War, advanced particle physics, treated cancer patients, and made the Beatles sound better. *IEEE Spectrum*, 57(11):30–36, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Ackerman:2022:Na

[ARPH22] Evan Ackerman, Rahul Rao, Julianne Pepitone, and Michelle Hampson. News. *IEEE Spectrum*, 59(5):7–13, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Ackerman:2022:YRW

[AS22] Evan Ackerman and Eliza Strickland. Are you ready for workplace brain scanning?: Leveraging brain data will make workers happier and more productive,

backers say. *IEEE Spectrum*, 59(12):46–52, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Ashruf:2023:CTP

[Ash23] Colin Ashruf. Careers: 10 tips for product development: Getting to market requires more than clever engineering. *IEEE Spectrum*, 60(4):19–20, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Ackerman:2022:TWB

[AZPC22] Evan Ackerman, Glenn Zorpette, Julianne Pepitone, and Charles Q. Choi. Transportation: What’s behind the air-taxi craze: a wave of eVTOL startups aim to revolutionize transportation. *IEEE Spectrum*, 59(3):6–13, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Bajema:2022:WAS

[Baj22] Natasha Bajema. Will AI steal submarines’ stealth?: Better detection will make the oceans transparent and perhaps undermine nuclear deterrence. *IEEE Spectrum*, 59(9):36–41, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Barger:2020:TRT

[Bar20] T. S. Barger. Turning robots into teacher’s aides: Christian Wanmaker’s robotics software helps students on the autism spectrum — careers. *IEEE Spec-*

trum, 57(3):19, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Baramsai:2022:NNS

- [BBFS22] Bayarbadrakh Baramsai, Theresa Benyo, Lawrence Forsley, and Bruce Steinetz. NASA’s new shortcut to fusion power: Lattice confinement fusion eliminates massive magnets and powerful lasers. *IEEE Spectrum*, 59(3):32–37, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Bicknell:2023:HDA

- [BBS23] Klinton Bicknell, Claire Brust, and Burr Settles. How Duolingo’s AI learns what you need to learn: The language-learning app tries to emulate a great human tutor. *IEEE Spectrum*, 60(3):28–33, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Balossino:2022:MND

- [BD22] Alessandro Balossino and Faramaz Davarian. The Moon needs decent wireless coverage: Argotec and JPL’s relay satellites could deliver bandwidth for more than 90 missions. *IEEE Spectrum*, 59(4):32–37, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Beane:2022:TRS

- [Bea22] Matt Beane. Today’s robotic surgery turns surgical trainees

into spectators: Medical training in the robotics age leaves tomorrow’s surgeons short on skills. *IEEE Spectrum*, 59(8):32–37, August 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Barth:2024:IMT

- [BF24] Phillip W. Barth and Leslie A. Field. Inkjets are for more than just printing: They can build DNA arrays, 3D structures, and much more. *IEEE Spectrum*, 61(4):32–37, April 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Bajema:2021:N

- [BGR⁺21] Natasha Bajema, Maria Gallucci, Rahul Rao, Philip E. Ross, and Michelle Hampson. News. *IEEE Spectrum*, 58(6):6–13, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Bilen:2020:WNR

- [BMRW20] S. Bilen, D. Mortensen, R. Reinhardt, and A. Wyglinski. Where no radio has gone before: Cognitive radios can keep deep-space missions connected to earth even when faced with alien environments. *IEEE Spectrum*, 57(8):44–50, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Bouman:2020:PBH

- [Bou20] K. L. Bouman. Portrait of a black hole: Here’s how the event horizon telescope team

- pieced together a now-famous image. *IEEE Spectrum*, 57(2): 22–29, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Bro21]
- [Bou21] C. Bouton. Brain implants and wearables reroute signals to restore movement and sensation. *IEEE Spectrum*, 58(2): 28–33, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Bro22a]
- [Bow21] Keith A. Bowman. A circuit to boost battery life: All-digital versions of the low-dropout voltage regulator will save time, money, and power. *IEEE Spectrum*, 58(8):40–45, August 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Bro22b]
- [Bra21] J. Brand. The radio that can hear over itself: Self-interference cancellation allows radios to transmit and receive on the same frequency. *IEEE Spectrum*, 58(3):30–35, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Bro22c]
- [Bre20] R. Brewster. Past forward [the SCR-536 Handie-Talkie]. *IEEE Spectrum*, 57(10):72, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Bro22d]
- [Brooks:2021:HLA] Rodney Brooks. A human in the loop: AI won’t surpass human intelligence anytime soon. *IEEE Spectrum*, 58(10):48–49, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Brooks:2022:LRO] Rodney Brooks. The long road to overnight success: Reusable rocket boosters were decades in the making. *IEEE Spectrum*, 59(4):20–21, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Brooks:2022:MMN] Rodney Brooks. Myth and machine: 22 November 1935: The day globalism was born: Juan Trippe’s Pan Am Clippers launched a new era. *IEEE Spectrum*, 59(6):22–23, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Brooks:2022:MMB] Rodney Brooks. Myth and machine: Building boom: Population growth and climate change have an upside. *IEEE Spectrum*, 59(3):23, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Brooks:2022:MMO] Rodney Brooks. Myth and machine: The other side of the Innovator’s Dilemma: Beware the

quiet disruptors. *IEEE Spectrum*, 59(7):20–21, July 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Brock:2023:MTC

[Bro23a] David C. Brock. The machine that transformed computing: The Xerox Alto combined windows, WYSIWYG, menus, and networking to make the modern PC. *IEEE Spectrum*, 60(3):40–45, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Brock:2023:PF

[Bro23b] David C. Brock. Past forward. *IEEE Spectrum*, 60(3):68, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Broo:2023:HGA

[Bro23c] Didem Gürdür Broo. How generative AI helped me imagine a better robot: It didn't give me schematics, but it did boost my creativity. *IEEE Spectrum*, 60(11):44–50, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Biercuk:2022:QEC

[BS22] Michael J. Biercuk and Thomas M. Stace. Quantum error correction at the threshold: If technologists don't get beyond it, quantum computers will never be big. *IEEE Spectrum*, 59(7):28–46, July 2022. CODEN IEESAM.

ISSN 0018-9235 (print), 1939-9340 (electronic).

Burr:2021:OLK

[BSAH21] Geoffrey W. Burr, Abu Sebastian, Takashi Ando, and Wilfried Haensch. Ohm's Law + Kirchhoff's current law = better AI: Neural-network processing done in memory with analog circuits will save energy. *IEEE Spectrum*, 58(12):44–49, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Bajema:2022:ARW

[BSG22] Natasha Bajema, Craig S. Smith, and Dan Garisto. AI's real worst-case scenarios: Who needs Terminators when you have precision clickbait and ultra-deepfakes? *IEEE Spectrum*, 59(1):8–14, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Baets:2023:WPL

[BVKR23] Roel Baets, Joris Van Campenhout, Bernardette Kunert, and Gunther Roelkens. 4 ways to put lasers on silicon: You can make many things with silicon photonics, but a laser is not one of them. *IEEE Spectrum*, 60(5):32–37, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Caballar:2024:WND

[Cab24] Rina Diane Caballar. We need to decarbonize software: The

- way we write software has unappreciated environmental impacts. *IEEE Spectrum*, 61(4):26–31, April 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cal22] Jason Calaiaro. AI takes a dumpster dive: Computer-vision systems sort your recyclables at superhuman speed. *IEEE Spectrum*, 59(7):22–27, July 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Car24] Rob Carlson. The world is running out of data storage. here’s how DNA can save US. *IEEE Spectrum*, 61(3):28–44, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas20a] S. Cass. Geek life: Write a program in a single tweet: What can you code in 280 characters? *IEEE Spectrum*, 57(5):54, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas20b] S. Cass. Let a thousand analog oscillators sing: Sam Battle, champion of analog engineering — [Geek Life]. *IEEE Spectrum*, 57(10):15, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas20c] S. Cass. Life on Mars? *IEEE Spectrum*, 57(1):42–43, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas20d] S. Cass. Nvidia makes it easy to embed AI: The Jetson nano packs a lot of machine-learning power into DIY projects — [hands on]. *IEEE Spectrum*, 57(7):14–16, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas20e] S. Cass. Oscilloscope clock: Build a vector-graphics display using an old cathode-ray tube — [hands on]. *IEEE Spectrum*, 57(1):14–16, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas20f] S. Cass. Painless FPGA programming: The alchitry AU kit can simplify projects that need a lot of input/output — [hands on]. *IEEE Spectrum*, 57(12):18–20, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas20g] S. Cass. Plotting experiments: The AxiDraw minikit is the X–Y plotter you didn’t know you wanted — [hands on]. *IEEE*
- Cass:2020:LM**
- Calaiaro:2022:ATD**
- Cass:2020:NMI**
- Carlson:2024:WRD**
- Cass:2020:OCB**
- Cass:2020:GLW**
- Cass:2020:PFP**
- Cass:2020:LTA**
- Cass:2020:PEA**

- Spectrum*, 57(9):16–18, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas20h] S. Cass. The Sinclair Scientific, remade: a classic calculator was reverse engineered from the bare metal — [hands on]. *IEEE Spectrum*, 57(6):14–16, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas20i] S. Cass. The top programming languages: Our latest rankings put Python on top-again — [careers]. *IEEE Spectrum*, 57(8):22, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas21a] S. Cass. Hands on. *IEEE Spectrum*, 58(3):14–16, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas21b] Stephen Cass. Hands on. *IEEE Spectrum*, 58(7):16–18, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas21c] Stephen Cass. Home clustering made easier: Learn Docker and Kubernetes with the Turing Pi. *IEEE Spectrum*, 58(11):16–18, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas21d] Stephen Cass. Top programming languages: Our eighth annual probe into what’s hot and not. *IEEE Spectrum*, 58(10):17, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas22a] Stephen Cass. Hi-fi, radio, retro, and more: The DIY projects *Spectrum* readers love. *IEEE Spectrum*, 59(12):18–20, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas22b] Stephen Cass. Passive radar with the KrakenSDR: Spot stuff with TV antennas and a software-defined radio. *IEEE Spectrum*, 59(11):16–18, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas22c] Stephen Cass. SQL should be your second language. *IEEE Spectrum*, 59(10):20–21, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cas22d] Stephen Cass. Stefany Allaire: a micromanufacturer carves her niche. *IEEE Spectrum*, 59(3):19,

Cass:2020:SSR

[Cas21d]

Cass:2021:TPL**Cass:2020:TPL**

[Cas22a]

Cass:2022:HFR**Cass:2021:Ha**

[Cas22b]

Cass:2022:PRK**Cass:2021:Hb**

[Cas22c]

Cass:2022:SSY**Cass:2021:HCM**

[Cas22d]

Cass:2022:SAM

- March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Cas23b]
- Cass:2023:HDY**
- [Cas22e] Stephen Cass. The ultimate transistor timeline: The transistor's amazing evolution from point contacts to quantum tunnels. *IEEE Spectrum*, 59(12):29, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Cass:2022:UTT**
- [Cas22f] Stephen Cass. Upcycling a Tandy Model 100: The tricky part is its weird display. *IEEE Spectrum*, 59(10):16–18, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Cass:2022:UTM**
- [Cas22g] Stephen Cass. Weave your own memory: a staggering 64 bits of Apollo-era ferrite-core memory can be yours [hands on]. *IEEE Spectrum*, 59(8):14–16, August 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Cass:2022:WYO**
- [Cas23a] Stephen Cass. 5 questions for Limor Fried: What to do when the ghost in the machine is you. *IEEE Spectrum*, 60(12):21, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Cass:2023:QLF**
- [Cas23b] Stephen Cass. A hacker's delight: You'll either love or hate the flipper zero. *IEEE Spectrum*, 60(5):18–20, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Cass:2023:ISB**
- [Cas23c] Stephen Cass. I²C strikes back: Surprises can lurk in even a simple comms protocol. *IEEE Spectrum*, 60(4):16–18, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Cass:2023:YHB**
- [Cas23d] Stephen Cass. Yugoslavia's home-brewed microcomputer: The Z80-based Galaksija dared to be different. *IEEE Spectrum*, 60(8):16–18, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- CASS:2024:BNA**
- [CAS24a] STEPHEN CASS. A brand new analog computer: Go beyond digital with the THAT. *IEEE Spectrum*, 61(01):16–18, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Cass:2024:H**
- [Cas24b] Stephen Cass. Hands on. *IEEE Spectrum*, 61(3):16–18, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [Cas24c] **Cass:2024:MHH** Stephen Cass. The most hackable handheld ham radio yet: The UV-K5 can be modded at the click of a mouse. *IEEE Spectrum*, 61(4):16–18, April 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [CD21] **Camsari:2021:DCT** Kerem Camsari and Supriyo Datta. Dialogue concerning the two chief computing systems: Imagine yourself on a flight talking to an engineer about a scheme that straddles classical and quantum. *IEEE Spectrum*, 58(4):30–35, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [CFPP22] **Choi:2022:SGQ** Charles Q. Choi, Peter Fairley, Tekla S. Perry, and Prachi Patel. Sensors: a guide to the quantum-sensor boom: Atomic scale bolsters sensing revolutions in medicine, tech, and engineering. *IEEE Spectrum*, 59(6):5–13, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [CG23] **Cass:2023:HPS** Stephen Cass and Harry Goldstein. How Python swallowed the world: Lessons from compiling top programming languages. *IEEE Spectrum*, 60(9):2, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cha20a] **Charette:2020:MRR** R. N. Charette. Managing risk and responsibility during a crisis: The COVID-19 pandemic has resurfaced questions about the government’s role when disaster strikes — [spectral lines]. *IEEE Spectrum*, 57(5):4, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cha20b] **Charette:2020:NON** R. N. Charette. No one notices the creaky software systems that run the world until they fail. *IEEE Spectrum*, 57(9):24–30, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cha21a] **Chahat:2021:AMI** Nacer E. Chahat. An antenna made for an icy, radioactive hell: JPL’s all-metal design can withstand Europa’s brutal environment. *IEEE Spectrum*, 58(8):34–39, August 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Cha21b] **Chance:2021:LDF** Frances Chance. Lessons from a dragon fly’s brain: Evolution built a small, fast, efficient neural network in a dragonfly. why not copy it for missile defense? *IEEE Spectrum*, 58(8):28–33, August 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Charette:2023:ETH

- [Cha23] Robert N. Charette. The EV transition is harder than anyone thinks: Clueless policymakers, skeptical consumers, greedy automakers and the tech isn't ready either. *IEEE Spectrum*, 60(4):40–45, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Charette:2024:CFB

- [Cha24] Robert N. Charette. Can flow batteries finally beat lithium?: Nanoparticles may boost energy density enough for EVs. *IEEE Spectrum*, 61(2):22–27, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Chivers:2021:HTA

- [Chi21] Tom Chivers. How to train an all-purpose robot: DeepMind is tackling one of the hardest problems for AI. *IEEE Spectrum*, 58(10):34–41, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Czerwinski:2021:BAF

