Weekly Discovery

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28 OCTOBER 2019 - 1 NOVEMBER 2019

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ALGORITHMIC BIAS

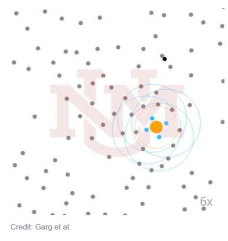
A Health Care Algorithm Offered Less Care to Black Patients

"New research shows that software guiding care for tens of millions of people systematically privileges white patients over black patients. Analysis of records from a major US hospital revealed that the algorithm used effectively let whites cut in line for special programs for patients with complex, chronic conditions such as diabetes or kidney problems."

Source: Wired (24 October 2019)

ARTIFICIAL INTELLIGENCE

A Deep Learning Approach to Coordinate Defensive Escort Teams

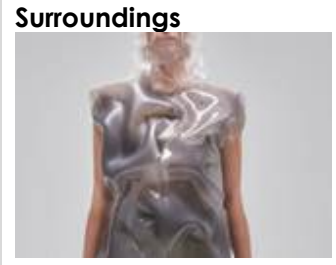


"A team of researchers at the University of New Mexico has recently introduced a new end-to-end solution for coordinating robotic escort teams that are protecting high-value payloads or goods. The technique … is based on deep reinforcement learning (RL), which entails training algorithms to make effective predictions by analyzing data."

Source: Tech Xplore (28 October 2019)

AUTONOMOUS DRESS

Ying Gao's "Chameleon-Like" Autonomous Dresses React to Their Surroundings



"Montreal-based fashion designer Ying Gao has created a pair of robotic dresses that respond to their environment by rippling, expanding and contracting as if they are alive."

Source: Dezeen (28 October 2019)

BIOMIMICRY

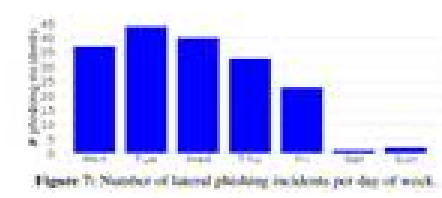
Compact Depth Sensor Inspired by Spiders

"Researchers at the Harvard John A. Paulson School of Engineering and Applied Sciences (SEAS) have developed a compact and efficient depth sensor that could be used on board microrobots, in small wearable devices, or in lightweight virtual and augmented reality headsets."

Source: Harvard (28 October 2019)

COMPUTER SCIENCE

Columbia Professor Develops a Detector That Stops Lateral Phishing Attacks



"When a phishing email comes from an internal account, the vast majority of email security systems can't stop it. Existing security systems largely detect cyber attacks that come from the outside, relying on signals like IP and domain reputation, which are ineffective when the email comes from an internal source."
Also read the research paper.

Source: EurekAlert! (29 October 2019)

DRONES

First Look: Uber Unveils New Design for Uber Eats Delivery Drone

"The new drone design can carry dinner for up two people and features six rotors, the company says. Its battery is designed for eight minutes, including loading and unloading, and it can only do relatively short hauls. The drone has a roundtrip range of 12 miles, or a total flight time of 18 minutes."

Source: Forbes (28 October 2019)

INNOVATION

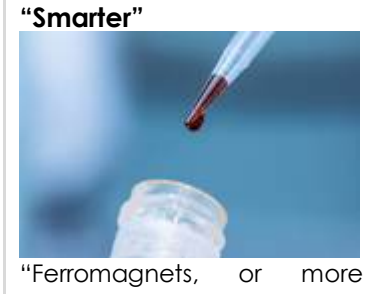
Enhancing Innovation Capacity in City Government

"To understand how cities approach public sector innovation, the OECD and Bloomberg Philanthropies carried out a survey on innovation capacity across 89 cities in OECD countries and non-OECD economies. "

Source: OECD (26 October 2019)

MAGNETS

Newly Created Magnets Are Cheaper, More Effective and "Smarter"



"Ferromagnets, or more precisely, magnets – are extremely demanded materials in modern electronics. The magnets present in almost every device – TVs, computers, fridges, cars, smartphones, etc."

