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JANUARY 2019

# SYSTEM BITS: JAN. 2

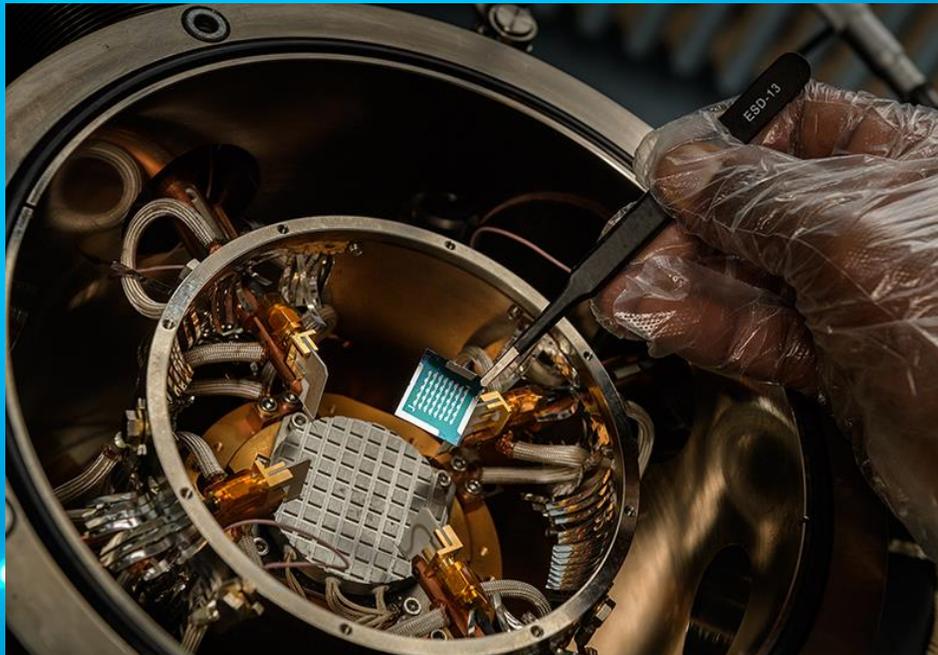
## Princeton plumbs blockchain technology

Researchers at Princeton University's School of Engineering and Applied Science are looking at how blockchain technology can provide secure financial transactions, among other applications. "Early on we realized this was a technology that was not well understood but that a lot of people were interested in," says Ed Felten, the Robert E. Kahn Professor of Computer Science and Public Affairs at Princeton. "There wasn't a coherent, high-quality way of teaching about this technology or explaining it, so we've tried to systematize the knowledge and unsolved problems underlying it." A blockchain ledger is stored electronically in multiple locations across the Internet.

While blockchain technology was initially used to "mine" cryptocurrencies, such as Bitcoin and Ethereum, businesses are now looking to the tech for application development, contracts, and international finance. "I think this will be a story of gradual integration, rather than a story of a revolution," said Arvind Narayanan, an associate professor of computer science at Princeton. "It's an interesting new technology, and a number of us here are working to make that technical footing even stronger." Narayanan began teaching one of the first university classes on blockchain in 2014. The field is still so new that its "killer app" has yet to be discovered. "In some sense, we're still in search of its major application," Felten says. Sending a robot to do the job.

