Global Innovation Index 2023

Global Innovation Index 2023 - Innovation in the face of uncertainty

The Global Innovation Index reveals which are the most innovative countries in 2022 and if innovation drives productivity and promote economic growth.

wipo.int

ARTIFICIAL INTELLIGENCE

Generative AI exists because of the transformer

The technology has resulted in a host of cutting-edge AI applications - but its real power lies beyond text generation

ig.ft.com

The Physical Process That Powers a New Type of Generative AI

Some modern image generators rely on the principles of diffusion to create images. Alternatives based on the process behind the distribution of charged particles may yield even better results.
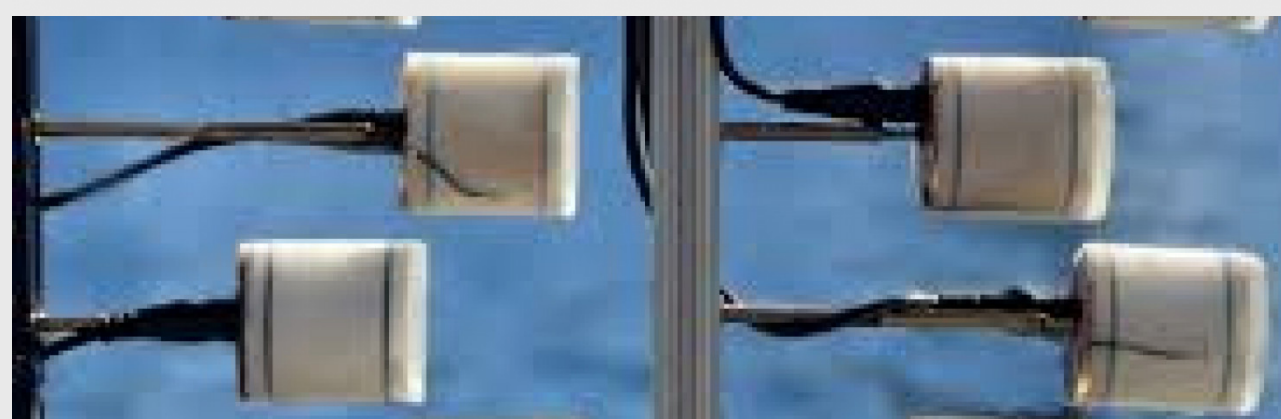
quantamagazine.org

The ethics of generative AI: How we can harness this powerful technology

With the great power of generative AI comes great responsibility. Here's how researchers are addressing the ethical concerns and challenges - the biggest questions of our time.
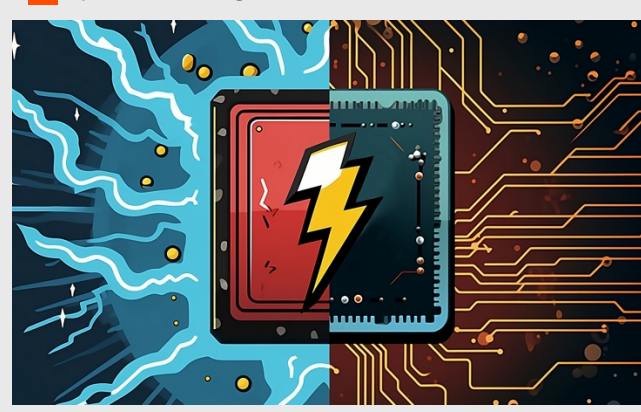
zdnet.com

INFRASTRUCTURE

MIT Makes Low-Power Underwater Communication Practical

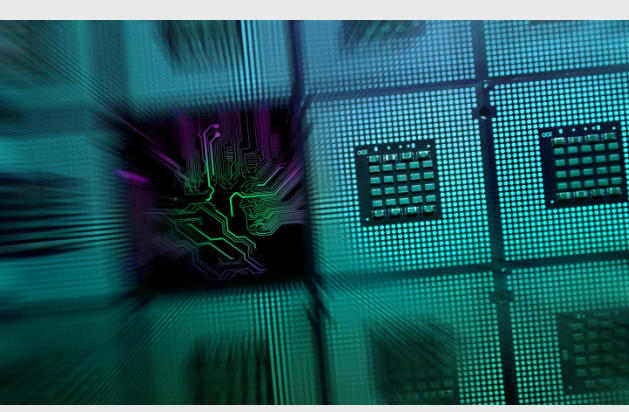New approach revives 70-year-old idea to boost ranges 15-fold

spectrum.ieee.org

System combines light and electrons to unlock faster, greener computing

MIT's "Lightning" system connects photons to the electronic components of computers using a novel abstraction, to create the first photonic computing prototype to serve real-time machine-learning inference requests.