- [CHM21] Mary Czerwinski, Javier Hernandez, and Daniel McDuff. Building an AI that feels: AI systems with emotional intelligence could learn faster and be more helpful. *IEEE Spectrum*, 58(5):32–38, May 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Choi:2020:PUT

- [Cho20] C. Q. Choi. 3 practical uses for topological photonics: an obscure phenomenon could improve chips, lasers, and quantum circuitry. *IEEE Spectrum*, 57(4):9–10, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Choi:2021:RWA

- [Cho21] Charles Q. Choi. 7 revealing ways AIs fail: Neural networks can be disastrously brittle, forgetful, and surprisingly bad at math. *IEEE Spectrum*, 58(10):42–47, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Choi:2023:IQL

- [Cho23] Charles Q. Choi. IBM's quantum leap: The company will take quantum tech past the 1,000-qubit mark in 2023. *IEEE Spectrum*, 60(1):46–47, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Choi:2021:NLD

- [CKG⁺21] Charles Choi, Karen Kwon, Edd Gent, Samuel K. Moore, and Evan Ackerman. News: The latest developments in technology, engineering, and science [6 items]. *IEEE Spectrum*, 58(7):6–13, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- Clynes:2023:N**
- [CKX⁺23] Tom Clynes, Gerald Kulcinski, Tammy Xu, Prachi Patel, Junhong Chen, and Samuel K. Moore. News. *IEEE Spectrum*, 60(11):6–13, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Clynes:2020:BIF**
- [Cly20] T. Clynes. 5 big ideas for fusion power: Startups, universities, and major companies are vying to commercialize a nuclear fusion reactor. *IEEE Spectrum*, 57(2):30–37, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Clynes:2022:PFZ**
- [Cly22] Tom Clynes. A pinch of fusion: Zap Energy’s new Z-pinch reactor will demonstrate a simpler approach to an elusive goal. *IEEE Spectrum*, 59(1):54–55, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Clynes:2023:CKHb**
- [Cly23] Tom Clynes. Can 10,000 kilometers of high-temperature superconducting tape transform fusion power? *IEEE Spectrum*, 60(8):30–36, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Cohen:2022:GWW**
- [Coh22] Gregory Cohen. Gooaall!!!: Why we built a neuromorphic robot to play foosball. *IEEE Spectrum*, 59(3):44–50, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Cook:2021:HWG**
- [Coo21] Jeremy S. Cook. This huge workbench gives you a hand: a little bit of automation and a lot of space makes projects easier. *IEEE Spectrum*, 58(8):14–16, August 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Cook:2022:MPS**
- [Coo22] Jeremy S. Cook. My password is: > security with a high-resolution spectrometer. *IEEE Spectrum*, 59(1):16–18, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Cortada:2021:EQ**
- [Cor21a] James W. Cortada. The essential question. *IEEE Spectrum*, 58(8):2, August 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Cortada:2021:PFT**
- [Cor21b] James W. Cortada. Past forward: a tool for modern times. *IEEE Spectrum*, 58(8):48, August 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Cherston:2021:SDS**
- [CP21] Juliana Cherston and Joseph A. Paradiso. The smartly dressed spacecraft: Wrapped in sensor-rich electronic textiles, space

- structures could double as scientific instruments. *IEEE Spectrum*, 58(12):30–37, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [De 22]
- Cline:2021:PBB**
- [CPBZ21] Brian Cline, Divya Prasad, Eric Beyne, and Odysseas Zografos. Power from below: Buried interconnects will help save Moore’s Law. *IEEE Spectrum*, 58(9):46–51, September 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Deg24]
- Crittenden:2020:UBE**
- [Cri20] M. Crittenden. Ultralight batteries for electric airplanes. *IEEE Spectrum*, 57(9):44–49, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Der20]
- Crocker:2020:CPH**
- [Cro20] S. Crocker. The consensus protocol: How a radical process, invented to build the Arpanet, spawned history’s greatest tool for collaborative work. *IEEE Spectrum*, 57(8):38–43, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Der21a]
- Choi:2022:N**
- [CSB22] Charles Q. Choi, Eliza Strickland, and John Boyd. News. *IEEE Spectrum*, 59(2):6–50, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Der21b]
- DeHaro:2022:LC**
- Roger De Haro. Living in color. *IEEE Spectrum*, 59(1):4, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Der21c]
- Degertekin:2024:HUB**
- F. Levent Degertekin. How ultrasound became ultra small. *IEEE Spectrum*, 61(4):38–43, April 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Dern:2020:MGI**
- D. P. Dern. Merryl Gross, information architect: From cockpits to clinics, user experiences can mean life or death — [careers]. *IEEE Spectrum*, 57(11):19, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Dern:2021:Ca**
- D. P. Dern. Careers. *IEEE Spectrum*, 58(2):17, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Dern:2021:Cb**
- D. P. Dern. Careers. *IEEE Spectrum*, 58(3):17, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Dern:2021:Cc**
- Daniel Dern. Careers. *IEEE Spectrum*, 58(5):54, May 2021.

CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Dern:2021:ESS

- [Der21d] Daniel P. Dern. Engineering secrets: Sandia's Dennisa Thomas ensures systems work as intended [careers]. *IEEE Spectrum*, 58(7):19, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Dern:2021:SSF

- [Der21e] Daniel P. Dern. From spacecraft to sensor fusion: Disparate jobs let Iverson Bell create a flexible skill set. *IEEE Spectrum*, 58(8):17, August 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Dern:2021:MPN

- [Der21f] Daniel P. Dern. Marcellus Proctor: This NASA leader oversees major space projects. *IEEE Spectrum*, 58(11):20, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Dern:2021:BDH

- [Der21g] Daniel P. Dern. S. B. Divya: How a working engineer writes some of the best science fiction around. *IEEE Spectrum*, 58(6):19, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Dern:2021:SSG

- [Der21h] Daniel P. Dern. Safety at scale: General Motors' Ankur

Ganguli. *IEEE Spectrum*, 58(9):21, September 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Dern:2022:AGV

- [Der22a] Daniel P. Dern. Adam Grosser: this VC is big on transportation alternatives [careers]. *IEEE Spectrum*, 59(7):17, July 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Dern:2022:CPM

- [Der22b] Daniel P. Dern. Craig Partridge: In the midst of Internet traffic for 40 years and loving it. *IEEE Spectrum*, 59(11):19, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Dern:2022:HPU

- [Der22c] Daniel P. Dern. How Purdue University commercializes its research: Yung-Hsiang Lu helps turn research results into revenue. *IEEE Spectrum*, 59(5):19, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Dern:2022:MSP

- [Der22d] Daniel P. Dern. Magaly Sandoval-Pichardo: Her vast range of experience lets her make the smallest circuits. *IEEE Spectrum*, 59(4):17, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- Dern:2022:MMS**
- [Der22e] Daniel P. Dern. Magdalene Maluta: She’s building a fleet of personal EVs in Kenya. *IEEE Spectrum*, 59(9):19, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Dern:2022:MRS**
- [Der22f] Daniel P. Dern. Maria Rerecich: She tests products for *Consumer Reports* to ensure they work as claimed. *IEEE Spectrum*, 59(6):19, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Dern:2022:PJA**
- [Der22g] Daniel P. Dern. Profile: Julie Angus: Her startup builds autonomous ocean explorers [careers]. *IEEE Spectrum*, 59(8):17, August 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Dern:2022:PMO**
- [Der22h] Daniel P. Dern. Profile: Melanie Olsen: She leads autonomous marine tech testing at ReefWorks. *IEEE Spectrum*, 59(10):19, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Dern:2023:CBS**
- [Der23a] Daniel P. Dern. Careers: Brij Singh: Electrifying John Deere’s heavy-duty vehicles. *IEEE Spectrum*, 60(9):21–22, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Dern:2023:CET**
- [Der23b] Daniel P. Dern. Careers: Eileen Tanghal: Her journey from EE to VC. *IEEE Spectrum*, 60(6):19–20, June 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Dern:2023:CEH**
- [Der23c] Daniel P. Dern. Careers: Eugene H. Spafford: He’s been fighting cybersecurity threats for decades. *IEEE Spectrum*, 60(3):19–20, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Dern:2023:CJZ**
- [Der23d] Daniel P. Dern. Careers: Jonathan L. Zittrain: The Harvard law professor is an expert on digital technology. *IEEE Spectrum*, 60(5):21–22, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Downey:2020:MLR**
- [DHOW20] J. Downey, B. Hilburn, T. O’Shea, and N. West. Machine learning remakes radio. *IEEE Spectrum*, 57(5):35–39, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- DeReyes:2020:CCD**
- [DM20] E. De Reyes and J. Macneill. Can cargo drones solve air freight’s logjams? A drone startup says its big vertical-takeoff flier would

- be quick to land, load, and take off again. *IEEE Spectrum*, 57(6):30–35, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Dum23]
- Dolgin:2023:AGJ**
- [Dol23a] Elie Dolgin. Arthritis gets a jolt: 2023 will see the results of nerve stimulation for autoimmune disorders. *IEEE Spectrum*, 60(1):48–49, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Dut22]
- Dolgin:2023:DTB**
- [Dol23b] Elie Dolgin. Different types of brain stimulation may reduce cravings. *IEEE Spectrum*, 60(8):24–29, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Ehn23]
- Dumiak:2020:DPA**
- [Dum20] M. Dumiak. Data project aims to organize scientific records: Deep-time Digital Earth will link hundreds of bespoke databases — [news]. *IEEE Spectrum*, 57(3):9–10, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Eis23]
- Dumiak:2022:RTV**
- [Dum22] Michael Dumiak. A road test for vehicle-to-grid tech: Utrecht leads the world in using EVs for grid storage. *IEEE Spectrum*, 59(8):20–25, August 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Fai20a]
- Dumiak:2023:ECE**
- Michael Dumiak. Exascale comes to Europe: Germany will host JUPITER, Europe’s entry into the realm of exascale supercomputing. *IEEE Spectrum*, 60(1):50–51, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Dutta:2022:EBE**
- Barun Dutta. Eavesdropping on the brain: With 10,000 electrodes, this neural implant senses more than ever before. *IEEE Spectrum*, 59(6):30–35, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Ehnebuske:2023:H**
- David Ehnebuske. Hands on. *IEEE Spectrum*, 60(9):18–20, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Eisler:2023:FSC**
- Matthew N. Eisler. False starts: The checkered history of vehicle-to-grid power. *IEEE Spectrum*, 60(4):46–53, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Fairley:2020:BSG**
- P. Fairley. Bangladesh scrambles to grow power supply — [news]. *IEEE Spectrum*, 57(2):6–7, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [Fai20b] **Fairley:2020:IGV**
 P. Fairley. India grapples with vast solar park — [news]. *IEEE Spectrum*, 57(2):8–9, February 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Fai21] **Fairley:2021:GSK**
 Peter Fairley. Off-grid solar’s killer app: Solar pumps, batteries, and microcredit are triggering an African agricultural renaissance. *IEEE Spectrum*, 58(6):44–49, June 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Fai23a] **Fairley:2023:BBG**
 Peter Fairley. Buoyant behemoths: The global race is on to tap potent winds far offshore. *IEEE Spectrum*, 60(11):30–37, November 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Fai23b] **Fairley:2023:MGH**
 Peter Fairley. Making green hydrogen a reality Down Under: Proposals to make hydrogen from renewable electricity in Australia exceed the country’s generating capacity. *IEEE Spectrum*, 60(1):24–27, January 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Fai23c] **Fairley:2023:THE**
 Peter Fairley. The transformer: How energy modeler Jesse Jenkins helped Congress get serious about the power grid. *IEEE Spectrum*, 60(12):30–33, December 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Fai24] **Fairley:2024:HVD**
 Peter Fairley. High-voltage DC power roars ashore in Europe: Scotland’s next-generation transmission network foreshadows a global grid transformation. *IEEE Spectrum*, 61(01):28–31, January 2024. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [FBMI23] **Farina:2023:RWG**
 Dario Farina, Etienne Burdet, Carsten Mehring, and Jaime Ibáñez. Roboticians want to give you a third arm: Unused bandwidth in neurons can be tapped to control extra limbs. *IEEE Spectrum*, 60(3):22–46, March 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Fit21] **Fitzgerald:2021:NWW**
 Alissa M. Fitzgerald. A new wildfire watchdog: Alerts about forest fires shouldn’t depend on pets smelling smoke. we need smart infrastructure, and that needs zero-power sensors. *IEEE Spectrum*, 58(11):38–43, November 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [FK21] **Fork:2021:HEC**
David Fork and Ross Koningstein. How engineers can disrupt climate change. *IEEE Spectrum*, 58(7):24–29, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [FOSMD23] **Ferrari:2023:WCM** [Fru20]
Maximiliano Ferrari, Ben Ollis, Michael Starke, and Arturo Massol-Deya. The well-connected microgrid: a network of microgrids can withstand severestorms. *IEEE Spectrum*, 60(10):36–43, October 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Fou21] **Foust:2021:TWM** [Fun20]
J. Foust. Three ways to the Moon: NASA will soon narrow the possible strategies for landing people on the Moon. *IEEE Spectrum*, 58(1):44–47, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Fou22] **Foust:2022:NSL** [GA20]
Jeff Foust. NASA’s space launch system will lift off: But with rival rockets readying for flight, the ultimate value of SLS is murky. *IEEE Spectrum*, 59(1):36–39, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Fra21] **Frank:2021:SAC** [GAG20]
Steven J. Frank. State of the art: This convolutional neural network can tell you whether a painting is a fake. *IEEE Spectrum*, 58(9):26–31, September 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Frumer:2020:SSL**
Y. Frumer. The short, strange life of the first friendly robot: Japan’s Gakutensoku was a giant pneumatic automaton that toured through Asia until it mysteriously disappeared. *IEEE Spectrum*, 57(6):42–48, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Funk:2020:EER**
J. Funk. Expect evolution, not revolution: Despite the hype, artificial intelligence will take years to significantly boost economic productivity. *IEEE Spectrum*, 57(3):30–35, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Guizzo:2020:WFY**
E. Guizzo and E. Ackerman. \$74,500 will fetch you a spot: For the price of a luxury car, you can now buy a very smart, very capable, very yellow robot dog. *IEEE Spectrum*, 57(8):11, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Greenberg:2020:ASB**
J. A. Greenberg, A. Ashok, and M. E. Gehm. The all-seeing bag-

