

Weekly Discovery

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24 December 2018 - 28 December 2018

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

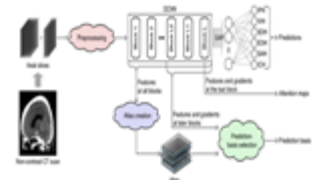
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Artificial Intelligence & Data Science	Aviation	Cities
HealthCare	Robotics & Automation	Design & Innovation
Cybersecurity	Digital Design & Fabrication	Advanced Manufacturing

AI & HEALTHCARE

Researchers Develop Artificial Intelligence System to Diagnose, Classify Brain Hemorrhages

Fig. 1. System overview.



"Such a system could become an indispensable tool for hospital emergency departments evaluating patients with symptoms of a potentially life-threatening stroke, allowing rapid application of the correct treatment."

Source: [News-Medical.net](#) (21 December 2018)

ARCHITECTURE

Top 10 Architecture of 2018



"Up close, its clunky detailing leaves something to be desired, but the powerful sculptural form contains a generous new "public room" for the city, along with great pair of exhibition spaces where the fascinating story of Scottish design is told."

Source: [The Guardian](#) (19 December 2018)

ARTIFICIAL INTELLIGENCE

AI Index 2018 Report



"The AI Index is an effort to track, collate, distill, and visualize data relating to artificial intelligence. It aspires to be a comprehensive resource of data and analysis for policymakers, researchers, executives, journalists, and the general public to develop intuitions about the complex field of AI."

Source: [Stanford University](#) (December 2018)

BATTERIES

Lean Electrolyte Design Is a Game-Changer for Magnesium Batteries

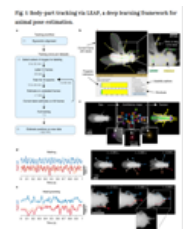


"The battery allows it to store and discharge far more energy than earlier magnesium batteries. They used a chloride-free electrolyte, another change from the traditional electrolyte used by magnesium batteries, which enabled the discovery."

Source: [University of Houston](#) (21 December 2018)

COMPUTER SCIENCE

Translating the 'Language of Behavior' with Artificially Intelligent Motion Capture



"The method can be used broadly, across animal model systems, and it will be useful to measuring the behavior of animals with genetic mutations or following drug treatments ... software being adopted by a number of other labs."

Source: [Science Daily](#) (20 December 2018)

COMPUTER VISION

New AI Computer Vision System Mimics How Humans Visualize and Identify Objects



"The approach is made up of three broad steps. First, the system breaks up an image into small chunks. Second, the computer learns how these viewlets fit together to form the object. And finally, it looks at what other objects are in the surrounding area identifying the primary object."

Source: [UCLA Samueli School of Engineering](#) (18 December 2018)

DESIGN

The 9 Big Design Trends of 2019

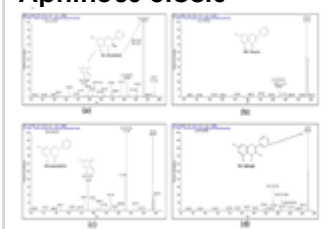


"In 2019, people will be more than mere data points; it's a designer's job to make sure of it. Here are nine key design predictions for 2019."

Source: [Fast Company](#) (19 December 2018)

DRUG DELIVERY

Propolis-Based Niosomes as Oromuco-Adhesive Films: A Randomized Clinical Trial of a Therapeutic Drug Delivery Platform for the Treatment of Oral Recurrent Aphthous Ulcers

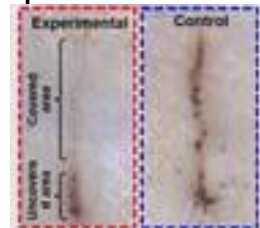


"This oromuco-adhesive films which offer controlled and targeting drug delivery can be proposed as a new therapeutic strategy in the treatment of oral recurrent aphthous ulcer."

Source: [Scientific Reports](#) (21 December 2018)

E-BANDAGE

E-Bandage Generates Electricity, Speeds Wound Healing in Rats

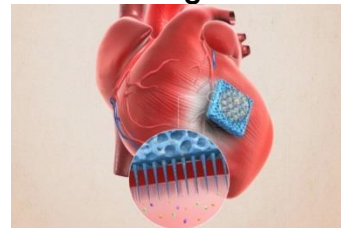


"Now, researchers have developed a self-powered bandage that generates an electric field over an injury, dramatically reducing the healing time for skin wounds in rats."

Source: [Science Daily](#) (19 December 2018)

HEALTHCARE

Microneedle Patch Heals Heart Attack Damage



"Researches at North Carolina State University (NCSU) and University of California, Los Angeles (UCLA) have developed a biocompatible microneedle patch topped with a layer of cardiac stromal cells (CSCs) enveloped in fibrin gel. When positioned on damaged regions of a rat's or pig's heart, the patch led to heart repair and protection of cardiac function."

Source: [Physics World](#) (19 December 2018)

MARINE CONSERVATION

A Blueprint for Blue Waters



"In the third Singapore Blue Plan, launched on October 13, 2018, the group highlights the state of Singapore's coastal environment and outlines six recommendations for preserving the rich biodiversity of the country's shores."

Source: [Asian Scientist](#) (18 December 2018)

MATERIALS SCIENCE

Sustainable 'Plastics' Are on the Horizon



"New sustainable biopolymer technology developed by Tel Aviv University researchers may one day free the world of its worst pollutant."

Source: [EurekAlert!](#) (24 December 2018)

MEDICAL ENGINEERING

Sound Waves Levitate Multiple Objects



"In the perhaps not so distant future, surgeons could perform a range of medical procedures all without touching the patient, thanks to advancements in 'acoustic tweezers'."

Source: [Science Daily](#) (19 December 2018)

ROBOTICS

Watch: Robots Swarm into Organic Formations



"By introducing biological principles of self-organization to swarm robotics, researchers have found it possible to get hundreds of coin-size robots to work together based only on local communication and movement — and without an underlying master plan. The research was published today in [Science Robotics](#)."

Source: [Engineering 360](#) (19 December 2018)

SENSORS

A Safe, Wearable Soft Sensor

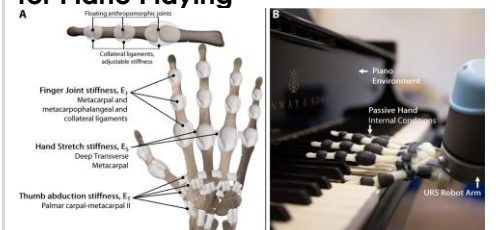


"Harvard University researchers have developed a soft, non-toxic wearable sensor that unobtrusively attaches to the hand and measures the force of a grasp and the motion of the hand and fingers."

Source: [Harvard John A. Paulson School of Engineering and Applied Sciences](#) (21 December 2018)

SOFT ROBOTICS

An Anthropomorphic Soft Skeleton Hand Exploiting Conditional Models for Piano Playing



"In this article, we considered the passive dynamics of mechanically complex systems, such as a skeleton hand, as an approach to improving adaptability, dexterity, and richness of behavioral diversity of such robotic manipulators."

Source: [Science Robotics](#) (19 December 2018)