news.mit.edu

GaN Transistors Double Down on Size and Power Efficiency

Whether in space or on the ground, these GaN-based transistors unlock new benefits compared to silicon.
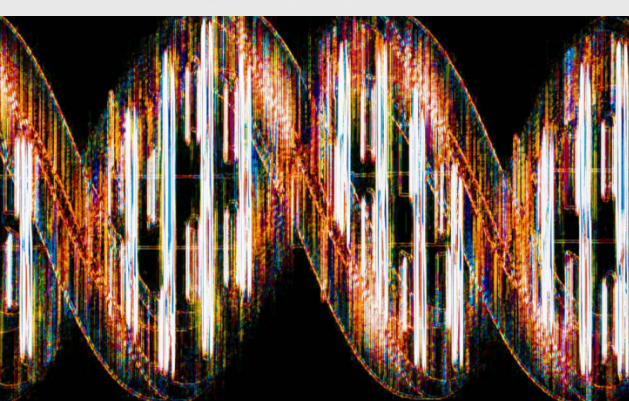
allaboutcircuits.com

LIFE SCIENCES

Google and the Department of Defense are building an AI-powered microscope to help doctors spot cancer

The tool is called an Augmented Reality Microscope, and it will usually cost health systems between $90,000 and $100,000.
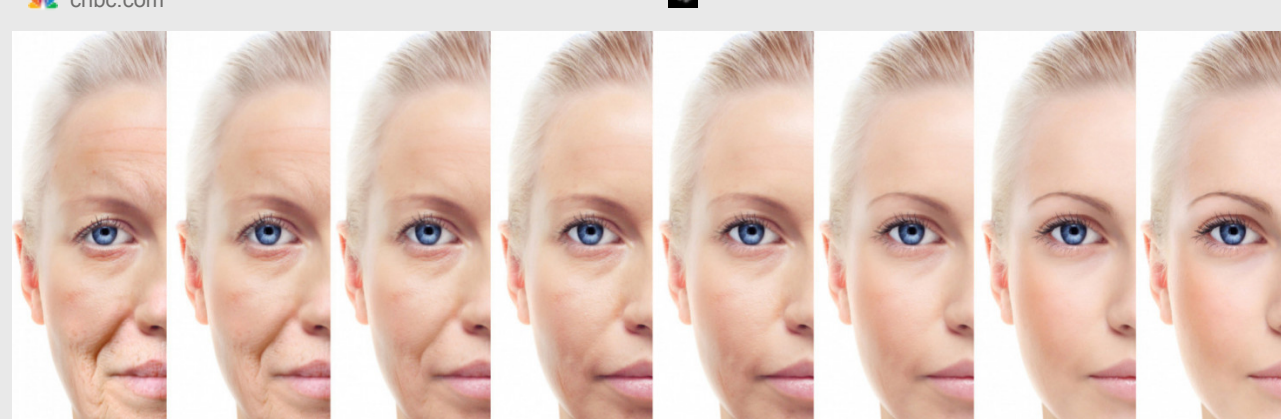
cnbc.com