- gage scanner. *IEEE Spectrum*, 57(7):22–27, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Gan24]
- Ganju:2024:PED**
- Vineet Ganju. Piezoelectrics enable displays to provide both high-quality audio and touch feedback. *IEEE Spectrum*, 61(3):22–27, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Garisto:2020:NPA**
- D. Garisto. New particle-accelerating tech passes test: Energy recovery linear accelerators could reduce costs and conserve power — [news]. *IEEE Spectrum*, 57(3):6–7, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Gar20]
- Gallucci:2020:AMR**
- [Gal20a] M. Gallucci. Altarock melts rock for geothermal wells: Millimeter waves could help us dig deeper and faster than with traditional drills — [news]. *IEEE Spectrum*, 57(3):8–9, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Gallucci:2020:WDG**
- [Gal20b] M. Gallucci. What to do with 177 giant tanks of radioactive sludge. *IEEE Spectrum*, 57(5):24–33, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [GDUF22]
- Gallucci:2021:ASA**
- [Gal21a] M. Gallucci. The ammonia solution: Ammonia engines and fuel cells in cargo ships could slash their carbon emissions. *IEEE Spectrum*, 58(3):44–50, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Gen22]
- Gallucci:2021:CSF**
- [Gal21b] M. Gallucci. The carbon-sucking fans of West Texas: It’s not enough to slash greenhouse gas emissions. Experts say we need direct-air capture. *IEEE Spectrum*, 58(1):48–49, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Gen23a]
- Gent:2022:N**
- Edd Gent, Michael Dumiak, Lawrence Ulrich, and Peter Fairley. News. *IEEE Spectrum*, 59(10):6–13, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Gent:2022:LSL**
- Edd Gent. Lessons from a second life > before Meta, Philip Rosedale created an online universe. *IEEE Spectrum*, 59(1):19, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Gent:2023:CJI**
- Edd Gent. Careers: Jim Vanns: The Industrial Light & Magic Engineer wins a technical Oscar. *IEEE Spectrum*, 60(10):

- 19–20, October 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Gen24a]
- Gent:2023:CMP**
- [Gen23b] Edd Gent. Careers: Morgan Pope: This Disney roboticist brings superheroes to life. *IEEE Spectrum*, 60(12):19–20, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Gent:2023:CPG**
- [Gen23c] Edd Gent. Careers: Peter Gracey: The former Royal Navy officer advocates for LGBTQ+ engineers. *IEEE Spectrum*, 60(8):19–20, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Gent:2023:CSC**
- [Gen23d] Edd Gent. Careers: Sushama Chakraverty: How this UI designer finds the fun factor that makes video games so compelling. *IEEE Spectrum*, 60(7):19–20, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Gen24d]
- Gent:2023:CMU**
- [Gen23e] Edd Gent. A cryptocurrency for the masses or a universal ID?: Worldcoin aims to scan all the world’s eyeballs. *IEEE Spectrum*, 60(1):42–57, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Gen24e]
- Genkina:2024:NOS**
- Dina Genkina. News: Open-source hardware secures a win: sprung from RISC-V’s roots, the first open security chip hits the market. *IEEE Spectrum*, 61(4):6–13, April 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- GENT:2024:CGB**
- [GEN24b] EDD GENT. Careers: Greta Bekeryte: Her journey from cleaning offices to being one of the top women in the EV industry. *IEEE Spectrum*, 61(01):19–20, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Gent:2024:CMS**
- [Gen24c] Edd Gent. Careers: Manan Suri: His brain-inspired computers run AI on sensors and drones. *IEEE Spectrum*, 61(2):19–20, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Gent:2024:CPB**
- [Gen24d] Edd Gent. Careers: Patryk Borkowski: He has a cool gig at Unilever’s Ice Cream Innovation Center. *IEEE Spectrum*, 61(3):19–20, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Gent:2024:CZR**
- [Gen24e] Edd Gent. Careers: Zach Rattner: His startup’s AI tool makes

- moving day easier. *IEEE Spectrum*, 61(4):20–21, April 2024. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [GH23] Josh Goldman and Kurt House. AI hunts for hidden minerals: Machine learning is uncovering hoards of vital EV battery metals. *IEEE Spectrum*, 60(6):22–27, June 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Garisto:2022:N] Dan Garisto, Mark Harris, Dina Genkina, Rahul Rao, and Prachi Patel. News. *IEEE Spectrum*, 59(12):6–13, December 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Gib21] W. W. Gibbs. This is how to vaccinate the world: We can manufacture and distribute enough doses to protect humanity from COVID-19. *IEEE Spectrum*, 58(1):32–37, January 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [GO22] Dan M. Goebel and David Oh. Mission to a metal world: In August, NASA will launch a probe to study a strange metallic asteroid called Psyche. *IEEE Spectrum*, 59(2):24–29, February 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Gob23] Robert Gobron. Nanostructures transform tiny cameras: Thin semiconductor metalenses are finally moving into consumers’ hands. *IEEE Spectrum*, 60(7):22–27, July 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Gol21] Harry Goldstein. Your new *IEEE Spectrum* website: An enhanced member experience is central to the new *Spectrum* website. *IEEE Spectrum*, 58(9):6, September 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Gol22a] Harry Goldstein. AI can help make recycling better: But only humans can solve the plastics problem. *IEEE Spectrum*, 59(7):2, July 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Gol22b] Harry Goldstein. AI helps humans level up: Chess players and programmers now have access to tools that can improve skills and unleash creativity. *IEEE Spectrum*, 59(11):2, November 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [Gol22c] **Goldstein:2022:DCE**
Harry Goldstein. The device that changed everything: Transistors are civilization's invisible infrastructure. *IEEE Spectrum*, 59(12):2, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Gol22d] **Goldstein:2022:HWC**
Harry Goldstein. How we celebrate engineers: The Institute focuses on fascinating people and the technology they create. *IEEE Spectrum*, 59(9):2, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Gol22e] **Goldstein:2022:NAU**
Harry Goldstein. Nothing about us without us: Put the user at the center of assistive technology design. *IEEE Spectrum*, 59(10):2, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Gol22f] **Goldstein:2022:WVT**
Harry Goldstein. What V2G tells us about EVs and the grid: Vehicle-to-grid technology adds another layer of complexity to the electric-vehicle transition. *IEEE Spectrum*, 59(8):2, August 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Gol23a] **Goldstein:2023:AEA**
Harry Goldstein. AI everywhere, all at once: It's time to get serious about regulating artificial intelligence. *IEEE Spectrum*, 60(6):2, June 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Gol23b] **Goldstein:2023:FHM**
Harry Goldstein. Fusion is having a moment. *IEEE Spectrum*, 60(8):2, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Gol23c] **Goldstein:2023:KIR**
Harry Goldstein. Kicking it with robots: RoboCup and the new Robots Guide are gateways to the wonderful world of robots. *IEEE Spectrum*, 60(7):2, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Gol23d] **Goldstein:2023:LBS**
Harry Goldstein. Looking back to see ahead: Technologies decades in the making finally get their star turn in 2023. *IEEE Spectrum*, 60(1):4, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Gol23e] **Goldstein:2023:OHC**
Harry Goldstein. Our hands-on citizen scientist: David Schneider's DIY projects unveil nature's secrets. *IEEE Spectrum*, 60(10):2, October 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Goldstein:2023:PAH

- [Gol23f] Harry Goldstein. The portrait artist: How Tekla S. Perry chronicles consequential careers. *IEEE Spectrum*, 60(5):2, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Goldstein:2023:RHW

- [Gol23g] Harry Goldstein. Robots and the humans who make them: Our chatbot podcast features roboticists in conversation with each other. *IEEE Spectrum*, 60(11):2, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Goldstein:2023:SSE

- [Gol23h] Harry Goldstein. The staggering scale of the EV transition: One engineer grapples with the challenges ahead. *IEEE Spectrum*, 60(4):2, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

GOLDSTEIN:2024:FWS

- [GOL24a] HARRY GOLDSTEIN. The future we saw coming is now: Technologies we've been following for years will be huge in 2024. *IEEE Spectrum*, 61(01):4, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Goldstein:2024:GTW

- [Gol24b] Harry Goldstein. The greening of transportation: We'll need

new inventions and novel adaptations to decarbonize the sector. *IEEE Spectrum*, 61(2):2, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Goldstein:2024:SFH

- [Gol24c] Harry Goldstein. Sci-fi and hi-fi: The microstory of a storyteller who delivers both. *IEEE Spectrum*, 61(3):2, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Goodrich:2023:APE

- [Goo23a] Joanna Goodrich. Arjun Pillai: The entrepreneur shares lessons learned on his road to success. *IEEE Spectrum*, 60(1):18–19, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Goodrich:2023:PF

- [Goo23b] Joanna Goodrich. Past forward. *IEEE Spectrum*, 60(12):68, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Guedes-Pinto:2022:AFM

- [GP22] Paulo Guedes-Pinto. An axial-flux motor for an electrified world: It combines the best of two motor designs to save weight and energy. *IEEE Spectrum*, 59(4):38–43, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Guizzo:2020:YNS

[Gui20] E. Guizzo. Your next salad could be grown by a robot. *IEEE Spectrum*, 57(1):34–35, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Hampson:2020:CDR

[Ham20a] M. Hampson. COVID-19 disrupts research plans: The coronavirus pandemic has interrupted fieldwork and lab experiments — [news]. *IEEE Spectrum*, 57(6):9–10, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Hampson:2020:MMJ

[Ham20b] M. Hampson. Messages from a MicroLED — [journal watch]. *IEEE Spectrum*, 57(6):7, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Hampson:2020:MMM

[Ham20c] M. Hampson. Mobile malware mutates — [news]. *IEEE Spectrum*, 57(7):08, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Hampson:2020:MBL

[Ham20d] M. Hampson. Motorized backpack lightens the load — [journal watch]. *IEEE Spectrum*, 57(10):7, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Hamerly:2021:FDL

[Ham21] Ryan Hamerly. The future of deep learning is photonic: Reducing the energy needs of neural networks might require computing with light. *IEEE Spectrum*, 58(7):30–47, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Harris:2021:MTJ

[Har21] M. Harris. Military tests that jam and spoof GPS signals are an accident waiting to happen. *IEEE Spectrum*, 58(2):22–27, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Harris:2022:RST

[Har22] Mark Harris. The radical scope of Tesla’s data hoard: Every Tesla is providing reams of sensitive data about its driver’s life. *IEEE Spectrum*, 59(10):40–45, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Hassler:2020:ECP

[Has20a] S. Hassler. Ending the COVID-19 pandemic: Embracing no-tech solutions will make high-tech solutions possible — [spectral lines]. *IEEE Spectrum*, 57(12):6, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Hassler:2020:GNA

[Has20b] S. Hassler. Google has Nest. Amazon has Echo and Alexa. Savant Systems has GE lighting!

- The luxury home-automation company has its sights set on high-quality mass-market home networking — [spectral lines]. *IEEE Spectrum*, 57(7):04, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [HCP⁺23] Matthew Hutson, Charles Q. Choi, Prachi Patel, Lawrence Ulrich, and Michelle Hampson. News. *IEEE Spectrum*, 60(5):7–15, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Hec20] J. Hecht. Same old fibers, record-breaking speeds: Equipment in the lab can carry 100 million Zoom videos — [news]. *IEEE Spectrum*, 57(10):9–10, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Her20] L. Herbst. Fishing for oil. *IEEE Spectrum*, 57(6):36–50, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [HF22] Edzer Huitema and Ian French. E ink’s technicolor moment: The road to color E-paper took two decades. *IEEE Spectrum*, 59(2):30–35, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Hig20a] S. Higginbotham. Anonymous by design — [CrossTalk]. *IEEE Spectrum*, 57(9):22–23, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Hig20b] S. Higginbotham. Data-driven power — [Internet of Everything]. *IEEE Spectrum*, 57(8):20, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Hig20c] S. Higginbotham. The IoT’s consent problem — [CrossTalk]. *IEEE Spectrum*, 57(7):20, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Hig20d] S. Higginbotham. Machine learning on the edge — [Internet of Everything]. *IEEE Spectrum*, 57(1):20, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Hig20e] S. Higginbotham. Making sure votes count — [Internet of Everything]. *IEEE Spectrum*, 57(10):18, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Higginbotham:2020:NII

[Hig20f] S. Higginbotham. Network included — [Internet of Everything]. *IEEE Spectrum*, 57(11):22–23, November 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Higginbotham:2020:PVP

[Hig20g] S. Higginbotham. Pandemic vs. privacy — [CrossTalk]. *IEEE Spectrum*, 57(6):20, June 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Higginbotham:2020:WAD

[Hig20h] S. Higginbotham. We all deserve broadband — [Internet of Everything]. *IEEE Spectrum*, 57(5):22, May 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Higginbotham:2020:WHG

[Hig20i] S. Higginbotham. What 5G hype gets wrong — [Internet of Everything]. *IEEE Spectrum*, 57(3):22, March 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Higginbotham:2020:WFL

[Hig20j] S. Higginbotham. Wi-Fi’s long goodbye: Crosstalk. *IEEE Spectrum*, 57(2):19, February 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Higginbotham:2021:C

[Hig21] S. Higginbotham. CrossTalk. *IEEE Spectrum*, 58(3):20–21, March 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Hochman:2022:NYW

[Hoc22] Brian Hochman. 1950s New York was a wiretapper’s dream: Eavesdropping flourished after WW II, aided by legal loopholes, clever hacks, and private ears. *IEEE Spectrum*, 59(8):38–45, August 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Higginbotham:2020:WBR

[HP20] S. Higginbotham and M. Pesce. Who’s behind that robot? — [CrossTalk]. *IEEE Spectrum*, 57(12):24–25, December 2020. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Higginbotham:2021:IEMa

[HP21a] S. Higginbotham and M. Pesce. Internet of Everything: Macro micro. *IEEE Spectrum*, 58(1):18–19, January 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Higginbotham:2021:IEMb

[HP21b] S. Higginbotham and M. Pesce. Internet of Everything: Macro micro. *IEEE Spectrum*, 58(2):20–21, February 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Higginbotham:2021:IEMe

- [HP21c] Stacey Higginbotham and Mark Pesce. Internet of Everything: Macro & micro. *IEEE Spectrum*, 58(7):22–23, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Higginbotham:2021:IEMf

- [HP21d] Stacey Higginbotham and Mark Pesce. Internet of Everything: Macro & micro. *IEEE Spectrum*, 58(8):20–21, August 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Higginbotham:2021:IEMc

- [HP21e] Stacey Higginbotham and Mark Pesce. Internet of Everything: Macro micro. *IEEE Spectrum*, 58(4):20–21, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Higginbotham:2021:IEMd

- [HP21f] Stacey Higginbotham and Mark Pesce. Internet of Everything: Macro micro. *IEEE Spectrum*, 58(6):22–23, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Horowitz:2021:N

- [HPHU21] Brian T. Horowitz, Prachi Patel, Jeremy Hsu, and Lawrence Ulrich. News. *IEEE Spectrum*, 58(5):6–13, May 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Hecht:2022:IUM

- [HPK22] Jeff Hecht, Ned Potter, and Michael Koziol. Inside the Universe Machine: *IEEE Spectrum* explores the Webb Telescope’s groundbreaking engineering. *IEEE Spectrum*, 59(9):22–30, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Holden:2023:GRC

