Weekly Discovery

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27 JANUARY 2020 - 31 JANUARY 2020

The Library publishes **9 alerts** focusing on Topics relevant to **growth and research areas** to SUTD.

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

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3D PRINTING
In the Frame: The 3D Printed Bike

"Arevo's systems work by performing finite element analysis of different orientations of fibres to determine how the forces and stresses of usage will affect the final printed article."

Source: The Engineer (27 January 2020)

ARCHITECTURE
China's Building a Hospital in 10 Days—This Is What the Design Must Get Right

"AD speaks to Gensler, a world leader in hospital and health care design, on what Chinese officials must do to ensure that their rushed hospital design can keep the deadly coronavirus in check."

Source: Architectural Digest (27 January 2020)

ARTIFICIAL INTELLIGENCE
Facebook Has Trained an AI to Navigate Without Needing a Map

"A team at Facebook AI has created a reinforcement learning algorithm that lets a robot find its way in an unfamiliar environment without using a map. Using just a depth-sensing camera, GPS, and compass data, the algorithm gets a robot to its goal 99.9% of the time "
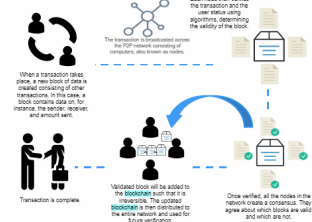
Source: MIT Technology Review (22 January 2020)

ARTIFICIAL INTELLIGENCE
'We Can't Scale Humans': Why Startups Are Raising Millions to Build AI Avatars

"Startups are creating unsettling human-like avatars to take over customer service jobs—or even act as a stand-in for celebrities."

Source: Fast Company (28 January 2020)

BLOCKCHAIN
How Blockchain Is Transforming the Financial Services Industry

"These are 3 of the areas where Blockchain has been tested and leveraged with key use cases emerging in financial services; in particular, cross-border payments, and digital identification and verification. There have been use cases in smart contracts across multiple sectors; smart contracts have been especially effective in real estate, supply chain logistics, and law."

Source: Frost & Sullivan (17 January 2020)

CHEMISTRY
Electricity Turns Garbage into Graphene

"Researchers at Rice University report today in Nature that they can zap virtually any source of solid carbon, from food scraps to old car tires, and turn it into graphene—sheets of carbon atoms prized for applications ranging from high-strength plastic to flexible electronics."

Source: Science Magazine (27 January 2020)

DATA SCIENCE
Study Analyzes Potential Global Spread of New Coronavirus

"A report by the University's WorldPop team has found Bangkok (Thailand) is currently the city most at risk from a global spread of the virus - based on the number of air travellers predicted to arrive there from the worst affected cities in mainland China. Hong Kong (China) is second on the list, followed by Taipei (Taiwan, the Republic of China). Sydney (12), New York (16) and London (19) are among 30 other major international cities ranked in the research."

Source: EurekAlert! (28 January 2020)

DEEP LEARNING
Deep Learning Enables Real-Time Imaging Around Corners

"Researchers have harnessed the power of a type of artificial intelligence known as deep learning to create a new laser-based system that can image around corners in real time."

Source: Phys.org (16 January 2020)

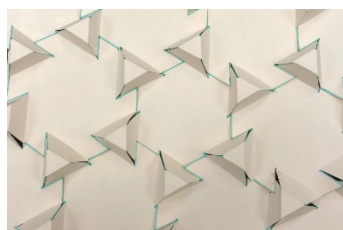
ELECTRONICS
Nano-Thin Flexible Touchscreens Could Be Printed Like Newspaper

"Researchers have developed an ultra-thin and ultra-flexible electronic material that could be printed and rolled out like newspaper, for the touchscreens of the future."
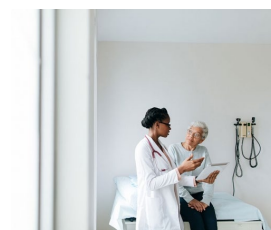
Source: RMIT (28 January 2020)

GEOMETRY
Kirigami Designs Hold Thousands of Times Their Own Weight

"Taking inspiration from both art forms, researchers describe a new set of motifs for creating lightweight, strong, and foldable structures using soft materials. These kirigami structures can support 14,000 times their weight and, because they don't require adhesives or fasteners, can easily be flattened and refolded."
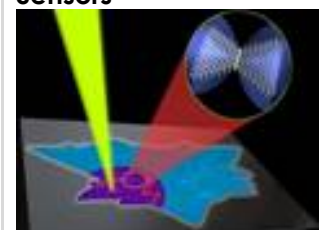
Source: EurekAlert! (21 January 2020)

MACHINE LEARNING
Technique Reveals Whether Models of Patient Risk Are Accurate

"Stultz and his colleagues from MIT, IBM Research, and the University of Massachusetts Medical School have now developed a method that allows them to determine whether a particular model's results can be trusted for a given patient. This could help guide doctors to choose better treatments for those patients, the researchers say."
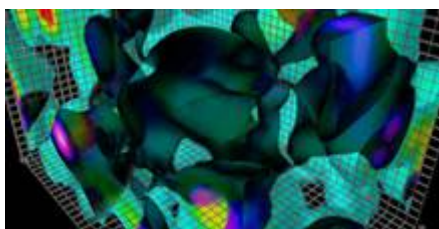
Source: MIT News (23 January 2020)

NANOPHYSICS
Method Detects Defects in 2-D Materials for Future Electronics, Sensors

"A team of researchers has developed a technique to quickly and sensitively characterize defects in 2-D materials."
Read more in ACS Applied Materials & Interfaces.
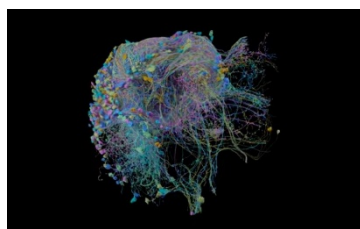
Source: Phys.org (28 January 2020)

QUANTUM PHYSICS
Scientists Create "Strange Metal" Packed with Entangled Electrons

"An international team of researchers has created what's called a 'strange metal' — and they say it could help harness the potential of the quantum world in a practical way."

Source: Futurism (17 January 2020)

SCIENCE
Check Out the Most Complete 3D Brain Map Ever Made

"You can now explore the biggest high-resolution brain connectivity map in any animal, thanks to researchers from Google and the Janelia Research Campus in Virginia. The vibrant brain-wiring diagram, also known as a connectome, outlines a fruit fly's approximately 25,000 neurons all linked together by 20 million synapses. It's also quite pretty."

Source: Popular Science (27 January 2020)

SMART CITIES
The Library Is a Smart City's 'Hub for Digital Intelligence'

"As one of the most trusted spaces and sources of information, libraries are playing an increasingly important role in smart cities. And as cities partner with libraries to disseminate information about municipal services, close digital divides and boost civic engagement, that role will likely continue to evolve."

Source: Smart Cities Dive (27 January 2020)

WEARABLES
Introducing Circular's Smart Ring: The Only Fashionable Wellness Wearable Ring Around

"When paired up with its powerful iOS and Android compatible app, the wearer receives access to some very interesting and helpful customizable features ... A beta prototype of their innovation wellness gadget was finalized in 2019 and their product's Kickstarter has just launched. If you want to get your very own early-release model, or wish to back the company financially, head over to their Kickstarter page ASAP."

Source: Interesting Engineering (28 January 2020)