SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

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4 May 2020 – 8 MAY 2020

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3D PRINTING

New Technology Revolutionizes 3D Metal Printing

"The 3D printer developed at TU Graz melts metal powder using high-performance LED light sources and then processes it into components in additive manufacturing. The technology is similar to selective laser melting (SLM) and electron beam melting (EBM), in which metal powder is melted by means of a laser or electron beam and built up into a component layer by layer. "

Source: Eurekalert!(30 April 2020)

AI

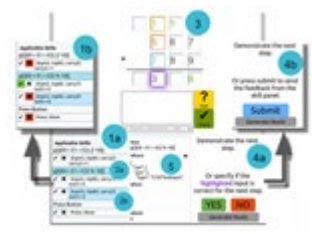
Artificial Intelligence System May Unlock Covid-19 Vaccine Far Faster Than Humans

"There are seemingly endless new treatments and potential coronavirus vaccines being developed and tested on an almost daily-basis, but most of these projects will inevitably fail. This new machine model quickly combs through the most promising studies and research projects, and swiftly disregards the initiatives unlikely to produce a legitimate treatment."

Source: Study.Org (6 May 2020)

ARTIFICIAL INTELLIGENCE

AI Enables Teachers to Rapidly Develop Intelligent Tutoring Systems



" Carnegie Mellon University (CMU) researchers have created an artificial intelligence-based technique to enable educators to rapidly develop intelligent computerized tutoring systems. The teachers can teach the computer by demonstrating several ways to solve problems in a topic, correcting the system if it responds erroneously."

Source: Carnegie Mellon University (30 April 2020)

AUTOMATION

How Many Jobs Do Robots Really Replace?

"MIT economist Daron Acemoglu's new research puts a number on the job costs of automation."

Source: MIT News (4 May 2020)

BATTERY

Next-Generation Batteries Take Major Step Toward Commercial Viability

"The layer formed on lithium surface allows it to operate without breaking down the electrolyte, and that makes the battery last much longer," said Amruth Bhargav, who, along with fellow graduate student Sanjay Nanda, co-authored the paper.

Source: Science Daily(2 2020)

COVID-19

COVID-19 Mental-Health Responses Neglect Social Realities

"A diagnosis is rarely a solution to problems caused by poverty and inequality."

Source: Nature (4 May 2020)

DATA ANALYTICS

Novel Research Speeds Up Threat Detection, Prevention For Army Missions

"Threat detection and prevention are essential to ensuring the safety and security of warfighters. Researchers have developed a way to speed up the processing of extremely large graphs and data, making the most efficient use of modern Army computational resources before and during Soldier deployment. "

Source: Eurekalert (4 May 2020)

HUMAN-ROBOT COMMUNICATIONS

Muscle Signals Can Pilot A Robot

"A team from MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL) came up with a method that dials us closer to more seamless human-robot collaboration. The system, called "Conduct-A-Bot," uses human muscle signals from wearable sensors to pilot a robot's movement. "

Source: MIT News (27 April 2020)

MATERIAL SCIENCE

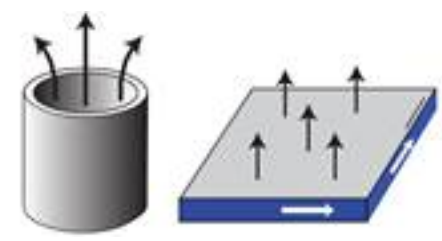
New Material Finally Makes It Into the Almighty Nuclear Code

" For the first time in 30 years, there's a new high-temperature nuclear plant material. Tech like the molten salt reactor requires much higher temperature tolerance and special construction. The new material is an advanced alloy with extremely high creep strength."

Source: Popular Mechanics (4 May 2020)

PHYSICS

A Newfound Superconducting Current Travels Only Along A Material's Edge

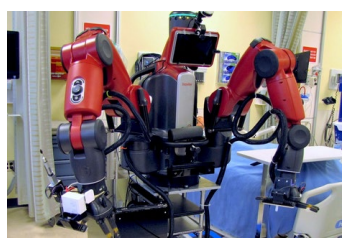


"For the first time, scientists have spotted a superconducting current traveling along the edge of a material, like a trail of ants crawling along the rim of a dinner plate without venturing into its middle. Read more in Science."

Source: Science News (30 April 2020)

ROBOTICS

How Medical Robots Will Help Treat Patients in Future Outbreaks

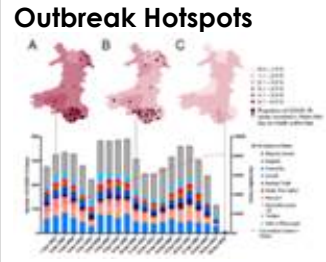


"In this article, we ask the question: How can robots minimize exposure of healthcare workers to patients throughout the entire treatment process? Over the last several years, our research in the Intelligent Motion Laboratory at the University of Illinois at Urbana-Champaign has built and tested prototype systems to explore the technical feasibility, human factors, and economic viability of robot use in patient care, and here we'll share some of our insights and lessons learned. "

Source: IEEE Spectrum(4 May 2020)

SMARTPHONE APP

COVID-19 Symptom Tracker Smartphone App Could Predict Outbreak Hotspots

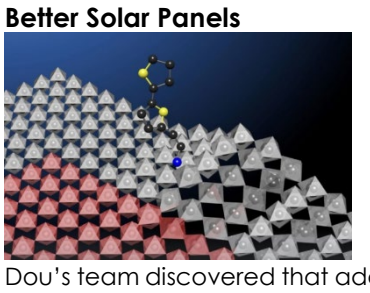


"Daily symptoms logged by more than two and a half million users of the COVID-19 Symptom Tracker, a mobile application launched in March 2020, suggest the tool could help to predict geographical hotspots of COVID-19 incidence up to a week in advance of official public health reports."

Source: EurekAlert! (5 May 2020)

SOLAR TECHNOLOGY

Stabilised Halide Perovskites Promise Better Solar Panels



Dou's team discovered that adding a rigid bulky molecule to the surface of a perovskite stabilises the movement of ions, preventing chemical bonds from breaking easily.

Source: The Engineer (1 May 2020)

SUPPLY CHAIN

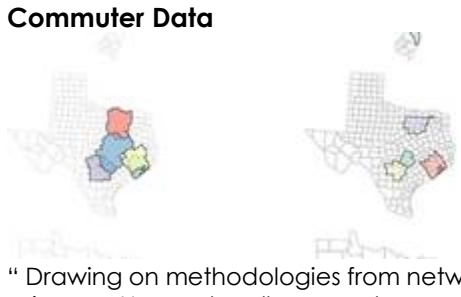
Building a Transparent Supply Chain

Companies would utilize a kanban system to place orders with one another and manage production. Kanban cards would be assigned to the produced items, and the blockchain would record digital tokens representing the kanban cards.

Source: Harvard Business Review(May/June 2020)

URBAN PLANNING

Defining Geographic Regions With Commuter Data



" Drawing on methodologies from network science, He and colleagues have now developed a new method of defining metropolitan areas according to census commuter data. They organized all 3,091 counties in the contiguous United States into an interconnected network, with the number of commuters who cross county lines determining the strength of connections between counties."

Source: Phys.Org (1 May 2020)

WEARABLES

Breathable, Stretchable Electronic Fabric for New Medical Wearables

"The new material is made using a "breath figure method" that permits the creation of tiny holes throughout a polymer film. The film is then dipped in a silver nanowire solution and the coating is heat-pressed to stay permanently on the film."

Source: Medgadget (1 May 2020)

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