DeepMind's New AI Can Predict Genetic Diseases

AlphaMissense, a new model from Google's artificial intelligence team, analyzes the effects of DNA mutations and will accelerate research into rare diseases.
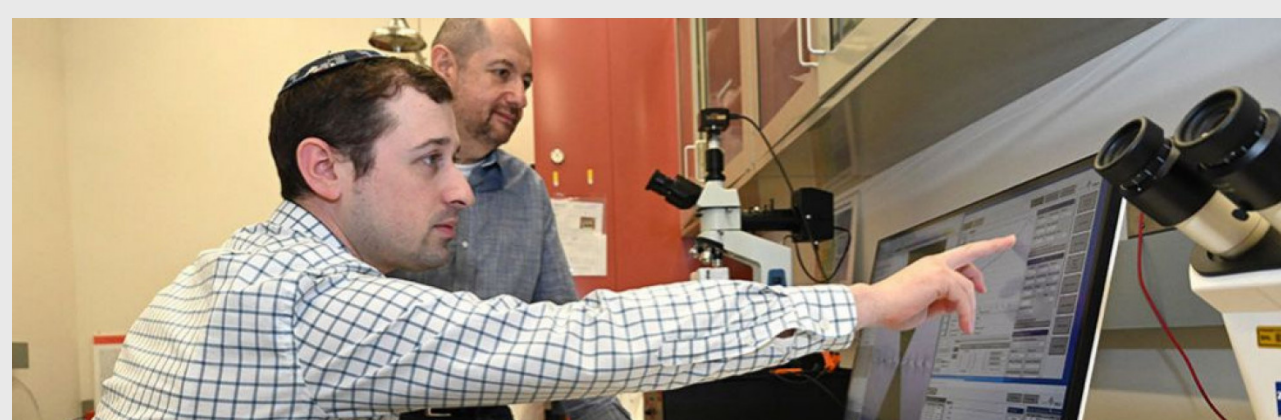
wired.co.uk

Scientists Have Reached a Key Milestone in Learning How to Reverse Aging

The finding involves mice, but represents an important milestone in understanding what causes cells to age-and potentially how to reverse the process in people.

time.com

ADVANCED MATERIALS

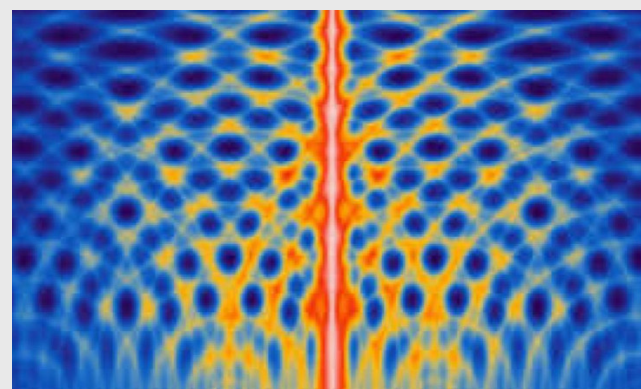**Strength is in This Glass's DNA**

Scientists coat specialized pieces of DNA with a pure form of glass to create a lightweight material that is stronger than steel.

bnl.gov

IN THE LAB

How Our Reality May Be a Sum of All Possible Realities

Richard Feynman's path integral is both a powerful prediction machine and a philosophy about how the world is. But physicists are still struggling to figure out how to use it, and what it means.

quantamagazine.org

Mathematician Solves 50-Year-Old Möbius Strip Puzzle

A trapezoid was key to discovering the elusive answer to a riddle about Möbius strips
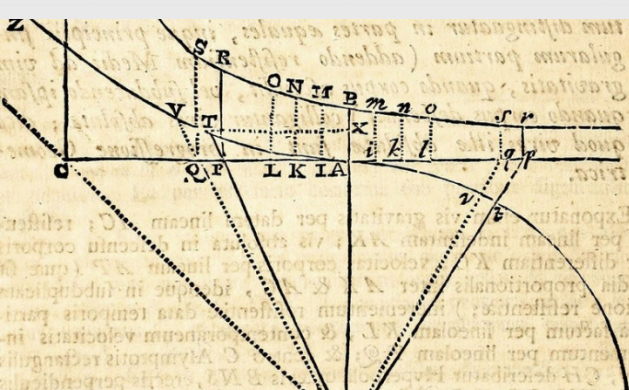
scientificamerica...

AFTER HOURS

Pythagorean Theorem Found On Clay Tablet 1,000 Years Older Than Pythagoras

It predates Pythagoras by over 1,000 years.

iflscience.com

Mistranslation of Newton's First Law Discovered after Nearly 300 Years

A new interpretation of Isaac Newton's writings clarifies what the father of classical mechanics meant in his first law of motion

scientificamerica...

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