Weekly Discovery

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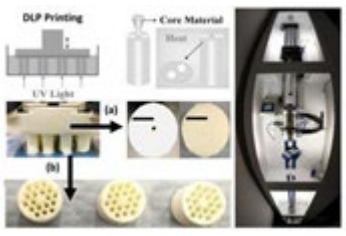
3D PRINTING

3-D Printing Optical Fiber



"Researchers at the University of Technology Sydney and the University of New South Wales have demonstrated a way to 3-D print a glass preform for fabricating glass optical fiber. This method, according to the team, simplifies fiber production as well as enabling both novel fiber designs and applications."

Source: Optics & Photonics News (7 November 2019)

ARTIFICIAL INTELLIGENCE

Chinese Scholars Use AI to Screen Newborns for Genetic Disorders via Facial Scan

"Researchers from the Shanghai Children's Medical Centre and the Shanghai Paediatric Centre said their new AI-based assistive diagnosis tool would be used for initial screening, helping avoid missed or wrong diagnosis of newborns."

Source: South China Morning Post (12 November 2019)

ARTIFICIAL INTELLIGENCE

We Teach A.I. Systems Everything, Including Our Biases

"Researchers say computer systems are learning from lots and lots of digitized books and news articles that could bake old attitudes into new technology."

Source: The New York Times (11 November 2019)

BIG DATA

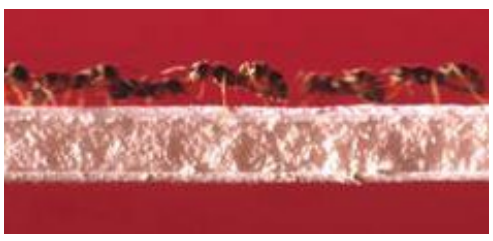
How Big Investors Cash In on 'Alternative Data'

"Corporate filings and government reports still guide how many investors view global economics and politics. But more of them are turning to non-traditional information - alternative data, in industry parlance - to supplement official statistics."

Source: Bloomberg (9 November 2019)

DATA ACQUISITION & ANALYSIS

Self-Regulating Behaviour Helps Ants Avoid Traffic Jams

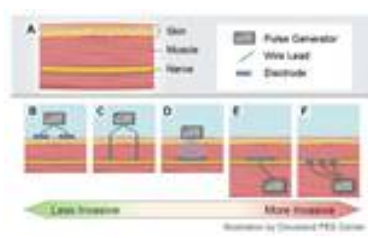


"Ants are particularly good at avoiding traffic jams and can move about their business even when they occupy more than 80% of the available space – twice the value that stymies human pedestrians or drivers. According to experiments performed by a team of researchers in France, the US and Australia, ant movement is best described by a two-phase flow function that is very different from existing statistical models of traffic engineering."

Source: Physics World (11 November 2019)

HEALTHCARE

Injectable, Flexible Electrode Could Replace Rigid Nerve-Stimulating Implants



Source: Wiley Online Library

"Biomedical engineers and their collaborators have made a significant advance that could dramatically reduce the cost of neuromodulation therapy, increase its reliability and make it much less invasive."

Read more at Advanced Healthcare Materials.

Source: Science Daily (11 November 2019)

INTERNET OF THINGS

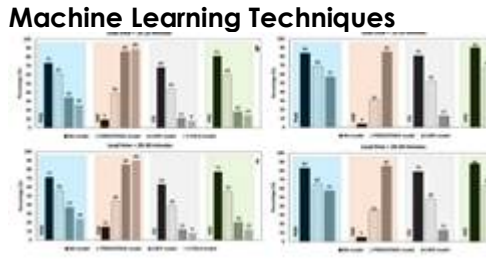
Catching Up on the Latest in IoT Intelligence, 2019

"The study reviews organizations' interest in and demand for applying business intelligence (BI) to IoT data, systems, and processes. R&D and Marketing & Sales departments assign the highest levels of IoT importance, as do larger manufacturing, financial services/ insurance, and technology organizations."

