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AI
AI-generated faces have crossed the uncanny valley and are now more trustworthy than real ones

"You might be confident in your ability to tell a real face from one created using artificial intelligence. But a new study has found that your chance of choosing accurately would be slightly better if you just flipped a coin—and you are more likely to trust the fake face over the real one."

Source: Fast Company (17 February 2022)

AI
Are You Still Using Real Data to Train Your AI? Nvidia's Rev Lebaredian says synthetic data can make AI systems better and maybe even more ethical

"It may be counterintuitive. But some argue that the key to training AI systems that must work in messy real-world environments, such as self-driving cars and warehouse robots, is not, in fact, real-world data. Instead, some say, synthetic data is what will unlock the true potential of AI. Synthetic data is generated instead of collected, and the consultancy Gartner has estimated that 60 percent of data used to train AI systems will be synthetic. But its use is controversial, as questions remain about whether synthetic data can accurately mirror real-world data and prepare AI systems for real-world situations."

Source: IEEE Spectrum (17 February 2022)

ARCHITECTURE
Dezeen's guide to the architecture of the Beijing 2022 Winter Olympics

"Dezeen rounds up the most architecturally significant venues, including a new stadium by Populous and the world's first permanent structure for big air extreme snow jumping.

The majority of the venues for the upcoming Winter Games are not new, with some built as venues for the Beijing 2008 Summer Olympics as the city becomes the first ever to host both editions of the 16-day competition."

Source: DEZEEN (2 February 2022)

ARCHITECTURE
"Robotic Construction Can Help Us Design Better Buildings": An Interview with HANNAH

"Leslie Lok and Sasa Zivkovic spoke to Archdaily about computational tools, the potential of robotic fabrication, as well as their academic work concerning digital construction technologies. Read the full interview below."

Source: Archdaily (18 February 2022)

ELECTRONICS
### Bacteria upcycle carbon waste into valuable chemicals

"Bacteria are known for breaking down lactose to make yogurt and sugar to make beer. Now researchers led by Northwestern University and LanzaTech have harnessed bacteria to break down waste carbon dioxide (CO2) to make valuable industrial chemicals.

In a new pilot study, the researchers selected, engineered and optimized a bacteria strain and then successfully demonstrated its ability to convert CO2 into acetone and isopropanol (IPA)."

Source: Eurekalert (21 February 2022)

LIQUID ELECTRONICS
The University of Sussex scientists advancing liquid electronics
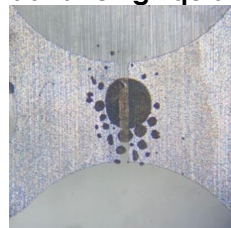
"In their research paper published in *ACS Nano,* the Sussex scientists have built on their previous work to wrap emulsion droplets with graphene and other 2D materials by reducing the coatings down to atomically-thin nanosheet layers."

Source: University of Sussex (15 February 2022)

MATERIALS
New material offers remarkable combo of toughness and stretchiness

"Researchers have created A material that is very stretchable and extremely tough. The material is of A type of ionogel, which is polymer network that contain salts that are liquid at room temperature. The new material has the stretchability of polyacrylic acid and is stronger than polyacrylamide. In terms of toughness, it's better than cartilage."

Source: NORTH CAROLINA STATE UNIVERSITY (21 February 2022)

MATERIALS
Self-healing materials for robotics made from 'jelly' and salt

"Researchers have developed self-healing, biodegradable, 3D-printed materials that could be used in the development of realistic artificial hands and other soft robotics applications."

Source: University of Cambridge (18 February 2022)


MATERIAL SCIENCE
Turning waste PPE into water and vinegar

"The PPE-to-liquid process is carried out at a temperature of 300°C and takes about an hour in a small prototype machine in a laboratory in the faculty. Gaseous by-products from the process are oxygen and low concentrations of carbon dioxide which can be safely discharged."

Source: UNIVERSITY OF AUCKLAND (16 February 2022)

ROBOTICS
Introducing Nikola, the emotional android kid

怒り 嫌悪 恐怖 幸福 悲しみ 驚き
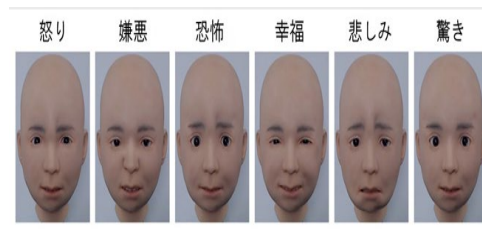
"The new study, published in Frontiers in Psychology, tested how well people could identify six facial expressions—happiness, sadness, fear, anger, surprise, and disgust—which were generated by moving "muscles" in Nikola's face."

Source: RIKEN (11 February 2022)

SCIENCE
Illinois musicians, chemists use sound to better understand science
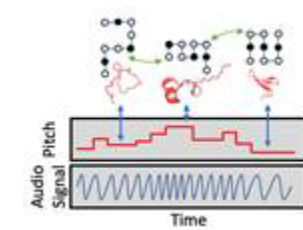
"A team of researchers at the University of Illinois Urbana-Champaign is using sonification – the use of sound to convey information – to depict biochemical processes and better understand how they happen."

Source: University of Illinois (17 February 2022)

VIRTUAL REALITY
Forget handheld virtual reality controllers: a smile, frown or clench will suffice
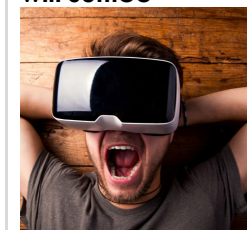
"An international team of researchers from Australia, New Zealand and India has now taken facial recognition technology to the next level, using a person's expression to manipulate objects in a virtual reality setting without the use of a handheld controller or touchpad."

Source: University of South Australia (18 February 2022)