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Artificial Intelligence & Data Science	Aviation	Cities
HealthCare	Robotics & Automation	Design & Innovation
Cybersecurity	Digital Design & Fabrication	Advanced Manufacturing

3D PRINTING

Is 3D Printing the Future of Battery Design?

"The technology promises smaller, more capable batteries that can be integrated into products—and, perhaps, designed with recycling in mind."

Source: MIT Technology Review (22 December 2019)

ANALYTICS

Model Beats Wall Street Analysts in Forecasting Business Financials

"Now MIT researchers have developed an automated model that significantly outperforms humans in predicting business sales using very limited, 'noisy' data."

Source: MIT News (19 December 2019)

ARTIFICIAL INTELLIGENCE

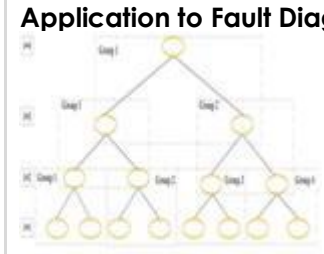
How Is Artificial Intelligence (AI) Changing the Future of Architecture?

"According to recent research, almost everyone has a different requirement for automation. And most of the work of humans is done by the latest high intelligence computers. Well, what about Architecture?"

Source: AITHORITY (23 December 2019)

BIG DATA

A Hierarchical Dimension Reduction Approach for Big Data with Application to Fault Diagnostics

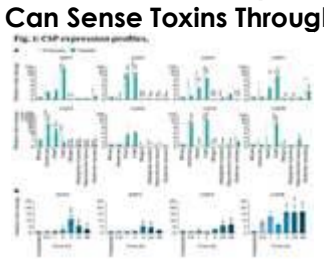


"Big data can be utilized to improve the efficiency of an aging manufacturing system, provided, several challenges are handled. In this paper, a novel methodology is presented to detect faults in manufacturing systems while overcoming some of these challenges."

Source: Big Data Research (December 2019)

BIOLOGY

Researchers Identify That Mosquitoes Can Sense Toxins Through Their Legs



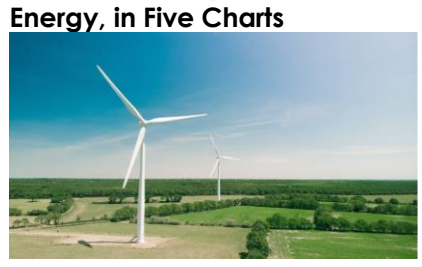
Source: Nature

"The protein, which is based in the legs, comes into direct contact with the insecticide as the insect lands on the net, making it an excellent potential target for future additives to nets to overcome this potent resistance mechanism."

Source: EurekAlert! (25 December 2019)

CLEAN ENERGY

Our Pathetically Slow Shift to Clean Energy, in Five Charts

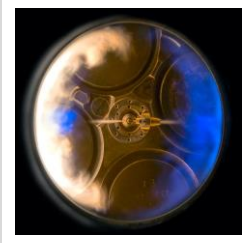


"If we stick to the average rate of clean energy additions during the last five years, it would take about 360 years to build a system of that size, Breakthrough's Seaver Wang found. If we did it at the fastest rate in the last five years, it'd still take nearly 260 years."

Source: MIT Technology Review (23 December 2019)

ENERGY

Can Diesel Finally Come Clean?

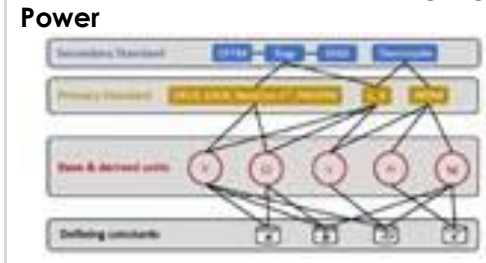


"Mueller calls his patented technology ducted fuel injection, or DFI... Now Mueller and his colleagues hope to use his concept to try to create the first practical low-soot, low-NOx diesel engines, which, he says, would need less or no exhaust after treatment."

