Weekly Discovery

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AI & DESIGN

Sidewalk Labs Is Using Machine Learning to Make Neighborhood Design Smoother

"Sidewalk Labs, the Alphabet subsidiary focused on urban technology, has been working on a new software tool for generating optimized city layouts … a new computational tool that analyzes a wide array of data to automatically create thousands, or millions, of neighborhood layouts from a baseline design."

Source: The Architect's Newspaper (13 January 2020)

AI & IOT

White Paper: Machine Vision Makes the Move to IoT

"Vision system designers struggle with introducing new features in existing applications. This paper discusses how machine learning and the IoT will impact traditional machine vision applications and offer some insight to system designers for deploying advanced inspection and processing capabilities within existing processes."

Source : IEEE Global Spec (September 2019)

TECH TRENDS

Alibaba's Top 10 2020 Tech Trends

"Here are the highlights from the Academy's predicted 2020 trends in the tech community."

Source: IT Brief (14 January 2020)

ARCHITECTURE

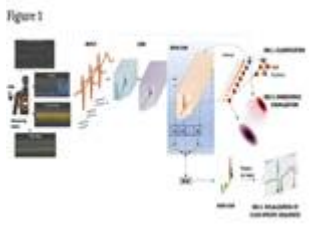
WEsearch Lab Uses 792 Laser-Cut Pieces of Paper to Build 'Wormhole' Installation in India

"Situated on the lawn of the CEPT University campus in Ahmedabad, India, WEsearch Lab has built a temporary structure that explores a labor intensive, low-cost type of architecture in South-East Asian countries. dubbed the 'wormhole' installation, the project has been developed with a budget of just 200 USD, using inexpensive building materials."

Source: designboom (7 January 2020)

ARTIFICIAL INTELLIGENCE

AI Can Detect Low-Glucose Levels via ECG Without Fingerprick Test

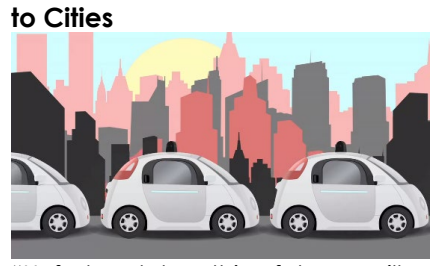


"A new technology for detecting low glucose levels via ECG using a noninvasive wearable sensor, which with the latest artificial intelligence can detect hypoglycemic events from raw ECG signals has been made."

Source: Science Daily (13 January 2020)

AUTONOMOUS VEHICLES

What Self-Driving Cars Will Really Do to Cities



"Unfortunately, this future will almost certainly never come to pass. Self-driving cars, left to their own devices, will likely do more harm than good. To avoid that outcome, we'll have to turn off autopilot and shape the system of autonomous mobility so that it best serves both our needs and the needs of the planet."

Source: Fast Company (11 January 2020)

BIOENGINEERING

Living Robots Built Using Frog Cells

"Now a team of scientists has repurposed living cells - scraped from frog embryos - and assembled them into entirely new life-forms. These millimeter-wide 'xenobots' can move toward a target, perhaps pick up a payload (like a medicine that needs to be carried to a specific place inside a patient) - and heal themselves after being cut."
Read more in PNAS.

Source: Science Daily (13 January 2020)

CONSUMER TRENDS

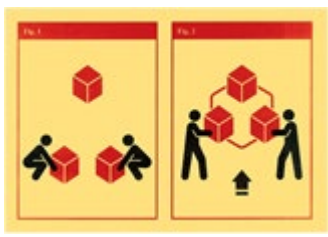
Top 10 Global Consumer Trends 2020

"This free report pinpoints which trends will have the biggest impact on your business and identifies opportunities for growth."