Source: Forbes (10 November 2019)

MACHINE LEARNING

Nowcasting Lightning Occurrence from Commonly Available Meteorological Parameters Using Machine Learning Techniques



"Researchers have developed a simple and inexpensive system that can predict when lightning will strike to the nearest 10 to 30 minutes, within a 30-kilometer radius. The system uses a combination of standard meteorological data and artificial intelligence."

Source: Nature Climate and Atmospheric Science (8 November 2019)

MATERIALS SCIENCE

New Breakthrough Offers Fast and Precise Look into Fiber-Reinforced Composites

"Researchers at the Paul Scherrer Institute (PSI) have improved a method for small-angle X-ray scattering (SAXS) to such an extent that it can now be used in the development or quality control of novel fiber-reinforced composites."

Source: SciTech Daily (12 November 2019)

MATERIALS SCIENCE

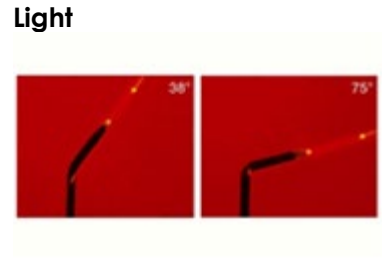
Spiders and Ants Inspire Metal That Won't Sink

"University of Rochester researchers, inspired by diving bell spiders and rafts of fire ants, have created a metallic structure that is so water repellent, it refuses to sink—no matter how often it is forced into water or how much it is damaged or punctured. Could this lead to an unsinkable ship?

Source: University of Rochester (6 November 2019)

NANOTECHNOLOGY

Engineers Create Tiny 'Artificial Sunflowers' That Bend Towards the Light

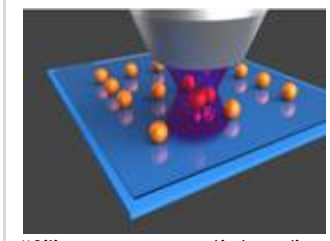


"By moulding temperature-sensitive materials into thin, supportive structures, scientists have come up with tiny 'stems' that bend towards a bright light source, providing a moving platform that could dramatically improve the efficiency of a range of solar technologies."

Source: Science Alert (6 November 2019)

NANOTECHNOLOGY

Precise and Printable Silicon Nanoparticles



"Silicon nanoparticles dispersed in solution can be positioned by light and printed onto surfaces, or used in applications such as medical imaging and drug delivery."

Source: A*STAR Research (7 November 2019)

ROBOTICS

A 'Worker' That Flies: Chinese Researchers Design Novel Flying Robot

"Recently, they reported the development of a contact aerial manipulator system that shows high flexibility and strong mission adaptability."

Source: EurekAlert! (8 November 2019)

ROBOTICS

Technique Helps Robots Find the Front Door

"Engineers have developed a navigation method that doesn't require mapping an area in advance. Instead, their approach enables a robot to use clues in its environment to plan out a route to its destination, which can be described in general semantic terms, such as 'front door' or 'garage,' rather than as coordinates on a map."

Source: Science Daily (4 November 2019)

SENSORS

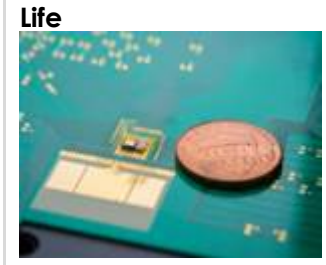
EduSense: Like a FitBit for Your Teaching Skills

"Currently, the most effective mechanism for professional development is for an expert to observe a lecture and provide personalized feedback. But a new system developed by Carnegie Mellon University researchers offers a comprehensive real-time sensing system that is inexpensive and scalable to create a continuous feedback loop for the instructor."

Source: Carnegie Mellon University (6 November 2019)

WIRELESS DEVICES

New Chip for Waking Up Small Wireless Devices Could Extend Battery Life



"A new power saving chip developed by engineers at the University of California San Diego could significantly reduce or eliminate the need to replace batteries in Internet of Things (IoT) devices and wearables."

Source: EurekAlert! (12 November 2019)

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