Weekly Discovery
We SHARE to inspire and ignite ideas!

20 JANUARY 2020 - 24 JANUARY 2020

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

Stay up to date by subscribing to any of these **9 Topical Reports** - CLICK HERE TO SUBSCRIBE NOW

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

---

3D PRINTING
3D Printing with Applications in the Pharmaceutical Industry

"University of Seville researchers, in collaboration with the University of Nottingham, have managed to create the first image of nanoparticles of stabilised gold with biodegradable and biocompatible systems that have been obtained with 3D-printng techniques."

Source: EurekAlert! (17 January 2020)

3D PRINTING
Chinese Researchers Design 3D Printed Biomimetic Soft Robotics & Grippers

"Researchers from China explore the development of a high-performance material that transforms quickly from one shape to another as required for specific applications … In this study, the authors examine the use of magnetic field control and magneto-active soft materials (MASMs) as they offer the potential for both soft sensors and actuators."

Source: 3DPrint.com (19 January 2020)

ARCHITECTURE
This Massive New Rooftop Farm Helps Keep Bangkok from Flooding

"The 236,000-square-foot roof can store as much as 3 million gallons of water. It's the largest rooftop farm in Asia."

Source: Fast Company (13 January 2020)

ARTIFICIAL INTELLIGENCE
Researchers Can Make AI Forget You

"Making a trained AI model forget you often requires retraining it from scratch with all the data but yours. This process that can take weeks of computation. Two new papers offer ways to delete records from AI models more efficiently, possibly saving megawatts of energy and making compliance more attractive."
Also read paper 1 and paper 2.

Source: IEEE Spectrum (15 January 2020)

AUGMENTED REALITY
These Smart Contact Lenses Deliver AR Tech Straight to Your Eyeballs

"Mojo Vision has created the 'smallest and densest dynamic display ever made,' which includes a 14,000 pixel-per-inch display with eye-tracking, image stabilization, and a custom wireless radio. The display needs all those pixels because it's directly laid onto your eyeball."
More details in IEEE Spectrum.

Source: Popular Mechanics (17 January 2020)

AVIATION
Dartmouth Engineers and MIT Create New Airline Scheduling Tool

"Researchers from Dartmouth and the Massachusetts Institute of Technology (MIT) have developed an original approach to flight scheduling that, if implemented, could result in a significant increase in profits for airlines and more flights that align with passengers' preferences."

Source: Thayer School of Engineering at Darthmouth (17 January 2020)

BIOMETRICS
Amazon Considers Palm Biometrics for Touchless In-Store Payments, Tests Terminal Transactions with Visa

"According to a patent published by the U.S. Patent and Trademark Office in December, Amazon's touchless scanning system would establish shopper identity by analyzing their palm features such as wrinkles and veins. The terminals would be used for Amazon Go or Whole Foods shoppers."

Source : Biometric Update (20 January 2020)

BIOMIMETICS
'PigeonBot' Is the First Robot That Can Bend Its Wings Like a Real Bird

"Now, using new insights into exactly how pigeons' joints control the spread of their wing feathers, researchers have built a robotic pigeon, dubbed PigeonBot, whose feathered wings change shape like the real deal."
Read more in Science Robotics.
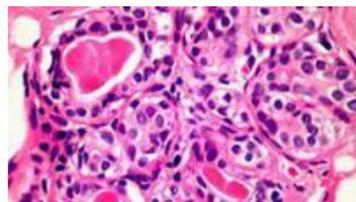
Source: Science News (16 January 2020)

BIOLOGY
Bacteria-Filled Bricks Build Themselves

"Now researchers have developed a living substance that can transform from a gooey sand mixture into a solid brick - and then help build more copies of itself. Proponents say it could be used to make a building material that requires relatively few resources and absorbs greenhouse gases instead of releasing them."

Source: Scientific American (15 January 2020)

HEALTHCARE
Immune Discovery 'May Treat All Cancer'

"A newly-discovered part of our immune system could be harnessed to treat all cancers, say scientists."

Source: BBC (20 January 2020)

INNOVATION
Bloomberg Innovation Index: Germany Breaks Korea's Six-Year Streak as Most Innovative Nation

"The annual Bloomberg Innovation Index, in its eighth year, analyzes dozens of criteria using seven metrics, including research and development spending, manufacturing capability and concentration of high-tech public companies."
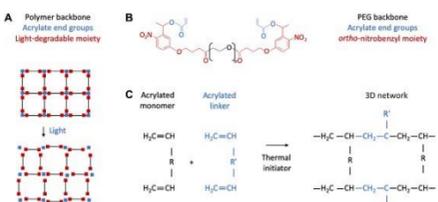
Source: Bloomberg (18 January 2020)

MACHINE LEARNING
New Research Uses Physiological Cues to Distinguish Computer-Generated Faces from Human Ones

"'Recent advances in machine learning and computer graphics have led to the rapid development of deep fakes, where the face of a real person in a video is replaced by a computer generated one,' notes JEI Editor-in-Chief Karén Egiazarian."

Source: EurekAlert! (21 January 2020)

MATERIALS SCIENCE
Ingestible Medical Devices Can Be Broken Down with Light

Source: Science Advances

"MIT engineers have now come up with a way to trigger such devices to break down inside the body when they are exposed to light from an ingestible LED."
Read about the research in Science Advances.

Source: Science Daily (17 January 2020)

MEDIA & SOCIETY
Stanford Researchers Propose 'Human Screenome Project' to Study the Impacts and Promises of Digital Media

"In a commentary published online today in the journal Nature, the researchers contend that such a project is necessary to test the widely held assumptions that digital media are, at least partly, both responsible for and provide solutions to many of our most pressing health and social problems."
Also take a look at the Human Screenome Project.

Source: Stanford (15 January 2020)

TECHNOLOGY
Top Tech 2020

"Here are some of the technologies you'll be reading about this year."
Also check out these 14 Tech Trends to Watch Closely in 2020.

Source: IEEE Spectrum (January 2020)

TELECOMMUNICATIONS
6G and the Reinvention of Mobile

"… the recent advent of wireless brain-computer interfaces and implants will boost this field and introduce new use-cases that require 6G connectivity. Humans will interact with their environment and other people using discrete devices – some worn, some implanted, some embedded in the surrounding environment."

Source: Engineering and Technology (20 January 2020)