- [HS23] Richard Holden and Elias Stein. Get ready for corporate digital currencies: Facebook failed, but another tech giant might soon pull it off. *IEEE Spectrum*, 60(12):34–39, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Hsu:2020:CAH

- [Hsu20a] J. Hsu. Can AI hiring systems be made antiracist? makers and users of AI-assisted recruiting software reexamine the tools’ development and how they’re used — [news]. *IEEE Spectrum*, 57(9):9–11, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Hsu:2020:DCT

- [Hsu20b] J. Hsu. The dilemma of contact-tracing apps: Can this crucial technology be both effective and private? *IEEE Spectrum*, 57(10):56–59, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [Hsu20c] **Hsu:2020:SHW**
J. Hsu. Smart headphones warn of nearby cars — [journal watch]. *IEEE Spectrum*, 57(2):8, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Hub24] **Hubert:2024:WBS**
Bert Hubert. Why bloat is still software’s biggest vulnerability: a 2024 plea for lean software. *IEEE Spectrum*, 61(4):22–50, April 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Hus24] **Hussain:2024:SSI**
Asim Hussain. Software sucks, but it doesn’t have to: How to make leaner, greener software. *IEEE Spectrum*, 61(4):2, April 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Hut20] **Hutson:2020:MBM**
M. Hutson. The mess behind the models: Too many of the COVID-19 models led policymakers astray. Here’s how tomorrow’s models will get it right. *IEEE Spectrum*, 57(10):30–35, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Hut21] **Hutson:2021:OAI**
M. Hutson. The opacity of artificial intelligence makes it hard to tell when decision-making is biased. *IEEE Spectrum*, 58(2):40–45, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [HVW20] **Haber:2020:MET**
N. Haber, C. Voss, and D. Wall. Making emotions transparent: Google Glass helps autistic kids understand facial expressions through augmented-reality therapy. *IEEE Spectrum*, 57(4):46–52, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Jaf22] **Jaffe:2022:SPD**
Paul Jaffe. Spooky power at a distance: Researchers have beamed substantial amounts of energy at distances over 1 kilometer. *IEEE Spectrum*, 59(6):36–41, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Jag22] **Jagula:2022:BVS**
Dexter Jagula. A boom with a view: The satellite-imaging industry is exploding. Here’s how to take advantage of it. *IEEE Spectrum*, 59(3):38–43, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [JAR24] **Jankovsky:2024:FHS**
Amy Jankovsky, Christine Andrews, and Bill Rogers. Fly the hybrid skies: NASA, GE Aerospace, and Boeing are collaborating on a hybrid-electric airliner. *IEEE Spectrum*, 61

- (2):28–34, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jessen:2021:SSG**
- [Jes21] Gregg H. Jessen. The supercharged semiconductor: Gallium oxide could make powerful radios and switch thousands of volts. *IEEE Spectrum*, 58(4):36–42, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jhunjhunwala:2022:WIC**
- [JJS22] Ashok Jhunjhunwala, Kaushal Kumar Jha, and Anson Sando. Weaning India from coal: How to hasten the country’s transition to solar and wind power. *IEEE Spectrum*, 59(7):40–45, July 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jones:2022:FF**
- [Jon22a] Willie D. Jones. Figure from fiction. *IEEE Spectrum*, 59(6):14–15, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jones:2022:HW**
- [Jon22b] Willie D. Jones. Help not wanted. *IEEE Spectrum*, 59(8):12–13, August 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jones:2022:MRL**
- [Jon22c] Willie D. Jones. Megatruck runs on the lightest gas. *IEEE Spectrum*, 59(7):12–13, July 2022.
- Jones:2022:RAD**
- [Jon22d] Willie D. Jones. Revamping an art deco masterpiece. *IEEE Spectrum*, 59(9):14–15, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jones:2022:RHD**
- [Jon22e] Willie D. Jones. A rich harvest in the desert. *IEEE Spectrum*, 59(11):14–15, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jones:2022:RCP**
- [Jon22f] Willie D. Jones. RoboCup class picture. *IEEE Spectrum*, 59(10):14–15, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jones:2022:RR**
- [Jon22g] Willie D. Jones. A Roomba for rivers. *IEEE Spectrum*, 59(5):14–15, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jones:2022:SNF**
- [Jon22h] Willie D. Jones. Shot of nuclear fusion. *IEEE Spectrum*, 59(12):14–15, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jones:2023:QAL**
- [Jon23a] Willie D. Jones. 5 questions for Andrew Leland: The history of

- assistive technology for the blind. *IEEE Spectrum*, 60(10):21, October 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Jon23g]
- Jones:2023:APT**
- [Jon23b] Willie D. Jones. Amazon plans to take home delivery to new heights. *IEEE Spectrum*, 60(1):16–17, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Jon23h]
- Jones:2023:ABB**
- [Jon23c] Willie D. Jones. Autodidacts build brain-controlled prosthetic. *IEEE Spectrum*, 60(5):16–17, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Jon23i]
- Jones:2023:EFQ**
- [Jon23d] Willie D. Jones. England’s fission quest. *IEEE Spectrum*, 60(9):16–17, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Jon23j]
- Jones:2023:GG**
- [Jon23e] Willie D. Jones. Guided gliders. *IEEE Spectrum*, 60(12):14–15, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Jon23k]
- Jones:2023:ISC**
- [Jon23f] Willie D. Jones. India’s solar center. *IEEE Spectrum*, 60(10):14–15, October 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Jon24]
- Jones:2023:IG**
- Willie D. Jones. Intentional grounding. *IEEE Spectrum*, 60(3):14–15, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jones:2023:JB**
- Willie D. Jones. Juice box. *IEEE Spectrum*, 60(4):14–15, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jones:2023:NDS**
- Willie D. Jones. Neutrino detector to solve Universe’s mysteries. *IEEE Spectrum*, 60(7):14–15, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jones:2023:SF**
- Willie D. Jones. Space flight. *IEEE Spectrum*, 60(11):14–15, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jones:2023:WNW**
- Willie D. Jones. Where no wind turbine has gone before. *IEEE Spectrum*, 60(6):14–15, June 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jones:2024:BMA**
- Andrew Jones. Back to the moon, almost: NASA gears up for the world’s first crewed deep-space mission in 50 years. *IEEE*

- Spectrum*, 61(01):50–53, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [KK21]
- Jordahn:2021:SWS**
- [Jor21] Henrik Jordahn. A skydiver who sews. *IEEE Spectrum*, 58(12):2, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Jones:2021:LDT**
- [JPWB21] Andrew Jones, Prachi Patel, Emily Waltz, and Natasha Bajema. The latest developments in technology, engineering, and science: News. *IEEE Spectrum*, 58(10):6–13, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Koz20a]
- Kastrup:2023:SDA**
- [Kas23] Bernardo Kastrup. Software-defined architecture: Learn system-level design with this dual-CPU computer. *IEEE Spectrum*, 60(11):16–18, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Koz20b]
- Kim:2022:GSK**
- [Kim22] Dong-Won Kim. The godfather of South Korea’s chip industry: Kim Choong-Ki’s engineer’s mind helped make the country a semiconductor superpower. *IEEE Spectrum*, 59(10):32–38, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Koz20c]
- Kovatchev:2021:CAP**
- Boris Kovatchev and Anna Kovatcheva. Creating the artificial pancreas: This wearable device senses blood glucose and administers insulin accordingly. *IEEE Spectrum*, 58(12):38–43, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Koziol:2020:GSS**
- M. Koziol. Geostationary satellites for small jobs. *IEEE Spectrum*, 57(1):48–58, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Koziol:2020:HRH**
- M. Koziol. Helping radios hear themselves — [news]. *IEEE Spectrum*, 57(1):12–13, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Koziol:2020:NES**
- M. Koziol. New encryption strategy passes early test: Ghost polarization harnesses ultrafast fluctuations that occur in a light wave. *IEEE Spectrum*, 57(7):11, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Koziol:2021:SIW**
- [Koz21a] M. Koziol. A small island waits on big data rates: Satellite operators salivate over access to Google’s Equiano cable, but

- St. Helena’s telecom monopoly stands in the way. *IEEE Spectrum*, 58(1):50–51, January 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Koz21b] Michael Koziol. The clash over 5G’s first mile: The wireless industry is divided on Open RAN’s goal to make network components interoperable. *IEEE Spectrum*, 58(5):40–46, May 2021. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Koz23a] Michael Koziol. 5 questions for Anton Troynikov: His company’s creation identifies the art behind AI-generated images. *IEEE Spectrum*, 60(5):23, May 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Koz23b] Michael Koziol. 5 questions for Chris Taylor: Aalyria’s CEO on using lasers to close the digital divide. *IEEE Spectrum*, 60(3):21, March 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Koz23c] Michael Koziol. 5 questions for Molly White: The “Web3 is going just great” creator on why it isn’t. *IEEE Spectrum*, 60(4):21, April 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Koz23d] Michael Koziol. The return of the airship: LTA Research’s Pathfinder 1 will begin test flights in 2023. *IEEE Spectrum*, 60(1):28–29, January 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Koz24a] Michael Koziol. 5 questions for Seth Fraden: How to boot up a new engineering program. *IEEE Spectrum*, 61(4):19, April 2024. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Koz24b] Michael Koziol. 5 questions for Vince Cate: How the AI boom has been a windfall for the island of Anguilla. *IEEE Spectrum*, 61(2):21, February 2024. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Koz24c] Michael Koziol. Wi-fi’s big bet on reliability: The next generation of the wireless tech retackles a common complaint. *IEEE Spectrum*, 61(01):48–49, January 2024. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [KPCA23] Michael Koziol, Prachi Patel, Charles Q. Choi, and Evan Ack-

Koziol:2023:RAL**Koziol:2021:CFM****Koziol:2024:QSF****Koziol:2023:QAT****Koziol:2024:QVC****Koziol:2023:QCT****Koziol:2024:WFB****Koziol:2023:QMW****Koziol:2023:N**

- erman. News. *IEEE Spectrum*, 60(10):5–13, October 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Lau23a]
- Koziol:2021:N**
- [KPG⁺21] Michael Koziol, Ned Potter, Edd Gent, Ludovico Rella, and Prachi Patel. News. *IEEE Spectrum*, 58(12):6–50, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Lau23b]
- Kumagai:2020:RLM**
- [Kum20] Jean Kumagai. The return of the lithium-metal battery. *IEEE Spectrum*, 57(1):30–31, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Lau24]
- Kumagai:2021:MBL**
- [Kum21] J. Kumagai. Momentum builds for lithium-ion battery recycling: The goal is to prevent thousands of tons of spent batteries from going to waste. *IEEE Spectrum*, 58(1):52–53, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Laz21]
- Levi:2022:NCN**
- [LA22] Anthony F. J. Levi and Gabriel Aeppli. The naked chip: No trade secret or hardware trojan can hide from ptychographic X-ray laminography. *IEEE Spectrum*, 59(5):38–43, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Laz22]
- Laursen:2023:N**
- Lucas Laursen. News. *IEEE Spectrum*, 60(8):5–13, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Laursen:2023:NMN**
- Lucas Laursen. No more no service: Cellphones will increasingly text via satellite. *IEEE Spectrum*, 60(1):52–55, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Laursen:2024:POH**
- Lucas Laursen. Paris Olympics host a new event: Algorithmic video surveillance: Security olympics spin-offs are coming for you, and you, and you. *IEEE Spectrum*, 61(01):34–37, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Lazarev:2021:H**
- A. Lazarev. Hands on. *IEEE Spectrum*, 58(1):12–14, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Lazarus:2022:RST**
- Mitchell Lazarus. Radio-spectrum turf wars. *IEEE Spectrum*, 59(7):34–39, July 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- Lau:2020:DSC**
- [LCBH20] J. H. Lau, T. Cohn, T. Baldwin, and A. Hammond. “Deep-speare” crafted Shakespearean verse that few readers could distinguish from the real thing. *IEEE Spectrum*, 57(5):40–53, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Li:2022:HAG**
- [LDO22] Qi Li, Yin Ding, and Jorel Olan. How audio is getting its groove back: Deep learning is delivering the century-old promise of truly realistic sound reproduction. *IEEE Spectrum*, 59(10):46–52, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Lee:2020:SDP**
- [Lee20] P. T. Lee. The software-defined power grid: How software and sensors are bringing century-old grid technology into the modern age. *IEEE Spectrum*, 57(7):40–46, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Levick:2020:RMW**
- [Lev20] E. Levick. A robot is my Wingman. *IEEE Spectrum*, 57(1):32–56, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Levick:2021:SST**
- [Lev21] Ewen Levick. A supercold sapphire ticks more regularly than anything else on the planet: The most precise timekeeper in the world. *IEEE Spectrum*, 58(7):40–46, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Lewis:2020:MHP**
- [Lew20] P. Lewis. Make a hack-proof garage door opener: a new breakout board offers cryptographic security — [hands on]. *IEEE Spectrum*, 57(3):16–18, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Lewis:2023:HFD**
- [Lew23] Pete G. Lewis. Hi-fi DIY ear defense: Lower the volume without muffling sounds. *IEEE Spectrum*, 60(12):16–18, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Liu:2020:AVL**
- [LG20] S. Liu and J. Gaudiot. Autonomous vehicles lite self-driving technologies should start small, go slow. *IEEE Spectrum*, 57(3):36–49, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Levine:2024:UBD**
- [LH24] Sergey Levine and Karol Hausman. Using big data to make robots more capable. *IEEE Spectrum*, 61(2):42–46, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Landreneau:2023:PMS

- [LSM23] John Landreneau, Lauren Schricker, and John MacNeill. Plugging in the Moon: To supply outposts sunk in the lunar night, solar power must come from the South Pole. *IEEE Spectrum*, 60(8):46–49, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Mar20c]

Lucky:2020:BEF

- [Luc20a] R. W. Lucky. Back to the elusive future — [spectral lines]. *IEEE Spectrum*, 57(1):4, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Mar20e]

Lucky:2020:ISR

- [Luc20b] R. W. Lucky. The ingenuity of spies — [reflections]. *IEEE Spectrum*, 57(1):21, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Mar20f]

Marsh:2020:BDP

- [Mar20a] A. Marsh. Born digital — [past forward]. *IEEE Spectrum*, 57(7):48, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Mar20g]

Marsh:2020:CCP

- [Mar20b] A. Marsh. Calling from the cockpit — [past forward]. *IEEE Spectrum*, 57(4):56, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Mar20h]

Marsh:2020:FLO

- A. Marsh. The first laptop in orbit — [past forward]. *IEEE Spectrum*, 57(6):51, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Marsh:2020:FR

- A. Marsh. The first radio. *IEEE Spectrum*, 57(5):56, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Marsh:2020:FU

- A. Marsh. Fun with uranium! *IEEE Spectrum*, 57(2):52, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Marsh:2020:IXR

- A. Marsh. If the X-ray fits — [past forward]. *IEEE Spectrum*, 57(11):52, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Marsh:2020:PRP