Source: Immanuel Kant Baltic Federal University (17 October 2019)

OPEN ACCESS

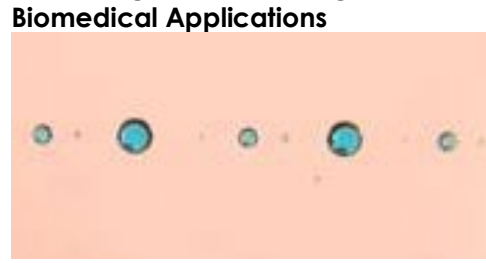
Open-Access Publishing: Challenges and Opportunities

"This episode of the Physics World Weekly podcast celebrates International Open Access Week. Matin Durrani speaks to Antonia Seymour, who is publishing director at IOP Publishing, about the challenges and rewards of publishing open-access journal."

Source: Physics World (24 October 2019)

PHYSICAL SCIENCE

New Method Promises Advances in 3D Printing, Manufacturing and Biomedical Applications



"In a development offering great promise for additive manufacturing, researchers have created a method to precisely create droplets using a jet of liquid. The technique allows manufacturers to quickly generate drops of material, finely control their size and locate them within a 3D space."
Read more at PNAS.

Source: Science Daily (28 October 2019)

QUANTUM COMPUTING

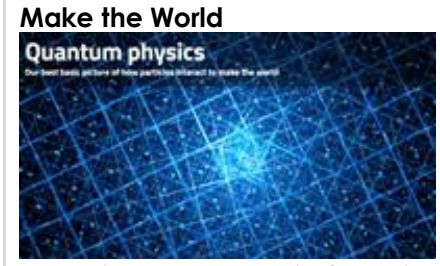
Google Claims a Quantum Breakthrough That Could Change Computing

"The Silicon Valley giant's research lab in Santa Barbara, Calif., reached a milestone that scientists had been working toward since the 1980s … The Google device did in 3 minutes 20 seconds a mathematical calculation that supercomputers could not complete in under 10,000 years, the company said in its paper."

Source: The New York Times (23 October 2019)

QUANTUM PHYSICS

Quantum Physics: Our Best Basic Picture of How Particles Interact to Make the World



"What is quantum physics? Put simply, it's the physics that explains how everything works: the best description we have of the nature of the particles that make up matter and the forces with which they interact."

Source: New Scientist (October 2019)

ROBOTICS

Giving Robots the Human Touch

"Researchers at A*STAR have designed a hybrid machine learning model to enhance touch capabilities in robots."

Source: A*STAR Research (25 October 2019)

SELF-DRIVING

Why Are Parking Lots So Tricky for Self-Driving Cars?

"In fact, parking lots are one of the most human places you could put a car that doesn't need a human to drive. Their rules are not always consistent, and drivers, moreover, don't always follow them. They're full of little people-to-people interactions ..."

Source: Wired (28 October 2019)

TECHNOLOGY

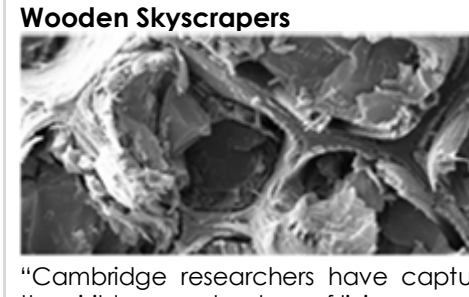
This New Technology Could Make Your Wi-Fi Instantly Better

"Researchers in the US have developed a new wireless protocol that can extend the reach of Wi-Fi devices by more than 60 metres – without the need for hardware modifications."

Source: TechRadar (24 October 2019)

WOOD

Revealing the Nanostructure of Wood Could Help Raise Height Limits for Wooden Skyscrapers



"Cambridge researchers have captured the visible nanostructure of living wood for the first time using an advanced low-temperature scanning electron microscope … Understanding how the components of wood come together to make super strong structures is important for understanding both how plants mature, and for new materials design."

Source: University of Cambridge (23 October 2019)

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