Weekly Discovery

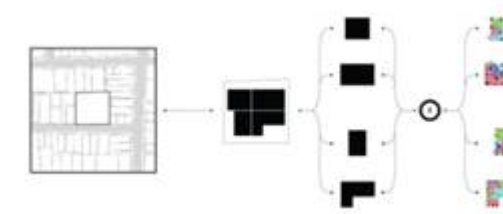## We SHARE to inspire and ignite ideas!

13 APRIL 2020 – 17 APRIL 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

---

ARCHITECTURE
Pioneers: 6 Practices Bringing AI into Architecture

"In this article, we tap into how AI could be augmenting, changing design processes, and how architects and other professionals are responding and incorporating these technological advancements into their design work. "

Source: Archdaily (7 April 2020)

CITIES
COVID-19 Could Forever Change How We Travel—For Better Or Worse

"The realities of a post-COVID-19 world will pose new challenges to cities and transportation systems in particular—from airlines and light-rail networks to ride-hailing platforms and even micro-mobility services."

Source: FAST Company (13 April 2020)

CITIES
The Pandemic Could Be an Opportunity to Remake Cities

"In that shift, urbanists see a chance to save city dwellers not just from the sweep of a pandemic, but from the auto-centric culture that has dominated urban life for decades. They want to prioritize the movement of people—pedestrians, cyclists, transit users, and their ilk—over cars."

Source: Wired (Apr 13 2020)

COVID 19
Finding Community During A Pandemic

"In early March, the first cases of COVID-19 were reported in my city, Boston…I had not expected my work life on campus to stop so suddenly. My lab mates and I think of our workspace as a home away from home, where we enjoy interacting at lab meetings and over coffee. I felt a pit in my stomach as I realized all that was over for now. I was afraid of feeling isolated. "

Source: Science Mag (10 Apr 2020)

DESIGN
Kiran Zhu's Portable Sanitation Kit Aims To Improve Public Hygiene

"The compact sanitation kit, called the Handy Capsule, contains four types of health supplies: a disposable mask, hand sanitiser, temperature stickers and alcohol wipes. The soft pebble-shaped case is made from aluminium sheets that have been stamped to take the form of each of the items included inside."

Source: Dezeen (Apr 10 2020)

MACHINE LEARNING
Machine Learning Reveals New Candidate Materials For Biocompatible Electronics

"A family of self-assembling peptides, called π-conjugated oligopeptides, has shown promise for becoming the basis of the next-generation of these electronic, biocompatible materials. But identifying the right molecular sequences to create the optimal self-assembled nanostructures would require testing thousands of possibilities that each take approximately one month to test in the lab."

Source: University of Chicago (8 April 2020)

MEDICAL DEVICES
University Converts CPAP Machines into Ventilators

"CPAP machines are commonly used by sleep apnea patients to help maintain an open airway during recumbent sleep. Engineers at Auburn University's Department of Mechanical Engineering designed the RE-INVENT device as an accessory that would repurpose a household CPAP machine."

Source: Medgadget (8 Apr 2020)

PHYSICS
Giant Leap in Magnet Research Leading to Faster Electronics

"The results are groundbreaking because they represent proof of concept showing that antiferromagnetic devices can operate on the terahertz level — or calculations completed in a trillionth of a second."
Read more in Science.

Source: Science Tech Daily (12 April 2020)

PHYSICS
Scientists use the Tokyo Skytree to test Einstein's theory of general relativity

"scientists from the RIKEN Center for Advanced Photonics and Cluster for Pioneering Research used two finely tuned optical lattice clocks, one at the base and one on the 450-meter observatory floor of Tokyo Skytree, to make new ultraprecise measurements of the time dilation effect predicted by Einstein's theory of general relativity."

Source: RIKEN (9 April 2020)

PROSTHETICS
Innovative Brain–Machine Interface Set To Improve Prosthetics And Brain Research

"To scale-up and be able to record larger numbers of neurons, Obaid explains the research team had to create a brain–machine interface that was not only capable of recording from thousands of signals simultaneously, but also capable of integrating well with the brain and causing minimal damage."

Source: Physics World (Apr 9 2020)

ROBOTICS
Europe; Product Leadership Award - The Professional Service Robots Market

Figure 3: Beam Robot

"Professional service robots are mainly used in hospitality, healthcare, construction, agriculture, and fulfilment settings. According to Frost & Sullivan, the professional service robot market is expected to grow at a compound annual growth rate (CAGR) of 22 to 25% over the next three years.."

Source: Frost & Sullivan (9 Apr 2020)

ROBOTICS
Thanks To 'Flexoskeletons,' These Insect-Inspired Robots Are Faster And Cheaper To Make

"Engineers at the University of California San Diego have developed a new method that doesn't require any special equipment and works in just minutes to create soft, flexible, 3D-printed robots. "
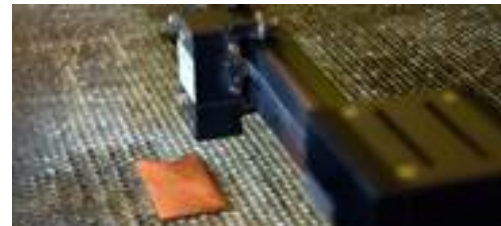
Source: UC San Diego (8 April 2020)

SMART CITIES
How To Use Smart City Technology To Measure Social Distancing

"Using computer vision and image processing, our team at the Urban Observatory has developed algorithms that can automatically measure social distancing in public areas."

Source: TechXplore (10 April 2020)

TECHNOLOGY
Laser Treatment Turns Metal Surfaces Into Instant Bacteria Killers

"Purdue University engineers have created a laser treatment method that could potentially turn any metal surface into a rapid bacteria killer – just by giving the metal's surface a different texture." Read more in Wiley.

Source: Science Tech Daily (12 April 2020)

VR
Forget Video Conferencing—Host Your Next Meeting in VR

"A viral video from filmmaker H.P. Mendoza perfectly captured the awkwardness of video conferences: people frequently talk over each other, someone seems to always have microphone or camera issues, and there's often lag. These shortcomings may provide an opportunity for virtual reality (VR) technology as leading VR hardware makers start to incorporate gesture, eye gaze, and facial expression tracking into their products."

Source: IEEE SPECTRUM (13 Apr 2020)

WEARABLES
A Sweat Sensing Patch Aimed at Athletes Takes on COVID-19

"Epicore Biosystems has been working on wearable sweat sensors for athletes. Now the startup aims to use the patches to fight the coronavirus pandemic.This wearable, Ghaffari said, can be retrofitted for health care workers. If placed inside personal protective masks, it could track changes in respiration rate, temperature, and moisture; Epicore is currently working with partners yet to be announced to fast-track that project."

Source: IEEE Spectrum (10 Apr 2020)