- A. Marsh. The Proto-Roomba — [past forward]. *IEEE Spectrum*, 57(3):50, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Marsh:2020:SDS

- A. Marsh. Special delivery by satellite. *IEEE Spectrum*, 57(12):50, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [Mar20i] **Marsh:2020:WLP**
A. Marsh. Weaving light — [past forward]. *IEEE Spectrum*, 57(8):52, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Mar20j] **Marsh:2020:HFC**
Allison Marsh. The hidden figures of Colossus. *IEEE Spectrum*, 57(1):64, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). URL <https://spectrum.ieee.org/tech-history/dawn-of-electronics/the-hidden-figures-behind-bletchley-parks-codebreaking-colossus>. [Mar21f]
- [Mar21a] **Marsh:2021:CRS**
A. Marsh. Catfish, robot, swimmer, spy. *IEEE Spectrum*, 58(3):51, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Mar21g]
- [Mar21b] **Marsh:2021:CC**
A. Marsh. Counting calories. *IEEE Spectrum*, 58(1):56, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Mar21h]
- [Mar21c] **Marsh:2021:PFa**
A. Marsh. Past forward. *IEEE Spectrum*, 58(2):48, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Mar21i]
- [Mar21d] **Marsh:2021:BBT**
Allison Marsh. The black box that’s round and red [past forward]. *IEEE Spectrum*, 58(7):48, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Mar21e]
- Marsh:2021:CHP**
Allison Marsh. Crystal history [past forward]. *IEEE Spectrum*, 58(6):68, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Mar21f]
- Marsh:2021:NRP**
Allison Marsh. The Nazi radio [past forward]. *IEEE Spectrum*, 58(4):56, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Mar21g]
- Marsh:2021:PFb**
Allison Marsh. Past forward. *IEEE Spectrum*, 58(5):56, May 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Mar21h]
- Marsh:2021:PFAa**
Allison Marsh. Past forward: Anthrax by mail. *IEEE Spectrum*, 58(10):64, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Mar21i]
- Marsh:2021:PFEB**
Allison Marsh. Past forward: Electricity’s perilous narrative arc. *IEEE Spectrum*, 58(11):56, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- Marsh:2021:PFW**
- [Mar21j] Allison Marsh. Past forward: It's a wonderful light. *IEEE Spectrum*, 58(12):76, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2021:PFEa**
- [Mar21k] Allison Marsh. Past forward: The electric motor at 200. *IEEE Spectrum*, 58(9):72, September 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2022:PFa**
- [Mar22a] Allison Marsh. Past forward. *IEEE Spectrum*, 59(5):52, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2022:PFb**
- [Mar22b] Allison Marsh. Past forward. *IEEE Spectrum*, 59(6):64, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2022:PFc**
- [Mar22c] Allison Marsh. Past forward. *IEEE Spectrum*, 59(7):48, July 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2022:PFd**
- [Mar22d] Allison Marsh. Past forward. *IEEE Spectrum*, 59(8):48, August 2022. CODEN IEESAM.
- Marsh:2022:PFf**
- [Mar22e] Allison Marsh. Past forward. *IEEE Spectrum*, 59(9):68, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2022:PFg**
- [Mar22f] Allison Marsh. Past forward. *IEEE Spectrum*, 59(10):56, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2022:PFh**
- [Mar22g] Allison Marsh. Past forward. *IEEE Spectrum*, 59(11):48, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2022:PFi**
- [Mar22h] Allison Marsh. Past forward. *IEEE Spectrum*, 59(12):76, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2022:PFE**
- [Mar22i] Allison Marsh. Past forward: Electric hearing. *IEEE Spectrum*, 59(2):48, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2022:PFL**
- [Mar22j] Allison Marsh. Past forward: Lessons from the Little Professor. *IEEE Spectrum*, 59(4):52, ISSN 0018-9235 (print), 1939-9340 (electronic).

- April 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2022:PFO**
- [Mar22k] Allison Marsh. Past forward: Ode to the Envoy. *IEEE Spectrum*, 59(1):64, January 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2022:PFN**
- [Mar22l] Allison Marsh. Past forward: The Nobelist’s first laser. *IEEE Spectrum*, 59(3):68, March 2022. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2023:CCC**
- [Mar23a] Allison Marsh. Computer chess, circa 1920. *IEEE Spectrum*, 60(7):52, July 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2023:HOP**
- [Mar23b] Allison Marsh. History in an object: Past forward. *IEEE Spectrum*, 60(10):52, October 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2023:JWE**
- [Mar23c] Allison Marsh. James Wimshurst’s electrostatic immortality: Little is known about the man, but his iconic generators live on. *IEEE Spectrum*, 60(6):68–70, June 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2023:PFa**
- [Mar23d] Allison Marsh. Past forward. *IEEE Spectrum*, 60(1):64, January 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2023:PFb**
- [Mar23e] Allison Marsh. Past forward. *IEEE Spectrum*, 60(4):56, April 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2023:PFc**
- [Mar23f] Allison Marsh. Past forward. *IEEE Spectrum*, 60(5):56, May 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2023:PFd**
- [Mar23g] Allison Marsh. Past forward. *IEEE Spectrum*, 60(6):68, June 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2023:PFe**
- [Mar23h] Allison Marsh. Past forward. *IEEE Spectrum*, 60(8):53–57, August 2023. CODEN IIESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2023:PFf**
- [Mar23i] Allison Marsh. Past forward. *IEEE Spectrum*, 60

- (11):52, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2023:TME**
- [Mar23j] Allison Marsh. Taking the measure of the earthquake that destroyed Tokyo: a century on, we're good at detecting earthquakes, not so good at protecting against them. *IEEE Spectrum*, 60(9):69–72, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Mary:2023:CAE**
- [Mar23k] L. Mary. 5 conclusion from an automation expert with first-hand knowledge of highway regulation what self-driving cars tell us about AI risks: Missy Cummings. *IEEE Spectrum*, 60(10):30–35, October 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2024:BES**
- [Mar24a] Allison Marsh. Behold the electronic sackbut. *IEEE Spectrum*, 61(2):48, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2024:PF**
- [Mar24b] Allison Marsh. Past forward. *IEEE Spectrum*, 61(3):64, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2024:PFS**
- [Mar24c] Allison Marsh. Past forward: The Scientology machine. *IEEE Spectrum*, 61(4):52, April 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Marsh:2024:STH**
- [Mar24d] Allison Marsh. The sound of two hands clapping. *IEEE Spectrum*, 61(01):64, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- McCray:2020:BJH**
- [McC20] W. P. McCray. Big in Japan: How art, tech, and Pepsico collaborated, then clashed at the 1970 World's Fair. *IEEE Spectrum*, 57(3):40–47, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Mueller:2023:WHT**
- [MD23] Matthias Mueller and Roland Dittmeyer. Wind-to-hydrogen tech goes to sea: Is electrolysis cheaper offshore? A new project will find out. *IEEE Spectrum*, 60(9):24–29, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Moore:2022:N**
- [MDC⁺22] Samuel K. Moore, Dave Ditzel, Charles Q. Choi, Mark Harris, Philip E. Ross, and Evan Ackerman. News. *IEEE Spectrum*, 59(4):5–11, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- Moore:2023:N**
- [MHLC23] Samuel K. Moore, Michelle Hampson, Lucas Laursen, and Rina Diane Caballar. News. *IEEE Spectrum*, 60(6):5–12, June 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Mierse:2022:EMT**
- [Mie22] Markus Mierse. EZ Mechanical TV: a new twist on the oldest type of television display. *IEEE Spectrum*, 59(6):16–18, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Mishra:2023:WWW**
- [Mis23] Umesh K. Mishra. What will win the wide-bandgap wars? *IEEE Spectrum*, 60(4):32–39, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Mitry:2020:RSK**
- [Mit20] M. Mitry. Routers in space: Kepler communications’ CubeSats will create an Internet for other satellites. *IEEE Spectrum*, 57(2):38–43, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Moore:2021:LDT**
- [MJH⁺21] Samuel K. Moore, Dexter Johnson, Mark Harris, Emily Waltz, Prachi Patel, and Michelle Hampson. The latest developments in technology, engineering,
- and science: News. *IEEE Spectrum*, 58(8):5–12, August 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Mckeever:2020:MSM**
- [MJS20] J. Mckeever, D. Jarvis, and M. Strupler. Microsatellites spot mystery methane leaks. *IEEE Spectrum*, 57(11):38–43, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Maclean:2022:EVE**
- [MMP22] Heather L. Maclean, Alexandre Milovanoff, and I. Daniel Posen. The electric vehicle is not enough: To decarbonize road transport we need to complement EVs with bikes, rail, city planning, and alternative energy. *IEEE Spectrum*, 59(11):28–33, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Moore:2020:WHM**
- [Moo20a] S. K. Moore. 4 ways to handle more qubits — [news]. *IEEE Spectrum*, 57(2):9–10, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Moore:2020:CFP**
- [Moo20b] S. K. Moore. Chiplets are the future of processors: Three advances boost performance, cut costs, and save power. *IEEE Spectrum*, 57(5):11–12, May 2020. CODEN IEESAM. ISSN

0018-9235 (print), 1939-9340 (electronic).

Moore:2020:HSR

- [Moo20c] S. K. Moore. How systemic racism destroyed black innovation in the U.S.: Violence and segregation undermined African American inventors throughout the 20th century — [news]. *IEEE Spectrum*, 57(9):6–7, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Moore:2020:NN

- [Moo20d] S. K. Moore. The node is nonsense. *IEEE Spectrum*, 57(8):24–30, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Moore:2020:HCS

- [Moo20e] Samuel K. Moore. Huge chip smashes deep learning’s speed barrier. *IEEE Spectrum*, 57(1):24–27, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Moore:2021:UDG

- [Moo21] S. K. Moore. The ups and downs of gravity energy storage: Startups are pioneering a radical new alternative to batteries for grid storage. *IEEE Spectrum*, 58(1):38–39, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Moore:2022:PP

- [Moo22a] Samuel K. Moore. 3 paths to 3D processors. *IEEE Spectrum*,

59(6):24–29, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Moore:2022:ACC

- [Moo22b] Samuel K. Moore. AI computing comes to memory chips: Samsung will double performance of neural nets with processing-in-memory. *IEEE Spectrum*, 59(1):40–41, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Moore:2022:TWW

- [Moo22c] Samuel K. Moore. The transistor of 2047: What will the device be like on its 100th anniversary? *IEEE Spectrum*, 59(12):38–39, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Moore:2023:QSN

- [Moo23a] Samuel K. Moore. 5 questions for Sam Naffziger: How he drove AMD’s pioneering move to chiplets. *IEEE Spectrum*, 60(7):21, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Moore:2023:DBH

- [Moo23b] Samuel K. Moore. A dark (blue) horse emerges to speed up computing: Avicena’s blue microLEDs are in a race with Ayar Lab’s laser-based system. *IEEE Spectrum*, 60(1):30–31, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- Moore:2024:QJR**
- [Moo24a] Samuel K. Moore. 5 questions for Julien Ryckaert: Why CMOS 2.0 is the next phase of Moore’s Law. *IEEE Spectrum*, 61(3):21, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Moore:2024:CCE**
- [Moo24b] Samuel K. Moore. Chips to compute with encrypted data are coming: Fully homomorphic encryption could make data unhackable. *IEEE Spectrum*, 61(01):38–40, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Moser:2022:RHB**
- [Mos22] Tobias Moser. Restoring hearing with beams of light. *IEEE Spectrum*, 59(9):30–35, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Moore:2022:STY**
- [MS22] Samuel K. Moore and David Schneider. The state of the transistor: In 75 years, it’s become tiny, mighty, ubiquitous, and just plain weird. *IEEE Spectrum*, 59(12):30–31, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Moore:2021:HDL**
- [MSS21] Samuel K. Moore, David Schneider, and Eliza Strickland. How deep learning works: Inside the neural networks that power today’s AI. *IEEE Spectrum*, 58(10):32–33, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Murray:2023:LIB**
- [Mur23] Charles J. Murray. The lithium-ion battery’s long and winding road. *IEEE Spectrum*, 60(8):40–45, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Mercier:2020:PST**
- [MW20] P. Mercier and J. Wang. Powered by sweat: Throw out the batteries: Biofuels will change the future of wearable devices. *IEEE Spectrum*, 57(7):28–33, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Mantooth:2021:VCS**
- [MZR21] Alan Mantooth, Carl-Mikael Zetterling, and Ana Rusu. Venus calling silicon carbide radio: Circuits can take the heat needed to phone home from our hellish sister planet. *IEEE Spectrum*, 58(5):24–30, May 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Namuduri:2023:CSB**
- [NG23] Kamesh Namuduri and Keven Gambold. 3 challenges to solve before air taxis can soar: a Texas consortium is working out a traffic system for eVTOLs. *IEEE Spectrum*, 60

- (8):58–63, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Pal22]
- Nordrum:2020:SDG**
- [Nor20a] A. Nordrum. Storing data in glass: Optical storage media is advancing from CDs and DVDs to small glass squares — [news]. *IEEE Spectrum*, 57(6):10–11, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Pan20]
- Nordrum:2020:TSH**
- [Nor20b] A. Nordrum. Transgenic salmon hits U.S. shelves. *IEEE Spectrum*, 57(1):44–47, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Pat20]
- Nordrum:2020:EDP**
- [NS20] A. Nordrum and E. Strickland. Engineering during a pandemic: 7 CEOs, engineers, and scientists describe how their work has changed in response to COVID-19 — [news]. *IEEE Spectrum*, 57(5):6–7, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Pat22]
- Ong:2020:UCP**
- [Ong20] S. Ong. U.S. cities pilot connected-vehicle tech: Enabling conventional vehicles to communicate could save lives right now — [news]. *IEEE Spectrum*, 57(7):07–09, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Pat23a]
- Palomaki:2022:QDO**
- Peter Palomaki. Quantum dots + OLED = your next TV: Formerly rival technologies will come together in new Samsung displays. *IEEE Spectrum*, 59(1):52–53, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Panwar:2020:BMB**
- S. Panwar. Breaking the millisecond barrier: Robots and self-driving cars will need completely reengineered networks. *IEEE Spectrum*, 57(11):44–49, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Patel:2020:PBS**
- P. Patel. Potassium batteries show promise: Hurdles remain, but potassium could someday make sense for grid storage — [news]. *IEEE Spectrum*, 57(3):11–12, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Patel:2022:CGW**
- Prachi Patel. China’s Green Winter Olympics: a variety of climate-friendly strategies will be on show, along with the athletes. *IEEE Spectrum*, 59(1):44–45, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Patel:2023:BUS**
- Prachi Patel. Building a U.S. semiconductor workforce:

