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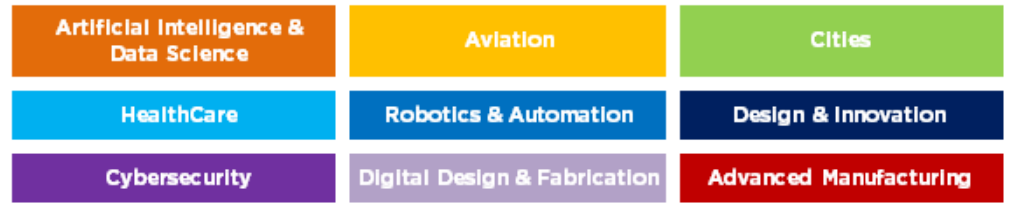
AI
An AI Used Facebook Data to Predict Mental Illness

On December 3, a group of researchers reported that they had managed to predict psychiatric diagnoses with Facebook data—using messages sent up to 18 months before a user received an official diagnosis.

Source: Wired (14 Dec 2020)

ALLOY DESIGN
Researchers Find A Better Way To Design Metal Alloys
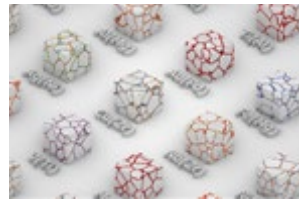
"System uses machine learning to analyze boundaries between crystal grains, allowing for selection of desired properties in a new metal."

Source: MIT (10 Dec 2020)

BIOMEDICAL DEVICES
Brain Stimulation Via Earbuds: Unobtrusive Technology Could Treat a Variety of Diseases

"… look like regular earbuds, but these headphones don't play music, or produce any kind of sound. Instead, they produce electrical fields designed to treat disease."

Source: IEEE Spectrum (10 Dec 2020)

COMPUTING
SMART Researchers Engineer a Plant-Based Sensor to Monitor Arsenic Levels in Soil

"Nanoscale devices integrated into the leaves of living plants can detect the toxic heavy metal in real time."

Source: MIT News (13 Dec 2020)

ECONOMY
Global Recovery Tracker: Activity in Key Markets

"Businesses are operating in uncertain times without a clear picture of when output and consumer spending might return to pre-crisis levels. What will recovery look like for the global economy?
To answer this question, Euromonitor has developed the Global Recovery Tracker and Index, which monitors the latest quarterly economic data and forecasts to help businesses track and predict when activity in key markets will recover."

Source: EUROMONITOR (2020)

ELECTRIC VEHICLE
Startup Says Solar-Powered Electric Car Never Needs to Charge

Rather, the company says in a press release that the vehicle has an extraordinary 1,000-mile range per charge, factoring in its solar panels adding 45 miles' worth of juice on sunny days.

Source: Futurism (7 Dec 2020)

ENERGY
Scientists Publish Open Resource To Help Design 'Greener' Energy Systems

"Researchers have created a database of measurements from existing global power grid systems that will help develop new power systems capable of meeting changing demands, such as the move towards renewable energy sources."

Source: Eurekalert! (11 Dec 2020)

INFORMATION TRANSFER
Faster And More Efficient Information Transfer
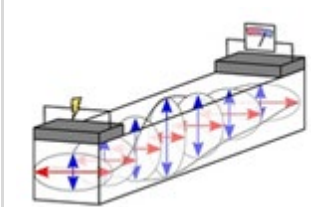
"Physicists use antiferromagnetic rust to carry information over long distances at room temperature."

Source: Johannes Gutenburg-Universitat Mainz (10 Dec 2020)

PHYSICS
Physics World Announces Its Breakthrough Of The Year Finalists For 2020

"This technology may induce electrical discharge from passing lightning, helping to guide it to safe targets and reduce the risk of catastrophic fires."

Source: Physics World (10 Dec 2020)

PHYSICS
Science Of Sandcastles Is Clarified, Finally

"New research provides a solution for the century-and-half-old puzzle of why capillary condensation, a fundamentally microscopic phenomenon involving a few molecular layers of water, can be described reasonably well using macroscopic equations and macroscopic characteristics of bulk water. Is it a coincidence or a hidden law of nature?."

Source: ScienceDaily (9 Dec 2020)

PRODUCT DESIGN
Researchers Use Origami To Solve Space Travel Challenge

"WSU researchers have used the ancient Japanese art of paper folding to possibly solve a key challenge for outer space travel - how to store and move fuel to rocket engines."

Source: Eurekalert! (15 Dec 2020)

SMART EYEWEAR
A Compact RGB Scanning Projector for Wearable Displays and Smart Glasses
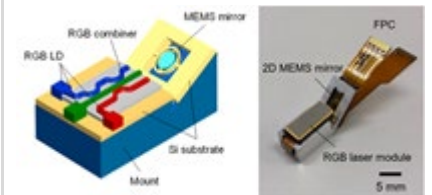
"Scientists at the University of Fukui, Japan, have achieved remarkable progress in the development of an extremely compact RGB laser projector that can create a high definition (HD) projection image."

Source: University of Fukui (10 Dec 2020)

SUSTAINABLE DESIGN
Snarkitecture Rethinks Pharrell Williams' Portable Dining Pod

Otherware touts the kit as 'completely sustainable': produced entirely from recycled materials – including CD's, in a nod to Pharrell's roots in music – its every component can be recycled again.

Source: Wallpaper (8 Dec 2020)

TECHNOLOGY
New Technology Sends Information Through Human Touch

"Engineers at Purdue University in Indiana, USA, have developed a new technology that they say makes it possible to transmit information through human touch."

Source: The Engineer (14 Dec 2020)

TECHNOLOGY
The Resolution Revolution: UK Scientists Buoyed By Technology Breakthrough

"A breakthrough in visualization technology could help scientists accelerate the speed at which they develop new drugs and treatments to fight serious diseases."

Source: CGTN (10 Decr 2020)

WEARABLES
A Smart Ring Shows It's Possible To Detect Fever Before You Feel It

"Wearables such as the Oura ring can collect temperature data continuously throughout the day and night, allowing researchers to measure people's true temperature baselines and identify fever peaks more accurately."

Source: UC San Diego News Center (14 Dec 2020)