

Hot Clicks: DHS Uses Undercover Cryptocurrency Scheme to Bust Dark Web

Rounding up IT and advanced tech-related news impacting government and industry.

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Investigators from Immigration and Customs Enforcement's Homeland Security Investigations posed as cryptocurrency money launderers on the dark web to find people selling illegal narcotics, and according to the Justice Department, it worked — opening more than 90 active cases. Various law enforcement agencies arrested more than 35 alleged dark web vendors including those selling cocaine, marijuana and LSD. Agencies also seized Xanax and opioid fentanyl, and charged defendants

with weapon possession offenses.

Posing as a money launderer for Bitcoin was key, according to Nicholas Weaver, a senior researcher at the International Computer Science Institute at UC Berkeley. “There are so many paths for the dark net dealers to get drugs. There are much fewer paths for them to get cash,” he told Motherboard.

That’s because dark web dealers have to transfer their cryptocurrency to a government-legal currency, and once they move their bitcoins to an exchange to cash out, law enforcement can follow the public ledger to the specific exchange and get those customer records from companies. In this case, authorities can interact directly with the criminals at the point of transfer. Any way you slice it, it’s working; so far in the current fiscal year, HSI’s cryptocurrency seizures have already reached more than \$25 million. [Motherboard](#)

International Space Station’s Newest Astronaut is a Robot

Its name is CIMON — Crew Interactive Mobile Companion — and it’s on its way to the ISS aboard SpaceX’s most recent resupply launch. CIMON is an artificial intelligence assistant designed by Airbus and IBM to help the European Space Agency’s astronauts in daily tasks on the ISS. It’s the size of a medicine ball and weighs 11 pounds, but has the neural network of IBM’s Watson, and crew members will be able to interact with CIMON through voice commands and an accessible database of procedures.

CIMON will even be able to detect and respond to people’s’ moods, according to CIMON project lead at Airbus, Till Eisenberg. It has emotional intelligence and a friendly voice to fit in with crew members, and was trained with real German astronaut Alexander Gerst (so CIMON already has a friend). CIMON’s mission with Gerst started in June and will run through October, and it’ll help geophysicists and volcanologists study crystals on the space station and be the “intelligent camera” to document an on-board medical experiment. But Airbus does have bigger plans for the bot. [TechCrunch](#)

Robot Bloodhounds Are Among Us

But no need to panic — researchers Zhongyuan Yang, Fumihiro Sassa and Kenshi Haysashi have been working for years to develop a robot that can trace spatial odor coming from the ground, a similar capability to the dog famous for its odor tracking.

The researchers worked with a high-speed gas sensor to trace odor information from, for example, footprints, and the result is a robot bloodhound with capabilities so powerful that it can “read a message written on the ground using odors as a barcode,” ACS Sensors reported.

The technique the researchers used is called localized surface plasmon resonance, or LSPR. It measures changes in light absorption by gold nanoparticles when exposed to a gas. So, in a recent test, the robot traveled across a sample surface with the tube close to the ground to feed those odors to the LSPR sensor, and it was able to detect the location of ethanol odor sources in different locations along the path and read the word “ODOR” in an ethanol binary barcode — at a speed of 4 inches per second. Not only could a robot bloodhound be used for security or communication systems (like a pack of hounds), but LSPR-equipped robots can aggregate scent data for future exploration. [Forbes](#)

California’s New, Strict Data Privacy Law

On June 28, California lawmakers passed the California Consumer Privacy Act of 2018 — what’s being referred to as “one of the toughest data privacy laws in the United States,” for the way it changes how businesses handle data. The law, which was passed unanimously, requires companies that store large amounts of personal information (like Facebook) to disclose the types of data they collect, and it allows consumers to opt out of having their data sold.

This law may bring flashbacks to Europe’s recent General Data Protection Regulation protections, and it was passed so quickly to beat the potential of an even stronger ballot measure coming for the state. It was similar in terms of privacy rules, but required the identity of the third-party receiving personal information, whereas the legislation only requires the category of the third-party. Passing legislation also means it’s easier for lawmakers to change or amend it, which would be harder to do with a ballot measure. The law will go into effect at the start of 2020, so the tech industry has time to prepare. [The Verge](#)

Can Machine Learning Detect Heart Attacks?

A quick diagnosis and intervention can make a huge difference, especially when signs of a heart attack are missed in the ER — so finding an accurate, automated way to spot the signs would be a game changer. But automated heart monitoring systems were seen as significantly less reliable than cardiologists — until now.

Nils Strodthoff at the Fraunhofer Heinrich Hertz Institute in Berlin and Claas Strodthoff at the University Medical Center Schleswig-Holstein in Kiel, Germany, say they have built a neural network that can spot signs of a heart attack at the same performance rate of a human cardiologists.

Creating a machine capable of this has been a challenge because of the way heart attacks are diagnosed. Cardiologists use electrocardiographs to measure electrical output from the heart, but some of the signals from 12 different leads are more useful diagnostically than others for heart attacks. So interpreting the data, heart beat time intervals and voltage values is hard — but neural networks have been making great progress in pattern recognition. So, the team used a database of 148 ECG records from patients with myocardial infarction and 52 healthy controls. They used 90 percent of the data for training the neural network to spot the signs of a heart attack, and the rest of the data to test the network. The results? It reached a similar level of performance to human cardiologists. It's not perfect yet, but it shows exciting potential for intelligent machines in health care. [MIT Technology Review](#)

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