- CHIPS Act-funded new fabs are spawning university programs. *IEEE Spectrum*, 60(6):28–35, June 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Pat23b] Prachi Patel. China’s new breeder reactors may produce more than just watts: They could also make weapons-grade plutonium. *IEEE Spectrum*, 60(1):38–39, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Pat24a] Prachi Patel. Kelp farms make carbon capture a growth industry: Solar-powered systems are already sequestering carbon in the briny deep. *IEEE Spectrum*, 61(01):40–41, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Pat24b] Prachi Patel. Merchant shipping’s nuclear option: Nuclear-powered cargo ships failed decades ago, but small modular reactors could make all the difference. *IEEE Spectrum*, 61(2):36–41, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Pau21] Jon D. Paul. In the twilight of electromechanical encryption, an exceptional machine figured in a major spy scandal. *IEEE Spectrum*, 58(9):32–52, September 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Pau22] Matthew Paulson. A next-gen DIY audio amp: a Web-enabled integrated amp that won’t break the bank. *IEEE Spectrum*, 59(3):16–18, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [PCRC24] Prachi Patel, Rina Diane Caballar, Gwendolyn RAK, and Charles Q. Choi. News. *IEEE Spectrum*, 61(01):7–15, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Per20a] T. S. Perry. Biosensors for on-the-spot tests: Two companies plan to debut new tech for COVID-19 testing by year’s end — [news]. *IEEE Spectrum*, 57(7):09–10, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Per20b] T. S. Perry. Black tech professionals are still paid less than their white colleagues: And women make less than their male colleagues, regardless of racial identity — [spectral lines]. *IEEE Spectrum*, 57(8):4, August 2020. CODEN IEESAM. ISSN 0018-

- 9235 (print), 1939-9340 (electronic).
- [Per20c] T. S. Perry. The father of FinFets: Chenming Hu took transistors into the third dimension to save Moore's Law. *IEEE Spectrum*, 57(5):46–51, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Per20d] T. S. Perry. The post-pandemic tech workplace: Hopes and expectations for the new normal — [departments]. *IEEE Spectrum*, 57(9):19, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Per20e] T. S. Perry. Researchers are using algorithms to tackle the coronavirus test shortage: The scramble to develop new test kits that deliver faster results — [spectral lines]. *IEEE Spectrum*, 57(6):4, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Per20f] T. S. Perry. Rocket recruiting is using AI to get you a job. For free: Its candidate pool is attracting recruiters from small and large companies. *IEEE Spectrum*, 57(9):4, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Per20g] T. S. Perry. Stay-at-home tech's star turn: Even technophobes rely on consumer tech now. *IEEE Spectrum*, 57(9):11–12, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Per20h] T. S. Perry. Take a pay cut and work wherever you want: But should the value of your work depend on where it gets done? — [spectral lines]. *IEEE Spectrum*, 57(11):4, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Per20i] T. S. Perry. Wage discrimination increases in tech: Women lose gains made in 2018 — [careers]. *IEEE Spectrum*, 57(6):17, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Per20j] Tekla S. Perry. AR/VR is this year's hot ticket for jobs: But growth in demand for blockchain developers stutters — [careers]. *IEEE Spectrum*, 57(4):19, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Per20k] Tekla S. Perry. A guardian angel for your car. *IEEE Spectrum*,

- 57(1):54–55, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Per21a]
- Perry:2020:HCD**
- [Per20l] Tekla S. Perry. Here comes driverless ride sharing: Cruise unveils the origin, a fully autonomous SUV designed for app-controlled urban transportation — [spectral lines]. *IEEE Spectrum*, 57(3):4, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Perry:2020:ITD**
- [Per20m] Tekla S. Perry. Is it time to drag tech jobs out of Silicon Valley? — [careers]. *IEEE Spectrum*, 57(2):50, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Perry:2020:JDQ**
- [Per20n] Tekla S. Perry. John Deere’s quest to solve agricultures deep-learning problems — [spectral lines]. *IEEE Spectrum*, 57(2):4, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Per21c]
- Perry:2020:WYC**
- [Per20o] Tekla S. Perry. When you cut, copy, or paste today, thank Larry Tesler: Remembering the computer scientist who revolutionized the user interface — [spectral lines]. *IEEE Spectrum*, 57(4):4, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Per22a]
- Perry:2021:LAA**
- T. S. Perry. Look out for Apple’s AR glasses: With head-up displays, cameras, inertial sensors, and lidar on board, Apple’s augmented-reality glasses could redefine wearables. *IEEE Spectrum*, 58(1):26–54, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Perry:2021:CCW**
- [Per21b] Tekla S. Perry. Conjuror of compression: From WinZips to cat GIFs, Jacob Ziv’s algorithms have been making data disappear and reappear for decades. *IEEE Spectrum*, 58(5):48–53, May 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Perry:2021:TPR**
- [Per21c] Tekla S. Perry. Tech pay rises (almost) everywhere: The great resignation is pushing salaries up. *IEEE Spectrum*, 58(12):17, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Perry:2022:AML**
- [Per22a] Tekla S. Perry. Asad Madni and the lifesaving sensor: His pivot away from defense led to a tiny tuning fork that helped prevent SUV rollovers and plane crashes. *IEEE Spectrum*, 59(5):24–29, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [Per22b] **Perry:2022:BWM**
 Tekla S. Perry. A bitcoin wallet for the masses: Square simplified credit-card transactions. now it wants to build cryptocurrency hardware. *IEEE Spectrum*, 59(1):42–43, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Per22c] **Perry:2022:IAI**
 Tekla S. Perry. Inflation-adjusted income for U.S. engineers drops: Insights from IEEE–USA’s annual salary survey. *IEEE Spectrum*, 59(12):16–17, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Per23] **Perry:2023:MIV**
 Tekla S. Perry. Mr. Internet: Vint Cerf’s 1973 sketch kicked off five decades of improving and evangelizing what we now know as the Internet. *IEEE Spectrum*, 60(5):24–31, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Pes20a] **Pesce:2020:BTV**
 M. Pesce. Being there, virtually — [macro micro]. *IEEE Spectrum*, 57(8):21, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Pes20b] **Pesce:2020:CSI**
 M. Pesce. Certifiably secure IoT — [macro micro]. *IEEE Spectrum*, 57(10):19, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Pes20c] **Pesce:2020:CTM**
 M. Pesce. The complacency trap — [macro micro]. *IEEE Spectrum*, 57(3):23, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Pes20d] **Pesce:2020:BUC**
 M. Pesce. Not business as usual — [CrossTalk]. *IEEE Spectrum*, 57(6):21, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Pes20e] **Pesce:2020:PTC**
 M. Pesce. Privacy in the time of COVID-19. *IEEE Spectrum*, 57(5):23, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Pes20f] **Pesce:2020:SSC**
 M. Pesce. Spidey senses — [CrossTalk]. *IEEE Spectrum*, 57(7):21, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Pes21a] **Pesce:2021:PPE**
 M. Pesce. Peering into the pandemic end game: Before COVID 19 fades, we’ll see a flurry of advances in contact tracing, cloud computing, surveillance, and online gaming. *IEEE Spectrum*, 58(1):22–25, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [Pes21b] **Pesce:2021:BAM** Mark Pesce. Bricked by age: Manufacturers should supply the software to keep things working indefinitely. *IEEE Spectrum*, 58(10):22, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [PN20]
- [Pes22] **Pesce:2022:MM** Mark Pesce. Macro & micro. *IEEE Spectrum*, 59(1):24, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Pom21]
- [PK20] **Palomaki:2020:SQD** P. Palomaki and S. Keuleyan. Snapshots by quantum dots: Look out, CMOS image sensors. There's a new kid in camera-town. *IEEE Spectrum*, 57(3):24–29, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Pot20a]
- [PLUM23] **Pepitone:2023:N** Julianne Pepitone, Lucas Laursen, Lawrence Ulrich, and Samuel K. Moore. News. *IEEE Spectrum*, 60(12):5–12, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Pot20b]
- [PMPG23] **Patel:2023:N** Prachi Patel, Samuel K. Moore, Ned Potter, and Edd Gent. News. *IEEE Spectrum*, 60(4):5–13, April 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Pou22]
- Parisa:2020:ACS** Z. Parisa and M. Nova. This AI can see the forest and the trees. *IEEE Spectrum*, 57(8):32–37, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Pomazov:2021:H** E. Pomazov. Hands on. *IEEE Spectrum*, 58(2):14–16, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Potter:2020:MHP** N. Potter. A Mars helicopter preps for launch: The first drone to fly on another planet will hitch a ride on NASA's Perseverance rover — [news]. *IEEE Spectrum*, 57(7):06–07, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Potter:2020:MBP** N. Potter. May the best personal flyer win: The \$1 million GoFly Prize has yet to be claimed — [news]. *IEEE Spectrum*, 57(4):6–7, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Poulakis:2022:MST** Marios Poulakis. 6G's metamaterials solution: There's plenty of bandwidth available if we use reconfigurable intelligent surfaces. *IEEE Spectrum*, 59(11):40–45, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [PPUS22] Prachi Patel, Ned Potter, Lawrence Ulrich, and Matthew S. Smith. News. *IEEE Spectrum*, 59(7):5–11, July 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Pre20] K. Pretz. Using modeling to understand how COVID-19 preventive measures work: Washing hands, wearing masks: Does it help? — [spectral lines]. *IEEE Spectrum*, 57(10):4, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Pri21] D. Price. Breakthrough Listen is scanning more of space than ever to try to find intelligent life. *IEEE Spectrum*, 58(2):34–39, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [PRR23] James L. Pelkey, Loring G. Robbins, and Andrew L. Russell. The early Internet’s do-or-die moments: a handful of demos shaped today’s networked world. *IEEE Spectrum*, 60(5):46–52, May 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [PSD22] Yiannis Psaras, Jorge M. Soares, and David Dias. To the Interplanetary File System and beyond!: Peer-to-peer file sharing would make the Internet far more efficient. *IEEE Spectrum*, 59(11):34–39, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Rab22] Jean Rabault. Tracking Arctic ice: an inexpensive sensor package gets data back despite harsh conditions. *IEEE Spectrum*, 59(4):14–16, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Rad20] I. Radu. Atom-thick transistors. *IEEE Spectrum*, 57(2):44–49, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Rae20] A. Rae. This blimp flies on buoyancy alone: the Phoenix turns up-and-down motion into thrust. *IEEE Spectrum*, 57(7):34–39, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Raf20a] M. V. Rafter. Traffic Institute to review yellow-light timing — [news]. *IEEE Spectrum*, 57(1):8–10, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [Raf20b] **Rafter:2020:WFG**
M. V. Rafter. Wanted: a fallback for GPS: The U.S. government seeks tech that could step in if its global satellite fleet were to fail — [news]. *IEEE Spectrum*, 57(5):9–10, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Rak24] **Rak:2024:IHL**
Gwendolyn Rak. Intel hopes to leapfrog its competitors: The chipmaker bets on new transistors, power-delivery tech, and a nascent foundry business. *IEEE Spectrum*, 61(01):32–56, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ras20a] **Rashid:2020:FED**
F. Y. Rashid. The fight over encrypted DNS — [news]. *IEEE Spectrum*, 57(1):11–12, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ras20b] **Rashid:2020:RCC**
F. Y. Rashid. The rise of confidential computing: Big tech companies are adopting a new security model to protect data while it’s in use — [news]. *IEEE Spectrum*, 57(6):8–9, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [RCAP23] **Rao:2023:N**
Rahul Rao, Charles Q Choi, Evan Ackerman, and Prachi Patel. News. *IEEE Spectrum*, 60(3):5–12, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Red20] **Redd:2020:BSB**
N. T. Redd. Bringing satellites back from the dead: Mission extension vehicles give defunct spacecraft a new lease on life — [news]. *IEEE Spectrum*, 57(8):6–7, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Reg23] **Regan:2023:WPM**
Matthew Regan. When Pac-Man met Turing: The game runs on an emulated 6502 CPU. *IEEE Spectrum*, 60(6):16–18, June 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [RG20] **Russ:2020:WHP**
S. H. Russ and J. Gatlin. Ways to hack a printed circuit board: PCB production is an underappreciated vulnerability in the global supply chain. *IEEE Spectrum*, 57(9):38–43, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [RHBM22] **Rezvani:2022:LRS**
Behrooz Rezvani, Babak Hasibi, Fredrik Brännström, and Majid Manteghi. Letting robocars see around corners: Using several bands of radar at once can give cars a kind of second sight. *IEEE Spectrum*, 59

- (2):36–41, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Ros22a]
- [RK22] **Radosavljevic:2022:TML**
Marko Radosavljevic and Jack Kavalieros. Taking Moore’s Law to new heights: When transistors can’t get any smaller, the only direction is up. *IEEE Spectrum*, 59(12):32–37, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ros20a] **Ross:2020:FBM**
P. E. Ross. Flying beyond Mach 5 is back, decades after the original need-for-speed arms race ended: Going hypersonic. *IEEE Spectrum*, 57(12):32–37, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Ros22c]
- [Ros20b] **Ross:2020:PSM**
P. E. Ross. Putting sirens on mute: Noise-canceling smart windows filter out street sounds — [news]. *IEEE Spectrum*, 57(9):8–9, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Ros22d]
- [Ros21] **Ross:2021:STR**
P. E. Ross. Supersonic travel returns: Boom’s XB-1 test aircraft may usher in faster-than-sound commercial flight. *IEEE Spectrum*, 58(1):40–41, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Ros22e]
- Rosenberg:2022:HPA**
Louis Rosenberg. How a parachute accident helped jump-start augmented reality: In 1992, hardware for the first interactive AR system literally fell from the skies. *IEEE Spectrum*, 59(6):42–47, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Rosezky:2022:DGR**
Matthias Rosezky. DIY gamma-ray spectroscopy: But beware a glitch in the popular Pi Pico microcontroller. *IEEE Spectrum*, 59(7):14–16, July 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Ross:2022:BST**
Philip E. Ross. Brakes that slam themselves: Automatic emergency braking will become standard in Europe. *IEEE Spectrum*, 59(1):32–33, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Ross:2022:FPP**
Philip E. Ross. Flying pallets without pilots: a drone startup will test a radical new vision of long-range cargo transport in Europe. *IEEE Spectrum*, 59(1):30–31, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Ross:2022:STR**
Philip E. Ross. Schrödinger’s tardigrade: Have researchers