Source: Scientific American (19 December 2019)

LIGHT MEASUREMENT

Universal Method for Measuring Light Power



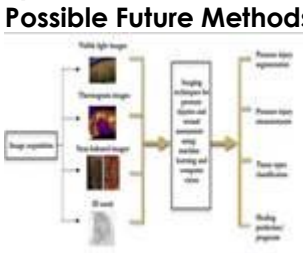
Source: IOP

"Always on the lookout for better ways to measure all kinds of things, researchers at the National Institute of Standards and Technology (NIST) have published a detailed study suggesting an 'elegant' improved definition for the standard unit of light power, the optical watt."
Read in details in the IOP article.

Source: Science Daily (20 December 2019)

MACHINE LEARNING

Pressure Injury Image Analysis with Machine Learning Techniques: A Systematic Review on Previous and Possible Future Methods

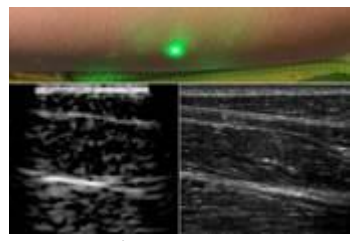


"A summary of machine learning algorithms used for pressure injury image analysis, as well as chronic wounds and skin lesions. An introduction to deep learning techniques as a rising solution for pressure injury image analysis. A total of 114 papers have been retrieved from 8 databases and summarized, which presents a comprehensive review of the field."

Source: Artificial Intelligence in Medicine (January 2020)

MEDICAL IMAGING

Researchers Produce First Laser Ultrasound Images of Humans



"MIT engineers have come up with an alternative to conventional ultrasound that doesn't require contact with the body to see inside a patient. The new laser ultrasound technique leverages an eye- and skin-safe laser system to remotely image the inside of a person."

Source: MIT News (19 December 2019)

PHYSICS

Top 10 Physics Breakthroughs of the Decade

"Physics World has been selecting its breakthrough of the year since 2009. Without doubt, the past decade has included some truly quantum leaps in physics – quite literally in one case."

Source: Physics World (20 December 2019)

RESEARCH ANALYTICS

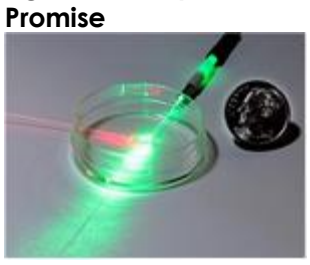
Global Research Report – Multi-Authorship and Research Analytics

"The *Web of Science* indexes a growing number of research articles with 1,000 or more unique authors or author addresses across more than 100 different countries … *Multi-authorship and research analytics* examines the effects of complex and hyper-authorship by author, country, and discipline."

Source: Clarivate Analytics (2019)

SENSORS

Light-Based pH Sensor Glows with Promise



"Skip the litmus paper - a new type of pH sensor, based on light and under development by an international research team, could both give users instant visual readout and record a signal over time without disturbing biological systems being monitored. The researchers believe that their proof-of-concept device could also form the design basis for other types of sensors."

Source: Optics & Photonics News (19 December 2019)

TECHNOLOGY

Ask Yourself These Nine Questions Before Investing in a New Technology

"Before breaking the bank on a new solution, you'll want to take a step back and analyze the needs of your business. To help you do this, a panel of Forbes Technology Council members shared some important points to consider when deciding whether a new tech is right for your organization."

Source: Forbes (4 December 2019)

TECHNOLOGY FAILURES

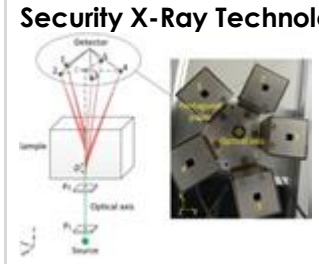
The Biggest Technology Failures of 2019

"Autopilot run amok, bogus agriculture bots, and genetic gaydar all made our list of the worst technologies of the year."

Source: MIT Technology Review (23 December 2019)

X-RAY IMAGING

Improving Efficiency, Effectiveness of Security X-Ray Technology



"In the journal AIP Advances, from AIP Publishing, researchers at Tongji University and Zhejiang University City College propose a new technique for the efficient security detection of contraband items. Typically, airport security uses X-ray imaging to quickly scan through baggage, but this method suffers many limitations."

Source: AIP Publishing (19 December 2019)

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