

Weekly Discovery

We SHARE to inspire and ignite ideas!

25 June 2018 - 29 June 2018

ARTIFICIAL INTELLIGENCE

Unmasking A.I.'s Bias Problem



While AI is known to assist in decision-making, the answers that AI systems provide are only as good as the data loaded by humans. Humans do have bias, thus there should be more transparency on what goes into the 'black box' of AI.

Source: [Fortune](#) (26 June 2018)

AUGMENTED REALITY

PayPal Secures Patent for Augmented Reality Glasses



With increasing PayPal transactions, this patent can enhance user experience during purchase. Also read [Global E-commerce Statistics](#) & [PayPal Statistics](#) for more details.

Source: [IPWatchdog](#) (24 June 2018)

BUILDING INNOVATIONS

The Study on the Integrated Control System for Curtain Wall Building Façade Cleaning Robot

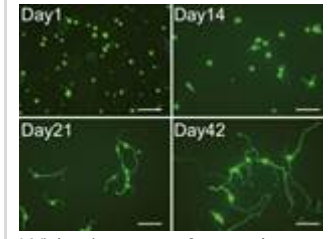


This study looks into building maintenance with a focus on façade cleaning using robots. The researchers proposed a new control system that automates the cleaning process.

Source: [Automation in Construction](#) (October 2018)

CELLULAR REPROGRAMMING

Transdifferentiation of Human Adult Peripheral Blood T Cells into Neurons



With just a few drops of blood, the proposed approach converts blood cells directly into tens of thousands of nerve cells. This will enable better understanding of autism and types of major depression.

Source: [Proceedings of the National Academy of Sciences](#) (19 June 2018)

CITIES

Meet the Five Urban Chinas



Read Brookings Metro's latest issue of Global Metro Monitor on global economics and how China owns one-third of the world's 300 largest metropolitan economies.

Source: [Brookings](#) (20 June 2018)

DRONE

Tokyo Researchers' Dragon Drone Can Shape-Shift on the Fly



Need to change shape on the fly? A flying arm drone can do this by transforming its shape to fit through small spaces and perform tasks. Also watch a short video included.

Source: [Dronelife.com](#) (22 June 2018)

GAMIFICATION

Can Science-Based Video Games Help Kids with Autism?



Studies have shown that playing video games does improve a range of abilities, such as balance, attention and gaze control, in children with autism.

Source: [Science](#) (22 June 2018)

MATERIALS SCIENCE

Blubber Breakthrough: MIT Engineers Increase Wetsuit Survivability



This wetsuit, made of ultra-high thermal insulation neoprene, could empower its wearer to stay 2 to 3 hours in water below 10°C, while the current technology can only sustain less than 1 hour.

Source: [The Chemical Engineer](#) (25 June 2018)

MATERIALS SCIENCE

Unprecedented Control of Polymer Grids Achieved



Scientists applied a new two-step process to create high-quality organic polymers with crystalline 2D structures. The findings provide more possibilities for future water purification and power storage research.

Source: [Science Daily](#) (21 June 2018)

MEDICAL SCIENCES

Computational Model Analysis Reveals Serotonin Speeds Learning



Researchers discovered that by boosting serotonin, a chemical in the brain, and adding in cognitive behavioural therapy, it speeds up learning and focuses on decision-makings. Read more at [Nature Communications](#).

Source: [Science Daily](#) (26 June 2018)

ORAL DELIVERY

Delivering Insulin in a Pill



A new technique of encapsulating insulin-ionic liquid, which resists breakdown by gastric acid in the gut. This allows oral consumption of insulin instead of the traditional injections. Read more at [PNAS](#).

Source: [Harvard University](#) (25 June 2018)

POWER GRID

Building a Weather-Smart Grid



The power produced by wind, water and sunlight can be erratic due to weather patterns. Learn how we need to redesign power grids to maximise the full potential of these renewable sources.

Source: [Scientific American](#) (July 2018)

PROSTHETIC ANKLE

This Smart Prosthetic Ankle Adjusts to Rough Terrain



Unlike traditional prosthetic limbs that absorb shocks passively, this prosthetic ankle leverages on sensors, actuators and motors for motion detection and better assistance to its wearer while walking up and down stairs.

Source: [Tech Crunch](#) (25 June 2018)

SELF-SUPPORTING SHELL

An Unexpected Alliance: Ferrocement Meets Origami Art



Indian architect Anupama Kundoo utilised ferrocement, a highly versatile form of reinforced cement, and married it with origami art to come up with a children's pavilion prototype.

Source: [Detail](#) (June 2018)

SENSORS

3D Printed Water Sensor System Streamlines Fish-Farming in Singapore



Singapore based companies Sensocore and Creat3D collaborated to improve the manufacturing process of their sensor products through 3D printing, enabling the production of a variety of new sensor products.

Source: [3D Printing Industry](#) (21 June 2018)

TINY COMPUTER

The 'World's Tiniest Computer' Is Smaller Than a Grain of Rice. Much Smaller.



Researchers in the US have come up with the world's smallest computer which serves as a precision temperature sensor. It may also find its place in biomedical diagnosis, surveillance, and oil reservoir monitoring.

Source: [Digital Trends](#) (25 June 2018)

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