- quantum-entangled hardy critters? *IEEE Spectrum*, 59(2):19, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ros23a] Philip E. Ross. 5 questions for Missy Cummings: The former fighter pilot on why autonomous vehicles are so risky. *IEEE Spectrum*, 60(6):21, June 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Ros23b] Philip E. Ross. Economics drives a ray-gun resurgence: Lasers, cheaper by the shot, should work well against drones and cruise missiles. *IEEE Spectrum*, 60(1):40–41, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [RPC+23] Philip E. Ross, Prachi Patel, Charles Q. Choi, Michelle Hampson, Edd Gent, Margo Anderson, and Tekla S. Perry. News. *IEEE Spectrum*, 60(7):6–13, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [RS23] Barath Raghavan and Bruce Schneier. A bold new plan for preserving online privacy and security: Decoupling our identities from our data and actions could safeguard our secrets in the cloud. *IEEE Spectrum*, 60(12):22–29, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [RZ21] S. Rao and L. Zhang. The algorithms that make Instacart roll: How machine learning and other tech tools guide your groceries from store to doorstep. *IEEE Spectrum*, 58(3):36–42, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sac20] D. Sachan. Profile: Blessin Varkey: Creating tech for students with disabilities — [careers]. *IEEE Spectrum*, 57(7):17, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sar20] M. Sarnoff. 8 bits, 6 chips: The Amethyst home computer is surprisingly capable — [hands on]. *IEEE Spectrum*, 57(4):16–18, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [SAS+21] David Schneider, Evan Ackerman, Eliza Strickland, Lawrence Ulrich, and Rahul Rao. The latest developments in technology, engineering, and science: News. *IEEE Spectrum*, 58(9):7–15, September 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Ross:2023:QMC

Ross:2023:EDR

Ross:2023:N

Raghavan:2023:BNP

Rao:2021:AMI

Sachan:2020:PBV

Sarnoff:2020:BCA

Schneider:2021:LDT

- [SB22a] **Smil:2022:CEM**
 Vaclav Smil and Rodney Brooks. COVID: Excess mortalities two years later: The death toll is increasingly comparable to that of the 1918–1920 flu. *IEEE Spectrum*, 59(5):20–22, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [SB22b] **Smith:2022:GMMA**
 Matthew S. Smith and Rodney Brooks. Gizmo: Myth and machine. *IEEE Spectrum*, 59(1):22–23, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [SB22c] **Smith:2022:GMMb**
 Matthew S. Smith and Rodney Brooks. Gizmo: Myth and machine. *IEEE Spectrum*, 59(2):22–23, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [SC23] **Schloemer:2023:SPC**
 Tracy H. Schloemer and Daniel N. Congreve. Smashing photons: Changing the color of light supercharges solar energy, 3D printing, and night vision. *IEEE Spectrum*, 60(10):44–49, October 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sca22] **Scalfani:2022:NWS**
 Charles Scalfani. A new way to squash bugs: Functional programming is hard to learn but yields fewer nasty surprises. *IEEE Spectrum*, 59(12):40–45, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sch20a] **Schneider:2020:DDC**
 D. Schneider. The delivery drones are coming. *IEEE Spectrum*, 57(1):28–29, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sch20b] **Schneider:2020:DAI**
 D. Schneider. A DIY audio induction loop: Here’s a simple way to transmit audio to people who wear T-coil-equipped hearing aids — [hands on]. *IEEE Spectrum*, 57(2):14–16, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sch20c] **Schneider:2020:PDB**
 D. Schneider. Pedaling out of the dark: Build a double-backup home power supply — [hands on]. *IEEE Spectrum*, 57(11):16–18, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sch20d] **Schneider:2020:ZBL**
 D. Schneider. The Zoom Box: Look people in the eye while videoconferencing — [hands on]. *IEEE Spectrum*, 57(8):14–16, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [Sch21a] **Schneider:2021:DLS**
D. Schneider. Deep learning at the speed of light: Light-matter bets that optical computing can solve AI's efficiency problem. *IEEE Spectrum*, 58(1):28–29, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sch21b] **Schneider:2021:WNO**
D. Schneider. Where no one has seen before: The James Webb Space Telescope will let us see back almost to the Big Bang. *IEEE Spectrum*, 58(1):30–31, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sch21c] **Schneider:2021:H**
David Schneider. Hands on. *IEEE Spectrum*, 58(4):14–16, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sch21d] **Schneider:2021:IBE**
David Schneider. An instant e-bike: Electrifying a bike can be electrifyingly easy. *IEEE Spectrum*, 58(9):18–20, September 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sch21e] **Schneider:2021:MTG**
David Schneider. Mach 2, take 2: Grappling again with the promise and peril of supersonic airliners. *IEEE Spectrum*, 58(11):26–31, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sch22a] **Schneider:2022:BSW**
David Schneider. A barometer for space weather: Detect solar flares and gamma-ray bursts for less than \$100. *IEEE Spectrum*, 59(2):16–18, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sch22b] **Schneider:2022:CDW**
David Schneider. Chasing downed weather balloons: Hunt them with a cheap SDR receiver and a homemade antenna. *IEEE Spectrum*, 59(9):16–18, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sch22c] **Schneider:2022:DSM**
David Schneider. Deep-sea mining stirs up muddy questions: A controversial pilot program will collect metal-rich nodules from the ocean floor. *IEEE Spectrum*, 59(1):56–57, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sch22d] **Schneider:2022:DMS**
David Schneider. DIY magnetometer: Search for buried treasure for less than \$100. *IEEE Spectrum*, 59(5):16–18, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Schneider:2022:EEU

[Sch22e] David Schneider. The Exascale Era is upon us: The Frontier supercomputer may be the first to reach 1,000,000,000,000,000,000 operations per second. *IEEE Spectrum*, 59(1):34–35, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Schneider:2023:DQR

[Sch23a] David Schneider. Detect quakes with raspberry shakes: a raspberry pi-based seismometer can detect even distant earthquakes. *IEEE Spectrum*, 60(10):16–18, October 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Schneider:2023:RFE

[Sch23b] David Schneider. A retro fuel-economy computer: This Arduino-based project outputs MPGs on a vintage dashboard gauge. *IEEE Spectrum*, 60(3):16–18, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Schneider:2023:RYO

[Sch23c] David Schneider. Roll your own all-sky camera: Use Raspberry Pi hardware to capture mesmerizing time-lapse images of the heavens. *IEEE Spectrum*, 60(7):16–18, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Schroeder:2024:WIW

[Sch24] Karl Schroeder. What if we built a really big computer? *IEEE Spectrum*, 61(3):34–43, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Strickland:2022:N

[SCMP22] Eliza Strickland, Charles Q. Choi, Samuel K. Moore, and Prachi Patel. News. *IEEE Spectrum*, 59(8):5–12, August 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Smith:2023:N

[SCPC23] Matthew S. Smith, Rina Diane Caballar, Prachi Patel, and Charles Q. Choi. News. *IEEE Spectrum*, 60(1):8–15, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Smith:2022:N

[SCPG22] Craig S. Smith, Charles Q. Choi, Prachi Patel, and Edd Gent. News. *IEEE Spectrum*, 59(11):5–12, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Scudellari:2020:QDT

[Scu20a] M. Scudellari. Quantum-dot tattoos store vaccine history — [news]. *IEEE Spectrum*, 57(2):11, February 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [Scu20b] **Scudellari:2020:RBA**
M. Scudellari. Researchers are betting that AI and automation can cut drug discovery from five years to six months: Automating antivirals. *IEEE Spectrum*, 57(10):44–49, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [SG22] **Strickland:2022:FWN**
Eliza Strickland and Maria Gallucci. First win for the neuro-rights campaign: Chile plans to regulate all neurotech and ban the sale of brain data. *IEEE Spectrum*, 59(1):26–58, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [SGS⁺23] **Strickland:2023:N**
Eliza Strickland, Edd Gent, Zoltán Spakovszky, Mark Harris, and Michael Koziol. News. *IEEE Spectrum*, 60(9):1–8, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [SH22a] **Strickland:2022:DD**
Eliza Strickland and Mark Harris. Dynamic duo. *IEEE Spectrum*, 59(3):2, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [SH22b] **Strickland:2022:WHW**
Eliza Strickland and Mark Harris. What happens when a bionic body part becomes obsolete?: Blind people with second sight’s retinal implants found out. *IEEE Spectrum*, 59(3):24–31, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Sha23] **Shapiro:2023:PMI**
Scott J. Shapiro. Patch me if you can: How a New Jersey teenager’s malware threatened the entire Internet. *IEEE Spectrum*, 60(6):42–48, June 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [SHD20] **Stewart:2020:HCT**
G. Stewart, K. Heusden, and G. A. Dumont. How control theory can help us control Covid-19. *IEEE Spectrum*, 57(6):22–29, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [She24] **Shestakofsky:2024:MRB**
Benjamin Shestakofsky. The messy reality behind a Silicon Valley unicorn. *IEEE Spectrum*, 61(4):44–49, April 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Shi22] **Shirriff:2022:VTF**
Ken Shirriff. The vacuum tube’s forgotten rival: Magnetic amplifiers, the alt-tech of the Third Reich, lasted into the Internet era. *IEEE Spectrum*, 59(4):44–49, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [Sla21] Patrick Slade. DIY activity tracker: Count your calories more accurately than a smartphone. *IEEE Spectrum*, 58(10):14–16, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [SMD20] S. Sen, S. Maity, and D. Das. The body is the network: To safeguard sensitive data, turn flesh and tissue into a secure wireless channel. *IEEE Spectrum*, 57(12):44–49, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Smi20a] V. Smil. Building the Great Pyramid — CrossTalk. *IEEE Spectrum*, 57(6):18–19, June 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Smi20b] V. Smil. Claiming the Nile — [CrossTalk]. *IEEE Spectrum*, 57(11):20–21, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Smi20c] V. Smil. Cranes (the machines, not birds) — [CrossTalk]. *IEEE Spectrum*, 57(8):18–19, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Smi20d] V. Smil. Energiewende, 20 years later — [CrossTalk]. *IEEE Spectrum*, 57(12):22–23, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Smi20e] V. Smil. (Not) drinking wine — [CrossTalk]. *IEEE Spectrum*, 57(4):20–21, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Smi20f] V. Smil. Peak oil: a retrospective — [CrossTalk]. *IEEE Spectrum*, 57(5):20–21, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Smi20g] V. Smil. Why chicken rules — [CrossTalk]. *IEEE Spectrum*, 57(1):18–19, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Smi20h] V. Smil. The year is 118 A.A.C. (after air conditioning) — [CrossTalk]. *IEEE Spectrum*, 57(7):18–19, July 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Smi21a] V. Smil. CrossTalk. *IEEE Spectrum*, 58(3):18–19, March 2021. CODEN IEESAM. ISSN 0018-

Slade:2021:DAT**Smil:2020:EYL****Sen:2020:BNS****Smil:2020:DWC****Smil:2020:BGP****Smil:2020:POR****Smil:2020:CNC****Smil:2020:WCR****Smil:2020:CMB****Smil:2020:YCA****Smil:2021:C**

- 9235 (print), 1939-9340 (electronic).
- Smil:2021:NDLa**
- [Smi21b] V. Smil. Numbers don't lie. *IEEE Spectrum*, 58(1):16–17, January 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Smil:2021:NDLb**
- [Smi21c] V. Smil. Numbers don't lie. *IEEE Spectrum*, 58(2):18–19, February 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Smil:2021:BCI**
- [Smi21d] Vaclav Smil. A boat can indeed be too long and too skinny: The length-to-beam ratio still has practical limits: Numbers don't lie. *IEEE Spectrum*, 58(8):18–19, August 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Smil:2021:EFB**
- [Smi21e] Vaclav Smil. Electric flight: Batteries are nowhere near able to sustain wide-body airliners over flights measuring in the thousands of kilometers: Numbers don't lie. *IEEE Spectrum*, 58(11):22–23, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Smil:2021:HHO**
- [Smi21f] Vaclav Smil. The hyperloop is hyper old: Elon Musk merely renamed a 200-year-old dream: Numbers don't lie. *IEEE Spectrum*, 58(12):18–19, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Smil:2021:NDLc**
- [Smi21g] Vaclav Smil. Numbers don't lie. *IEEE Spectrum*, 58(4):18–19, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Smil:2021:NDLd**
- [Smi21h] Vaclav Smil. Numbers don't lie. *IEEE Spectrum*, 58(6):20–21, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Smil:2021:NDLe**
- [Smi21i] Vaclav Smil. Numbers don't lie. *IEEE Spectrum*, 58(7):20–21, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Smil:2021:SAG**
- [Smi21j] Vaclav Smil. SUVs ascendant: Growth in SUV use could more than offset carbon savings from electric vehicles: Numbers don't lie. *IEEE Spectrum*, 58(9):22–23, September 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Smil:2021:WGW**
- [Smi21k] Vaclav Smil. What goes up : World population growth has slowed, and some countries are actually declining: Numbers don't lie. *IEEE Spectrum*, 58

(10):18–19, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Smith:2021:RSP

[Smi21l] Alvy Ray Smith. The real story of Pixar: How a bad hardware company turned itself into a great movie studio. *IEEE Spectrum*, 58(11):44–49, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Smith:2021:WLS

[Smi21m] Alvy Ray Smith. What a long, strange trip it’s been. *IEEE Spectrum*, 58(11):2, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Smith:2021:IAQ

[Smi21n] Matthew S. Smith. The indoor air-quality paradox: Easy to measure tough to fix. *IEEE Spectrum*, 58(10):20, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Smil:2022:AAE

[Smi22a] Vaclav Smil. Africa’s access to electricity: In an era of plenty, one continent still lags: Numbers don’t lie. *IEEE Spectrum*, 59(3):20–21, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Smil:2022:CFP

[Smi22b] Vaclav Smil. The carbon footprint of plate glass: The en-

ergy required is not transparent: Numbers don’t lie. *IEEE Spectrum*, 59(4):18–19, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Smil:2022:DAC

[Smi22c] Vaclav Smil. Decarbonization algebra: The COP26 calls for impossibly steep cuts in carbon emissions: Numbers don’t lie. *IEEE Spectrum*, 59(2):20–21, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Smil:2022:DOC

[Smi22d] Vaclav Smil. Decarbonization is our costliest challenge: It has no clear beginning or end, and it affects every aspect of life. *IEEE Spectrum*, 59(10):22–23, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Smil:2022:EDP

[Smi22e] Vaclav Smil. Extreme designs: From the pyramids to the Hummer, more is often less: Numbers don’t lie. *IEEE Spectrum*, 59(1):20–21, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Smil:2022:FFW

