

Weekly Discovery

We SHARE to inspire and ignite ideas!

28 September – 2 October 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

AI
The Next Big Breakthrough In AI Will Be Around Language



"GPT3, developed by OpenAI, indicates that the 2020s will be about major advances in language-based AI tasks."

Source: [Harvard Business Review](#) (23 September 2020)

ANALYTICS
Overpriced? TUD Researchers Explain Artificial Price Increases In The Taxi App Uber



"By using analytical methods from game theory, Schröder and his colleagues demonstrate when the strategy is profitable. The researchers have developed a model that enables the identification of offline tactics based on price trends without knowing the exact ratio of availability to demand. They analysed price data of the service in 59 cities around the world."

Source: [TUD](#) (24 September 2020)

APP
New Research From Fred Hutch Shows That An App Can Dramatically Help Smokers Quit



"An app developed by the Fred Hutchinson Cancer Research Center is nearly four times more effective at helping smokers quit than the average success rate for those trying to kick cigarettes."

Source: [Geek Wire](#) (28 September 2020)

BIOTECH
App Analyzes Coronavirus Genome On A Smartphone



"The app Genopo, developed by the Garvan Institute of Medical Research, in collaboration with the University of Peradeniya in Sri Lanka, makes genomics more accessible to remote or under-resourced regions, as well as the hospital bedside."

Source: [Phys.org](#) (25 September 2020)

COVID-19
How MIT's Rocket, Electric Car, And Solar Vehicle Teams Have Adjusted To The Pandemic



"Here, juniors Max Kwon, president of the MIT Rocket Team; Jorge Nin, MIT Motorsports captain; and Aditya Mehrotra, captain of MIT Solar Electric Vehicle Team describe how the pandemic has affected their operations and plans for the future. Interviews were edited for length and clarity."

Source: [MIT News](#) (24 September 2020)

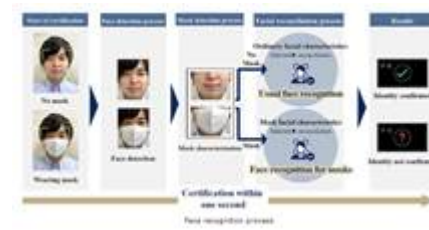
ELECTRIC POWER
How The Food Chain Can Keep The Electricity Flowing



"A recent publication of ours shows that the bio-inspired grid designs perform significantly better than the traditionally designed grids when we put them through contingency analyses," Layton said.

Source: [ASME](#) (29 September 2020)

FACIAL RECOGNITION
NEC Face Recognition Engine Provides Highly Accurate Results Even When Face Masks Are Worn



"NEC Corporation has announced the strengthening of its face recognition technology, already recognized as the world's most accurate(1), with the development of a new face recognition engine that provides high-precision certification even when masks are worn."

Source: [ACN Newswire](#) (25 September 2020)

GENERATIVE DESIGN
AI Planners In Minecraft Could Help Machines Design Better Cities



"The annual Generative Design in Minecraft (GDMC) competition asks participants to build an artificial intelligence that can generate realistic towns or villages in previously unseen locations. The contest is just for fun, for now, but the techniques explored by the various AI competitors are precursors of ones that real-world city planners could use."

Source: [MIT News](#) (22 September 2020)

HEALTHCARE TECHNOLOGY
Suzanne Brewer Develops "Segway-Style" Wheelchair That Allows Users To Stand Upright



"London architect Suzanne Brewer has created a prototype wheelchair with only two wheels and a saddle seat that takes the user from seated to standing in one fluid movement."

Source: [Dezeen](#) (28 September 2020)

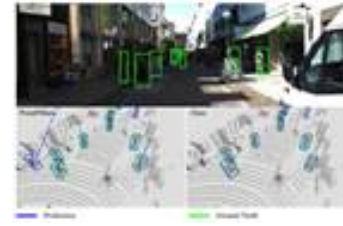
IoT
Indoor Air-Quality Monitoring Can Allow Anxious Office Workers to Breathe Easier



"IoT sensors measure carbon dioxide, relative humidity, and particulates to give indirect assessments of whether an indoor space is safe."

Source: [IEEE Spectrum](#) (28 September 2020)

LIDAR
Sequential Fusion For 3D Pedestrian Detection Using Lidar Point Cloud And Semantic Segmentation



"3D pedestrian detection is one of the most difficult tasks in autonomous driving. It typically uses two data acquisition sources: LIDAR and camera. Combining these two sensors should be beneficial; however, improper fusion methods lead to worse results than LIDAR-only detection. Read more [here](#)."

Source: [Technology.Org](#) (25 September 2020)

MATERIALS
FSU Researchers Help Develop Sustainable Polymers



"Researchers at the FAMU-FSU College of Engineering have made new discoveries on the effects of temperature on sustainable polymers. Their findings may help the industry to produce plastics that are better for the environment."

Source: [Florida State University](#) (25 September 2020)

MATERIAL SCIENCE
A Clearer View Of What Makes Glass Rigid



"Researchers led by The University of Tokyo employed a new computer model to simulate the networks of force-carrying particles that give amorphous solids their strength even though they lack long range order. This work may lead to new advances in high-strength glass, which can be used for cooking, industrial, and smartphone applications."

Source: [The University of Tokyo](#) (25 September 2020)

PARTICLE PHYSICS
Invention Using Terahertz Radiation Could Make Particle Accelerators 10 Times Smaller



"SLAC scientists have invented a copper accelerator structure that could make future X-ray lasers and accelerators for radiation therapy more compact. It feeds terahertz radiation into a tiny cavity to boost particles to tremendous energies."

Source: [SciTechDaily](#) (27 September 2020)

TECHNOLOGY
Revolutionary Zero-Emissions Power Source: Validating the Physics Behind The New MIT-Designed Fusion Experiment



"This series of papers provides a high level of confidence in the plasma physics and the performance ... This sets a solid basis for the device's operation once constructed, according to Greenwald."

Source: [SciTechDaily](#) (29 September 2020)

WEARABLES
Team Develops Wearable Sensor To Help People With Inflammatory Bowel Disease



"The study is the first to establish that CRP is present in human sweat and the first to show that the two biomarkers can be detected in sweat."

Source: [EurekAlert!](#) (28 September 2020)