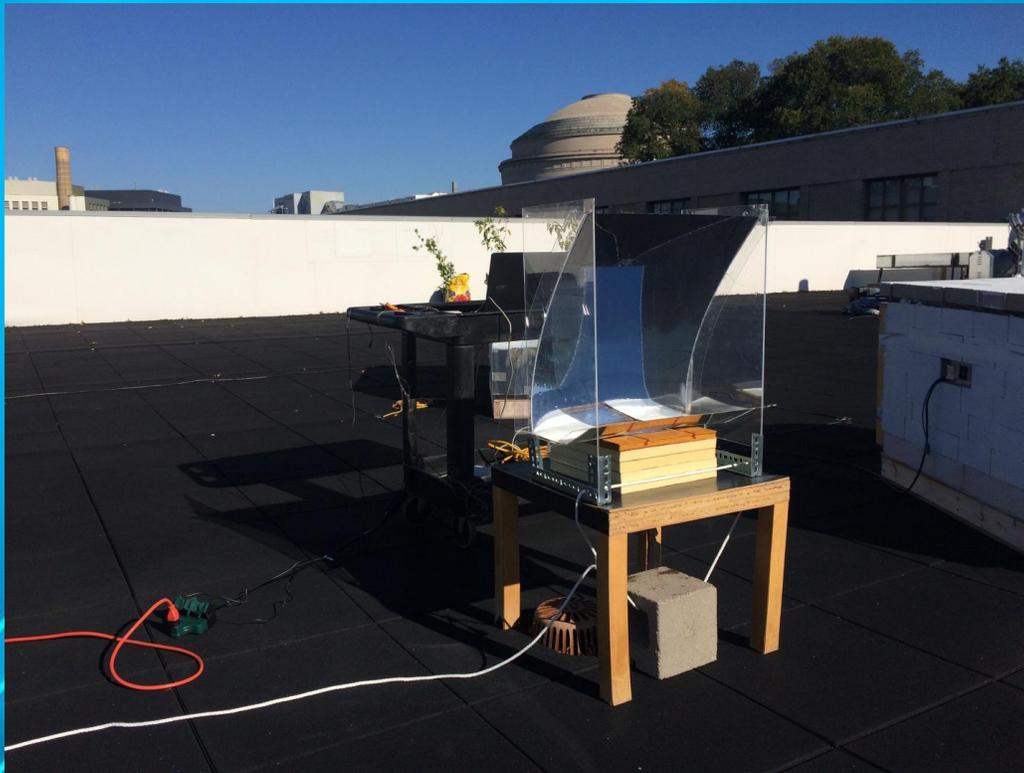


ANYmal is a four-legged robot built to operate in hazardous conditions, especially in places that can be lethal to human workers, ETH Zurich reports. The robot was jointly developed by ANYbotics, an ETH spinoff, and the university's Laboratory for Robotic Systems. The 30-kilogram (66 pounds) machine was subjected to a test run in the sewers of Zurich, Switzerland's largest city and one of the oldest in Europe. Zurich's sewerage system has about 100 kilometers (more than 62 miles) of accessible shafts and drains. The robot boasts four articulated legs and is 50 centimeters (1.64 feet) in height. It has a "head" with a camera and sensors, along with light-emitting diodes to inspect floors and walls in underground facilities. ETH researchers have worked with colleagues from other European universities on the three-year THING (sub-Terranean Haptic InvestiGator) research project. Professor Marco Hutter says, "The robot uses laser sensors and cameras to scan its surroundings.



By identifying irregularities in the surface of the concrete, it can determine where it is at any given moment." ETH researchers have been working on quadrupedal robots since 2009, with the first ANYmal prototype completed in 2015. The slogan of ANYbotics, established in 2016, is "Let Robots Go Anywhere." While the robot was in the sewers, it was recording 500,000 measurements per second, ETH notes. Professor Hutter says, "All the teams will be taking home a huge volume of data to incorporate in their research." Making bridges

smarter Brunel University London is collaborating with the Welding Institute and James Fisher and Sons, a large construction company, on a digital twin of an actual railway and road bridge in Watford, Hertfordshire, England. The physical bridge carrying London Underground's Metropolitan line over the A4145 to Rickmansworth will be embedded with sensors to monitor safety, wear and tear of the infrastructure. "A working digital twin of a structure such as this is cutting-edge," says Dr. Miltiadis Kourmpetis at Brunel Innovation Centre. "The technology is still relatively new." Innovate UK has funded the 26-month project with £1.48 million (about \$1.87 million). "A digital twin is an evolving model of the historical and present behavior of a structure constantly striving to improve its performance. It is indeed something we believe our namesake pioneering engineer would have been proud of," Dr. Kourmpetis adds, referring to Victorian-era engineer Isambard Kingdom Brunel.