[Smi22f] Vaclav Smil. Fuel, food, and war: Energy and grain are part and parcel. *IEEE Spectrum*, 59(9):20–21, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [Smi22g] Vaclav Smil. Hydropower, the forgotten renewable: This still-mighty source of electricity has been unfairly relegated to the scrap heap. *IEEE Spectrum*, 59(11):20–21, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). **Smil:2022:HFR**
- [Smi22h] Vaclav Smil. Meat-eating is as human as apple pie: We evolved to eat meat; the world will not turn vegan. *IEEE Spectrum*, 59(8):18–19, August 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). **Smil:2022:MEH**
- [Smi22i] Vaclav Smil. Numbers don't lie: a Moore's Law-for Bombs: the rising power of destructiveness is, unfortunately, the most impressive metric of modern technology. *IEEE Spectrum*, 59(7):18, July 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). **Smil:2022:NDLb**
- [Smi22j] Vaclav Smil. Numbers don't lie: Electricity's slow rollout: The spread of electricity has followed a protracted and characteristic pattern — slow, then fast, then slow again. *IEEE Spectrum*, 59(6):20–21, June 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). **Smil:2022:NDLa**
- [Smi22k] Vaclav Smil. Waiting for super-batteries: They still can't match the energy density of liquid fuel. *IEEE Spectrum*, 59(12):21, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). **Smil:2022:WST**
- [Smi22l] Matthew S. Smith. Gizmo: a laptop that's fit to be fixed: Dell's concept responds to the right to repair movement. *IEEE Spectrum*, 59(3):22, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). **Smith:2022:GLT**
- [Smi22m] Matthew S. Smith. The spectacular collapse of cryptokit-ties. *IEEE Spectrum*, 59(9):42–47, September 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). **Smith:2022:SCC**
- [Smi23a] Craig S. Smith. Baidu and Geely will mass-produce an autonomous EV: The Chinese tech giants aim for a fully self-driving car. *IEEE Spectrum*, 60(1):36–37, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). **Smith:2023:BGW**
- [Smi23b] Matthew S. Smith. The miracle of flight simulator: It was a wonder that the original video game worked at all. Decades later, it still entralls **Smith:2023:MFS**

- millions. *IEEE Spectrum*, 60 (6):36–41, June 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [SP21c]
- Smith:2023:GVD**
- [Smi23c] Peter Rey Smith. Guided by voices: Digital voiceprinting may not be ready for the courts. *IEEE Spectrum*, 60 (7):28–33, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Ste21]
- Someya:2021:PSD**
- [Som21] Takao Someya. Put down that smartphone: The display is on your skin: The screen is the last frontier in stretchable, bendable, body-conforming electronics. *IEEE Spectrum*, 58(6):38–43, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Sto20]
- Smith:2021:GMMa**
- [SP21a] Matthew S. Smith and Mark Pesce. Gizmo: Macro & micro. *IEEE Spectrum*, 58(9):24–25, September 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Sto23]
- Smith:2021:GMMb**
- [SP21b] Matthew S. Smith and Mark Pesce. Gizmo: Macro & micro. *IEEE Spectrum*, 58(11):24–25, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Str20a]
- Smith:2021:GMMc**
- Matthew S. Smith and Mark Pesce. Gizmo: Macro & micro. *IEEE Spectrum*, 58(12):20–21, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Stenfatt:2021:FCA**
- Mads Stenfatt. The first crowd-funded astronaut. *IEEE Spectrum*, 58(12):22–29, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Stockton:2020:CTB**
- N. Stockton. China takes blockchain national: The state-sponsored platform will launch in 100 cities. *IEEE Spectrum*, 57(4):11–12, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Stone:2023:DRB**
- Peter Stone. Designing robots to best World Cup winners has inspired generations of roboticians. *IEEE Spectrum*, 60(7):40–49, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- Strickland:2020:FTD**
- E. Strickland. Facebook takes on deepfakes. *IEEE Spectrum*, 57(1):40–57, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [Str20b] **Strickland:2020:HCA**
E. Strickland. Health care algorithms show racial bias — [news]. *IEEE Spectrum*, 57(1):6–7, January 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Str21] **Strickland:2021:TPU**
Eliza Strickland. The turbulent past and uncertain future of AI: Is there a way out of AI’s boom-and-bust cycle? *IEEE Spectrum*, 58(10):26–31, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Str22a] **Strickland:2022:ANA**
Eliza Strickland. Andrew Ng, AI minimalist: The machine-learning pioneer says small is the new big. *IEEE Spectrum*, 59(4):22–50, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Str22b] **Strickland:2022:BNS**
Eliza Strickland. A bionic nose to smell the roses again: Covid survivors drive demand for a neuroprosthetic nose. *IEEE Spectrum*, 59(11):22–27, November 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Str23] **Strickland:2023:QLT**
Eliza Strickland. 5 questions for Luke Tan: Why his startup is producing green hydrogen for a distillery. *IEEE Spectrum*, 60(11):21, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Str24a] **Strickland:2024:QJB**
Eliza Strickland. 5 questions for Joy Buolamwini: Why AI should move slow and fix things. *IEEE Spectrum*, 61(01):22, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Str24b] **Strickland:2024:EYL**
Eliza Strickland. This election year, look for content credentials: Media organizations combat deepfakes and disinformation with digital manifests. *IEEE Spectrum*, 61(01):24–27, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Svr23] **Svrcek:2023:OGM**
Matt Svrcek. The omnivorous generator: Mainspring’s linear generator can run on almost any fuel. *IEEE Spectrum*, 60(3):34–46, March 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [SZ20] **Strickland:2020:CTU**
E. Strickland and G. Zorpette. COVID-19 has taught US that foresight and tech are a winning combination. *IEEE Spectrum*, 57(10):20–23, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [SZ23] **Strickland:2023:AAM**
Eliza Strickland and Glenn Zorpette. The AI apocalypse matrix. *IEEE Spectrum*, 60(8):38–39, August 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [SZCB24] **Smith:2024:N**
Matthew Smith, Glenn Zorpette, Charles Q. Choi, and John Boyd. News. *IEEE Spectrum*, 61(2):5–13, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Szk21] **Szkandera:2021:BYO**
Filip Szkandera. Build your own RISC-V CPU: Even homebrew processors can use hot new tech. *IEEE Spectrum*, 58(6):16–18, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [TB21] **Tabrizian:2021:HAN**
Roozbeh Tabrizian and Swarup Bhunia. The hidden authenticators: Nanometer-scale electromechanical tags could thwart counterfeiters. *IEEE Spectrum*, 58(6):32–37, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Tei23] **Teisberg:2023:SSI**
Thomas Teisberg. Seeing secrets in the ice: a drone-based radar looks for the future of climate change. *IEEE Spectrum*, 60(10):22–29, October 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Tem20] **Temiz:2020:LMV**
Y. Temiz. The Lego microscope: a valuable lab tool began as a DIY project — [hands on]. *IEEE Spectrum*, 57(5):16–18, May 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [TGLM21] **Thompson:2021:DL D**
Neil C. Thompson, Kristjan Greenewald, Keeheon Lee, and Gabriel F. Manso. Deep learning’s diminishing returns: The cost of improvement is becoming unsustainable. *IEEE Spectrum*, 58(10):50–55, October 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Tho21a] **Thomas:2021:PFT**
Dale Thomas. Phone-free texting: HamMessenger makes it easy to SMS over VHF. *IEEE Spectrum*, 58(12):14–16, December 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Tho21b] **Thomas:2021:TLT**
Edd Thomas. Turning letters into tones: a century ago, the optophone allowed blind people to hear the printed word. *IEEE Spectrum*, 58(7):34–39, July 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Tow21] **Towfiq:2021:ICS**
Bayan Towfiq. The Internet’s coming sunny day: Subspace’s

- network provides a weather map and dedicated backbone for faster traffic. *IEEE Spectrum*, 58 (11):32–37, November 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Ulrich:2020:CCC]
- [Ulrich:2020:CCC] L. Ulrich. Curbside cab charging: Wireless power tech keeps EVs on the go — [news]. *IEEE Spectrum*, 57(10):8–9, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Ulr20a]
- [Ulrich:2020:GBB] L. Ulrich. GM bets big on batteries: a new \$ 2.3 billion plant cranks out Ultium cells to power a future line of electric vehicles. *IEEE Spectrum*, 57(12):26–31, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Ulr20b]
- [Ulrich:2020:TTC] L. Ulrich. Top 10 tech cars: The scramble for electric dominance has begun. *IEEE Spectrum*, 57(4):30–39, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Ulrich:2021:TTA]
- [Ulrich:2021:TTA] Lawrence Ulrich. The trend toward all-electric is accelerating. *IEEE Spectrum*, 58 (4):44–53, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Ul21]
- [Ulrich:2022:TIL] Lawrence Ulrich. Tesla inside: The Land Rover Defender gets an electric makeover. *IEEE Spectrum*, 59(5):44–49, May 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Ul22]
- [Uskova:2021:RFR] Olga Uskova. On Russian farms, the robotic revolution has begun: Hundreds of aftermarket AIs are harvesting grain. *IEEE Spectrum*, 58(9):40–45, September 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Usk21]
- [Vaidya:2023:CLA] Jaideep Vaidya and Hafiz Asif. A critical look at AI-generate software: Coding with the new AI tools is both irresistible and dangerous. *IEEE Spectrum*, 60 (7):34–39, July 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [VA23]
- [VanSchoot:2023:MLM] Jan Van Schoot. The Moore’s Law machine: The next trick to tinier transistors is high-numerical-aperture EUV lithography. *IEEE Spectrum*, 60(9):44–48, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). [Van23]
- [Versluis:2020:QCS] R. Versluis and C. Hagen. Quantum computers scale up: Constructing a universal quantum

computer with a large number of qubits will be hard but not impossible. *IEEE Spectrum*, 57(4):24–29, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Waltz:2020:TTI

- [WAC⁺20] E. Waltz, E. Ackerman, C. Q. Choi, P. Dhar, and M. Dumiak. Take a tour inside a cell: Advances in microscopy let researchers give immersive VR trips through brain cells — [news]. *IEEE Spectrum*, 57(12):8–14, December 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Waltz:2020:ATB

- [Wal20a] E. Waltz. AI takes its best shot: What AI can and can't do in the race for a coronavirus vaccine — [vaccine]. *IEEE Spectrum*, 57(10):24–67, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Waltz:2020:BDJ

- [Wal20b] E. Waltz. The boredom detector: Journal watch. *IEEE Spectrum*, 57(3):8, March 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Waltz:2021:VGE

- [Wal21] Emily Waltz. Vaccines go electric: a handheld gadget could usher in a new era of vaccines. *IEEE Spectrum*, 58(6):24–31, June 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Waltz:2022:AMO

- [Wal22] Emily Waltz. The algorithm that mapped omicron: With antigenic maps, vaccines can evolve with COVID-19 variants. *IEEE Spectrum*, 59(4):26–31, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Waltz:2024:BIC

- [Wal24] Emily Waltz. The brain-implant company going for neuralink's jugular: Synchron's electrodes are delivered via blood vessel. *IEEE Spectrum*, 61(01):42–43, January 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Watkins:2024:BDQ

- [Wat24] Gavin Watkins. The best DIY quartz clock yet: Vastly superior timing tech comes home. *IEEE Spectrum*, 61(2):16–18, February 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Wright:2021:APS

- [WB21] J. Wright and C. Blake. Atomically precise sensors could detect a planet much like our own: Earth 2.0: This artist's rendition shows how an Earth-like exoplanet might appear. *IEEE Spectrum*, 58(3):22–28, March 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

- [WC23] **Wong:2023:CND** Wendy H. Wong and Harry Campbell. The creepy new digital afterlife industry: These companies could bring you back without your consent. *IEEE Spectrum*, 60(11):38–43, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Wea20] **Weaver:2020:NDE** C. Weaver. The new driver’s ED: Game developers teach Cruise’s autonomous vehicles to understand gestures made by people on the street. *IEEE Spectrum*, 57(9):32–37, September 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [WPBS23] **Watts:2023:LCE** Michael R. Watts, Christopher Poulton, Matthew Byrd, and Greg Smolka. Lidar on a chip enters the fast lane: Sensors for self-driving cars and robots will be tiny, reliable, and affordable. *IEEE Spectrum*, 60(9):38–43, September 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [You22] **Young:2022:BHA** Britt H. Young. The bionic-hand arms race: High-tech hands are complicated, costly, and often impractical. *IEEE Spectrum*, 59(10):24–30, October 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [YS20] **Yan:2020:RHN** W. Yan and D. Schneider. The race for: a here-and-now COVID-19 test: Fast, high-tech, use-anywhere diagnostic tests are key to battling pandemics — [testing]. *IEEE Spectrum*, 57(10):60–65, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Zel20] **Zeloof:2020:HPT** S. Zeloof. Hack a Polaroid with a thermal printer: Go from film to digital — and add Wi-Fi — [hands on]. *IEEE Spectrum*, 57(10):12–14, October 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Zim21] **Zimmer:2021:AWS** Katarina Zimmer. Artificial wombs are science fiction: But artificial placentas are on the horizon. *IEEE Spectrum*, 58(4):22–29, April 2021. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [ZJL+24] **Zorpette:2024:N** Glenn Zorpette, Debdeep Jena, Lucas Laursen, Michelle Hampson, Greg Uyeno, Dina Genkina, and Nikolai Kiselev. News. *IEEE Spectrum*, 61(3):5–12, March 2024. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [ZL20a] **Zahedi:2020:WGT** S. M. Zahedi and B. C. Lee. A win for game theory in the

- data center. *IEEE Spectrum*, 57(4):40–44, April 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [ZL20b] H. Zhou and T. W. Lee. Display that bend and stretch: Some smartphones can now fold like a wallet. In a few years, you may wear one on your skin. *IEEE Spectrum*, 57(11):24–29, November 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Zor20] G. Zorpette. RF MEMS deliver the “ideal switch”: After two decades of development, MEMS-based RF switches are finally finding real-world uses. *IEEE Spectrum*, 57(8):8–9, August 2020. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Zor22a] Glenn Zorpette. The first transistor and how it worked: It emerged from a combustible mix of brilliance and ambition. *IEEE Spectrum*, 59(12):24–28, December 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Zor22b] Glenn Zorpette. One small step for radio: Next: One giant leap for Earth–Moon communications. *IEEE Spectrum*, 59(4): 4, April 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Zor22c] Glenn Zorpette. The ripples from Edwin Hall’s effect: How a 143-year-old insight is shaping spacecraft propulsion. *IEEE Spectrum*, 59(2):4, February 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Zor22d] Glenn Zorpette. The seabed solution: After 150 years, is the time finally right for deep-ocean mining? *IEEE Spectrum*, 59(1):7, January 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Zor22e] Glenn Zorpette. Your eye in the sky: Satellite reconnaissance comes in from the cold. *IEEE Spectrum*, 59(3):4, March 2022. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Zor23a] Glenn Zorpette. Careers: Kyle Clark: From hockey enforcer to high-flying eVTOL CEO. *IEEE Spectrum*, 60(11):19–20, November 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).
- [Zor23b] Glenn Zorpette. Farewell, editorial wizard: Philip E. Ross
- Zhou:2020:DBS**
- Zorpette:2020:RMD**
- Zorpette:2022:FTH**
- Zorpette:2022:OSS**
- Zorpette:2022:REH**
- Zorpette:2022:SSA**
- Zorpette:2022:YES**
- Zorpette:2023:CKC**
- Zorpette:2023:FEW**

retires after 17 years at *IEEE Spectrum*. *IEEE Spectrum*, 60(12):2, December 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Zorpette:2023:FEY

[Zor23c] Glenn Zorpette. Finally, an eVTOL you can buy soonish: Opener's BlackFly is the first of a radical new class of automated ultralight fliers. *IEEE Spectrum*, 60(1):32–57, January 2023. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).