

Weekly Discovery

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29 October 2018 - 2 November 2018

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

3D PRINTING
Student Develops Prosthesis That Helps Ballerinas Perfect Technique



"A prosthetic leg that is specially designed to allow amputees to perform ballet. It takes on a form that perfects the pointe technique, the part of classical ballet technique that concerns *pointe work*, in which a ballet dancer supports all body weight on the tips of fully extended feet within pointe shoes."
 Source: [designboom](#) (25 October 2018)

5G
Faster, Safer and More Efficient: How 5G Will Change Tomorrow's Cars



"A 5G connection works both ways, and there will be benefits to both the driver and the automaker from being able to draw more data out of the car, including better remote monitoring and faster remote control of autonomous cars."
 Source: [CNET](#) (26 October 2018)

BIOMETRIC TECHNOLOGY
Emirates to Introduce a 'Biometric Path' Passenger System



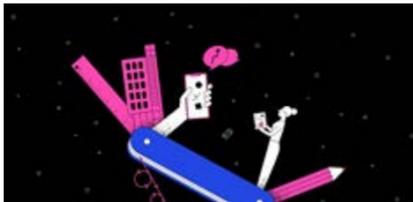
"The implementation, which is said to be the world's first, will enable the airline's passengers to complete check-in for their flight, immigration formalities, enter the Emirates Lounge and board their flights simply by walking across the airport."
 Source: [Airport Technology](#) (20 October 2018)

BLOCKCHAIN
What's the Point of a Blockchain Phone? We Asked an Expert



"... there's something deeply wrong right now because people don't own their digital identities; they don't own their digital data; they don't own their personal data. Whether it's behavioural data, commercial data, health data, browsing data, or something else, all of that is owned by a handful of companies."
 Source: [DigitalTrends](#) (27 October 2018)

DESIGN
The Business Value of Design



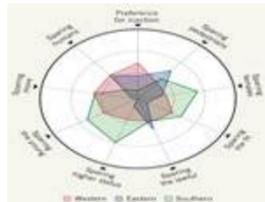
"This McKinsey study of 300 companies reveals what every business needs to know about design for 2019."
 Source: [McKinsey & Company](#) (25 October 2018)

DIGITAL HUMANITIES
Australia Uses Tech to Preserve Its Languages



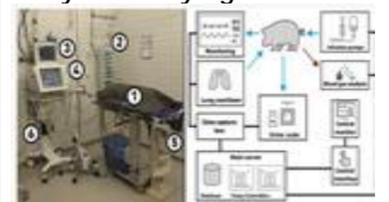
"The Indigenous Language Opie is a 2-foot-tall wooden figure shaped as a robot that carries two digital tablets – one has eyes that follow a child's movements; the other has memory games using recorded stories in indigenous languages and pronunciation guides."
 Source: [U.S. News](#) (30 October 2018)

ETHICS
Self-Driving Car Dilemmas Reveal That Moral Choices Are Not Universal



"Survey maps global variations in ethics for programming autonomous vehicles. The largest ever survey of machine ethics, published today in Nature, finds that many of the moral principles that guide a driver's decisions vary by country."
 Source: [Nature](#) (24 October 2018)

FUZZY LOGIC CONTROL
Fully Automated Life Support: An Implementation and Feasibility Pilot Study in Healthy Pigs



"Five automated subsystems are developed and used for fluid management and control of etCO2 level and ... These parameters are chosen because former studies showed that they had the highest variability hence the highest readjustment needs."
 Source: [Intensive Care Medicine Experimental](#) (December 2018)

MAGNETIC RESONANCE IMAGING
Breakthrough MRI Technology Using Quantum Physics



"The method ... will enable a previously unachievable, highly sensitive quantification of metabolic activity, paving the way for precision diagnostics and better personalized treatment of cardiovascular diseases."
 Source: [News Medical](#) (30 October 2018)

OPTICS
Spinning the Light: The World's Smallest Optical Gyroscope



"Caltech engineers developed a new optical gyroscope that is 500 times smaller than the current state-of-the-art device, yet they can detect phase shifts that are 30 times smaller than those systems."
 Source: [Caltech](#) (25 October 2018)

OPTICS
'Twisted' Fibre Optic Light Breakthrough Could Make Internet 100 Times Faster



"A new development in fibre optics could make internet speeds up to 100 times faster – by detecting light that has been twisted into a spiral."
 Source: [The Guardian](#) (24 October 2018)

RETAIL TECHNOLOGY
Walmart's Test Store for New Technology, Sam's Club Now, Opens Next Week in Dallas



"Walmart's warehouse ... will test out new concepts like mobile checkout, electronic shelf labels, wayfinding technology for in-store navigation, augmented reality, and artificial intelligence-infused shopping."
 Source: [Tech Crunch](#) (29 October 2018)

ROBOTICS
Stanford Researchers Modify Small Flying Robots to Anchor onto Surfaces and Pull Heavy Loads



"Small flying robots can perch and move objects 40 times their weight with the help of powerful winches and two previous inventions – gecko adhesives and microspines."
 Source: [Stanford](#) (24 October 2018)

SCIENTIFIC PUBLISHING
What a Massive Database of Retracted Papers Reveals About Science Publishing's 'Death Penalty'



"The data trove has enabled Science, working with Retraction Watch, to gain unusual insight into one of scientific publishing's most consequential but shrouded practices."
 Source: [Science](#) (25 October 2018)

SENSORS
Optical Sensors Could Offer Portable Alternative to MRI, ECG



"Researchers have developed a system of optical sensors that could replace MRIs and ECGs making administering these tests much easier. These optical sensors use a light-based technique for measuring very weak magnetic fields, such as those produced when neurons fire in the brain."
 Source: [DesignNews](#) (26 October 2018)

SMART TEXTILES
Zaha Hadid Design Develops Base Layer Clothing That Adapts to the Human Body



"Developed in partnership with Zaha Hadid Design, the Odlo 'futureskin' base layer collection combines bio-centric 'organic bodymapping' with material innovation and design expertise to deliver climate control and natural freedom of movement for all sports activities."
 Source: [designboom](#) (29 October 2018)