WORKSHOP:

## ENTREPRENEURSHIP IN SOLAR FOR F.E

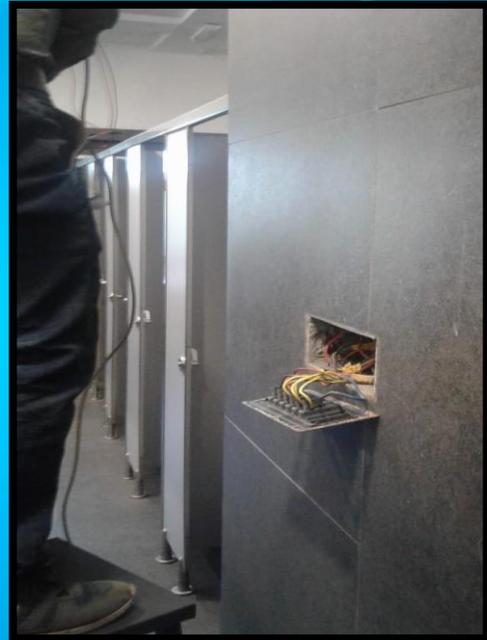


This workshop was conducted on 28<sup>th</sup> December 2018 and 29<sup>th</sup> December 2018 for the first year students on entrepreneurship in Solar by our final year electronics and telecommunication students, Mr. Deep Shah and the group of ISA. They showed the practical installation of solar, shared practical knowledge, discussed market prices with different types of solar panels and their pros and cons. So as this technology is trending the workshop was very useful to our students.

## PROJECT:

# SMART WASHROOM

In today's generation we have sufficient amenities, but what about the future? Our student, Mr. Vishal Soni from T.E EXTC has practically implemented the small measure to save electricity. He has designed a circuit in our college washrooms which senses a person in a washroom and glows the lights ON. If there is no person in the washroom the light goes off thereby saving electricity.



# WORKSHOP ON ROBOTICS



UCoE EXTC team Mr. Sandeep Dubey, Mrs. Sonal Borse and Mr. Sushil Dubey conducted Robotics workshop in Pravin Patil College of Diploma Engineering and Technology and Shankar Narayan College on 9<sup>th</sup> January 2019. 117 students participated in the workshop. The main moto was to create an awarness about the Robotic environment and the trending technologies in todays era.

# WORKSHOP FOR FACULTY

Hands-on experience on Robotics workshop was conducted by Mr. Sandeep Dubey and Mr. Gaurav Shete for EXTC and ETRX Faculties of UCoE. It was held on 5<sup>th</sup> January 2019.

Workshop schedule on Wired and Wireless Robot

- Introduction to upcoming technology – **ROBOTICS.**
- Introduction to wired Robot
- Introduction to wireless Robots
- Controlling and designing wired robot using remote control.
- Controlling wireless robot using Bluetooth and ZigBee.

All the faculty participated enthusiastically.



# ACHIEVEMENTS



Prof. Sandeep Dubey



**Subject areas taught:** Electronics and Telecommunication: Microprocessor, Analog and Digital electronics, Image and Video Processing, VLSI, Mobile Communication. **Research Interest:** Antennas, Signal Processing, Embedded systems

**Achievements:** 1. Research Papers in IEEE xplorer on -"Dual band patch antenna with enhanced gain using metamaterial," - "A Parallel Pipelined Adder Suitable for FPGA Implementation,"

**Experience:** 7+ years of Teaching experience, Currently working as Assistant Professor, EXTC Dept., Universal College of Engineering, Vasai

# INTERNSHIPS

DECEMBER 2018

