Weekly Discovery

We SHARE to inspire and ignite ideas!

17 JUNE 2019 - 21 JUNE 2019

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 Printed Tissues and Organs Without the Scaffolding

"Now, a research team led by Eben Alsberg, the Richard and Loan Hill Professor of Bioengineering and Orthopaedics at the University of Illinois at Chicago, has developed a process that enables 3D printing of biological tissues without scaffolds using 'ink' made up of only stem cells."

Source: University of Illinois at Chicago (17 June 2019)

ACADEMIC INTERGRITY

What Universities Can Learn from One of Science's Biggest Frauds

"Detailed analysis of misconduct investigations into huge research fraud suggests institutional probes aren't rigorous enough."

Source: Nature (18 June 2019)

ARTIFICIAL INTELLIGENCE

Adobe Research and UC Berkeley: Detecting Facial Manipulations in Adobe Photoshop

"Trust in what we see is increasingly important in a world where image editing has become ubiquitous – fake content is a serious and increasingly pressing issue."

Source: Adobe Blog (14 June 2019)

ARTIFICIAL INTELLIGENCE

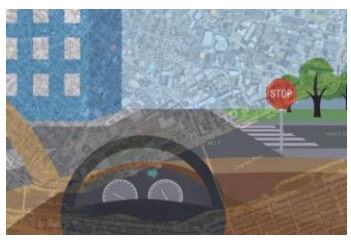
Artificial Intelligence Sees Construction Site Accidents Before They Happen

"A construction site is a dangerous place to work, with a fatal accident rate five times higher than that of any other industry … Construction companies are developing an AI system that predicts worksite injuries - an example of the growing use of workplace surveillance."

Source: MIT Technology Review (14 June 2019)

AUTONOMOUS VEHICLE

New AI System Makes Autonomous Vehicle Navigation More Humanlike

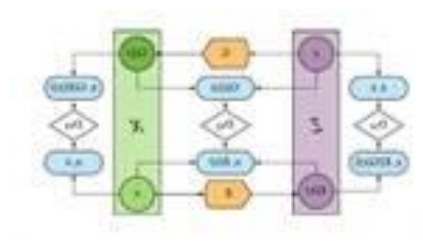


"A paper delivered by MIT researchers at the International Conference on Robotics and Automation last month describes a novel approach to AI for driverless vehicles. Their new system will draw on the fact that human drivers tend to be quite adept at negotiating never-before-seen terrain from behind the wheel."

Source: Engineering.com (17 June 2019)

DATASET

A Shortcut for Anomaly Detection



"A*STAR scientists have designed sophisticated machine learning techniques that are more efficient at identifying anomalies in datasets."

Source: A*STAR Research (14 June 2019)

HEALTHCARE

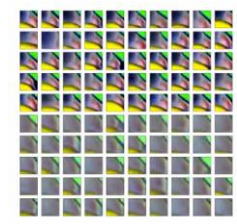
New Technology Could Turn Every Smartphone into a Skin Cancer Detector

"Skin cancer accounts for one of the largest number of cancer diagnoses in Australia each year."

Source: Create (17 June 2019)

MACHINE LEARNING

ELSI Researchers Use Biological Evolution to Inspire Machine Learning



"In a new study published in the journal Artificial Life ... examine the connection between biological evolutionary open-endedness and recent studies in machine learning …"

Source: EurekAlert! (18 June 2019)

MACHINE LEARNING

Researchers Launch 26K+ Object Dataset to Help Robots Learn Shapes

"PartNet dataset includes more than 573,000 fine-grained part annotations for better robot task completion."

Source: Robotics Business Review (17 June 2019)

MATERIALS SCIENCE

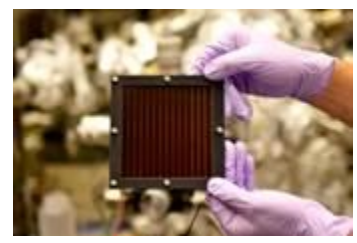
Penn Engineers Demonstrate Superstrong, Reversible Adhesive That Works Like Snail Slime

"The snail's slimy secretion works its way into the pores found on even seemingly smooth surfaces, then hardens, providing strong adhesion that can be reversed when the slime softens. Penn Engineers have developed a new material that works in a similar way."

Source: Penn Engineering (17 June 2019)

MATERIALS SCIENCE

'Self-Healing' Polymer Brings Perovskite Solar Tech Closer to Market

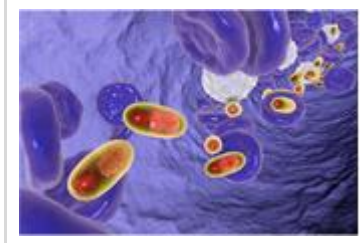


"A protective layer of epoxy resin helps prevent the leakage of pollutants from perovskite solar cells (PSCs). Adding a 'self-healing' polymer to the top of a PSC can radically reduce how much lead it discharges into the environment. This gives a strong boost to prospects for commercializing the technology."

Source: EurekAlert! (17 June 2019)

NANOTECHNOLOGY

How Nanotech Powers Precision Medicine



"It's behind everything from narrowly targeted drug delivery to microchips you can swallow … One major focus for our team is developing polymers to deliver drugs continuously and at controlled rates for prolonged periods of time … Another exciting application of biomedical and technological innovation is telemedicine, or medical treatment from a distance."

Source: Scientific American (12 June 2019)

NEW MATERIAL

New Material Could Create a Better Recyclable Chip Bag

"Rip open a bag of chips and you'll find a shiny, silver material staring back at you. This metallized film helps keep packaged foods like cookies and energy bars tasting fresh by preventing gases from leaking out (or in)."

Source: Discover Magazine (12 June 2019)

ROBOT KINEMATICS

The Brain in the Machine

"MIT is building robots that use full-body teleoperation to move with greater agility … Our goal is to build an agile quadruped that transforms into a skilled bipedal robot."

Source: IEEE Spectrum (June 2019)

ROBOTICS

A New Chip Lets Robots "Imagine" Their Actions Before They Make a Move

"Robots that can rapidly plan out their movements could accelerate factory automation - and help keep fragile humans safe."

Source: MIT Technology Review (17 June 2019)

SMART GLASS

New Research Sheds Light on Improving 'Smart Glass'

"Chemists at Colorado State University have devised a potentially major improvement to both the speed and durability of smart glass by providing a better understanding of how the glass works at the nanoscale. As they report in a paper in the *Proceedings of the National Academy of Sciences*, their research offers an alternative nanoscale design for smart glass."

Source: Materials Today (14 June 2019)

To view past Weekly Alerts CLICK HERE
For more articles or in-depth research, contact us at library@sutd.edu.sg