

Weekly Discovery

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10 JUNE 2019 - 14 JUNE 2019

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

3D PRINTING
How 3D Printing Is Making Prosthetics Cheap and Accessible, Even in Remote Places



"In Guatemala, a hospital is using a 3D scanner to create templates for a prosthetic. The affordable process makes access to 3D-printed limbs possible even when the hospital itself can't afford it."

Source: [Fast Company](#) (4 June 2019)

4D PRINTING
Scientists Enter New Dimension with 4D-Printed Lifesaving Device



"4D printing creates 3D objects that can change shape over time. In the US, researchers from the University of Michigan have managed to print and implant 4D airway splints in three infants with a rare life-threatening airway disease."

Source: [South China Morning Post](#) (8 June 2019)

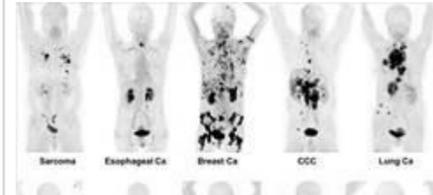
ARTIFICIAL INTELLIGENCE
Creating an AI Can Be Five Times Worse for the Planet Than a Car



"New estimates suggest that the carbon footprint of training a single AI is as much as 284 tonnes of carbon dioxide equivalent – five times the lifetime emissions of an average car."

Source: [New Scientist](#) (6 June 2019)

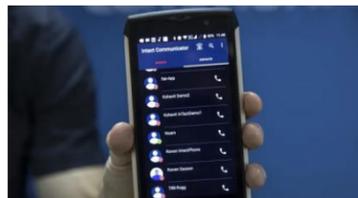
BIOENGINEERING
New Radiotracer Can Identify Nearly 30 Types of Cancer



"A novel class of radiopharmaceuticals has proven effective in non-invasively identifying nearly 30 types of malignant tumors. Researchers were able to image a wide variety of tumors with very high uptake and image contrast, paving the way for new applications in tumor characterization, staging and therapy."

Source: [Society of Nuclear Medicine & Molecular Imaging](#) (7 June 2019)

CYBERSECURITY
The Battle in Israel to Create an Unhackable Phone

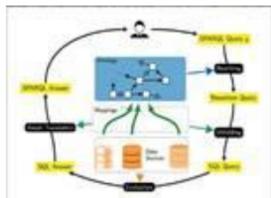


"The phone, for instance, can block attempts to extract its data via a cable, and the bespoke version of WhatsApp that it installs would have repelled NSO's most recent hack, when it's clients used a vulnerability in the supposedly secure messaging to infiltrate phones remotely, he said."

Click [here](#) to register for your FT account.

Source: [Financial Times](#) (10 June 2019)

DATA VISUALISATION
Virtual Knowledge Graphs: An Overview of Systems and Use Cases



"In this paper, we present the virtual knowledge graph (VKG) paradigm for data integration and access, also known in the literature as Ontology-based Data Access."

Source: [Data Intelligence](#) (Spring 2019)

DIGITAL DISRUPTIONS
Disruption Starts with Unhappy Customers, Not Technology



"What these companies seem to have missed is that the most common and pervasive pattern of disruption is driven by customers. They are the ones behind the decisions to adopt or reject new technologies or new products."

Source: [Harvard Business Review](#) (6 June 2019)

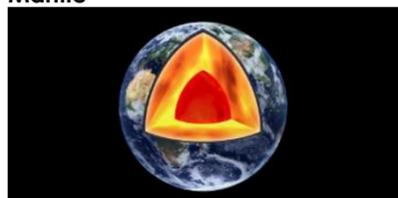
DIMENSIONS
Dimensions.Guide Creates Online Database of Scaled Figures and Drawings



"Architect Bryan Maddock created a public research database dubbed [Dimensions.Guide](#) as a comprehensive reference for dimensioned drawings ... The guide offers resources to professional designers, students, and the public as a way to enhance global collective awareness of dimensions in everyday life."

Source: [archdaily](#) (7 June 2019)

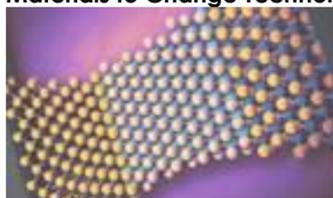
MAGNETISM
Magnetism Discovered in the Earth's Mantle



"An international team of researchers from Germany, France, Denmark and the USA has now demonstrated that a form of iron oxide, hematite, can retain its magnetic properties even deep down in the Earth's mantle."

Source: [University of Münster](#) (5 June 2019)

MATERIALS SCIENCE
Researchers 'Stretch' the Ability of 2D Materials to Change Technology



"University of Rochester researchers have combined 2D materials with oxide materials in a new way, using a transistor-scale device platform, to fully explore the capabilities of these changeable 2D materials to transform electronics, optics, computing and a host of other technologies."

Source: [Phys.org](#) (10 June 2019)

MATERIALS SCIENCE
UCI Scientists Create New Class of Two-Dimensional Materials



"In a paper published this week in [Nature](#), materials science researchers at the University of California, Irvine and other institutions unveil a new process for producing oxide perovskite crystals in exquisitely flexible, free-standing layers."

Source: [University of California, Irvine](#) (6 June 2019)

ORGANOIDS
Organoids-on-a-Chip



"In this Review, we explore organ-on-a-chip technology as a platform to fulfill this need and examine how this technology may be leveraged to address major technical challenges in organoid research."

Source: [Science](#) (7 June 2019)

PRODUCT DESIGN
Pistons Are Muscling Up



"300-year-old piston design reinvented with soft flexible materials can produce greater forces with higher energy efficiencies, and has potential for a plethora of applications."

Source: [Wyss Institute for Biologically Inspired Engineering at Harvard](#) (6 June 2019)

RADAR
A Radar to Watch You in Your Car



"[Vayyar Imaging](#), a firm based in Tel Aviv, says it has a radar chip that can form a three-dimensional view of what's going on inside a car as well as outside of it."

Source: [IEEE Spectrum](#) (7 June 2019)

ROBOTICS
Science Robotics



"This booklet features eleven articles published in [Science Robotics](#). They include research advances in bioinspired, space, medical, and soft robotics as well as commentary on related issues."

Source: [AAAS](#) (2019)

TRANSPORTATION
Driverless Cars Are Coming for the Airlines



"Our research has revealed just how much people's travel preferences could shift and found a new potential challenge to the airline industry."

Source: [Fast Company](#) (10 June 2019)

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