Source: Euromonitor (14 January 2020)

DATA SCIENCE

Eleven Tips for Working with Large Data Sets

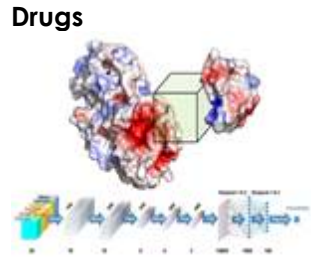


"Big data are everywhere in research, and the data sets are only getting bigger — and more challenging to work with. Unfortunately, says Tracy Teal, it's a kind of labour that's too often left out of scientific training … Here are 11 tips for making the most of your large data sets."

Source: Nature (13 January 2020)

DEEP LEARNING

Deep Learning, 3D Technology to Improve Structure Modeling for Protein Interactions, Create Better Drugs

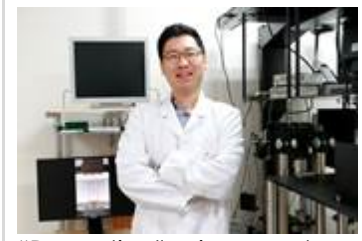


"Purdue University researchers have designed a novel approach to use deep learning to better understand how proteins interact in the body - paving the way to producing accurate structure models of protein interactions involved in various diseases and to design better drugs that specifically target protein interactions."

Source: Purdue University (9 January 2020)

MEDICAL DEVICE

Developed a Band-Aid-Like Sensor to Detect Human Body Conditions in Real-Time



"Dramatically improved sensor stability with complex structural design that mimics snake motions, spider webs, and paper craft. Expected to be applied in various fields such as bio-diagnosis, smart skin, clothes, and livestock diagnosis."

Source: Daegu Gyeongbuk Institute of Science and Technology (7 January 2020)

OUTLOOK

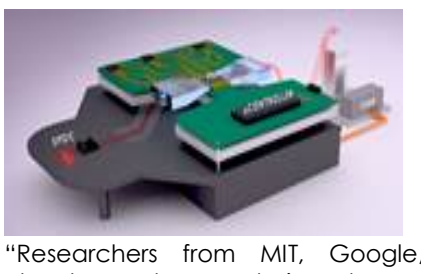
Podcast: A Look Ahead at Science in 2020

"In this episode of the podcast, Nature reporter Davide Castelvecchi joins us to talk about the big science events to look out for in 2020. We'll hear about multiple missions to Mars, a prototype electric car, efforts to prevent dengue, and more."

Source: Nature (8 January 2020)

QUANTUM COMPUTING

How to Verify That Quantum Chips Are Computing Correctly



"Researchers from MIT, Google, and elsewhere have designed a novel method for verifying when quantum processors have accurately performed complex computations that classical computers can't."

Source: MIT News (13 January 2020)

RECYCLING

Captured Carbon Dioxide Could Be Used to Help Recycle Batteries

"Captured carbon dioxide could be used to extract useful metals from recycled technology such as smartphone batteries rather than just being buried underground. The technique could help make it more economical to capture the greenhouse gas before it enters the atmosphere."
Read more in Nature Chemistry.

Source: New Scientist (13 January 2020)

SENSORS

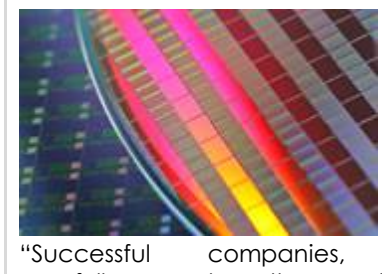
White Paper: A Lidar Designer's Guide to Sensor Technologies for Automotive/Mobility Systems

"Download this white paper to learn the strengths of each LIDAR sensor technology and tips to help design engineers select the best product for their application. This paper will focus on how design engineers for original equipment manufacturers (OEMs) of LiDAR systems can choose between differing sensor technologies."

Source: IEEE Global Spec (13 November 2019)

TECHNOLOGICAL DISRUPTION

What to Do If a New Technology Disrupts Your Industry



"Successful companies, however, carefully assess how the new technology will affect the structure of their industry, and then adapt their business models."

Source: Forbes (6 January 2020)

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