



TECHNICAL NEWS
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The AI cameras that can spot shoplifters even before they steal

It's watching, and knows a crime is about to take place before it happens. [Vaak](#), a Japanese startup, has developed [artificial intelligence](#) software that hunts for potential shoplifters, using footage from security cameras for fidgeting, restlessness and other potentially suspicious body language.

While [AI](#) is usually envisioned as a smart personal assistant or self-driving car, it turns out the [technology](#) is pretty good at spotting nefarious behavior. Like a scene out of the movie "Minority Report," algorithms analyze security-camera footage and alert staff about potential thieves via a smartphone app. The goal is prevention; if the target is approached and asked if they need help, there's a good chance the theft never happens.

Vaak made headlines last year when it helped to nab a shoplifter at a convenience store in Yokohama. Vaak had set up its software in the shop as a test case, which picked up on previously undetected shoplifting activity. The perpetrator was arrested a few days later. "I thought then, 'Ah, at last!'" said Vaak founder Ryo Tanaka, 30. "We took an important step closer to a society where crime can be prevented with AI."

Shoplifting cost the global retail industry about \$34 billion in lost sales in 2017 — the biggest source of shrinkage, according to a report from Tyco Retail Solutions. While that amounts to approximately 2 percent of revenue, it can make a huge difference in an industry known for razor-thin margins.

The opportunity is huge. Retailers are

projected to invest \$200 billion in new technology this year, according to Gartner Inc., as they become more open to embracing technology to meet consumer needs, as well as improve bottom lines.

"If we go into many retailers whether in the U.S. or U.K., there are very often going to be CCTV cameras or some form of cameras within the store operation," said Thomas O'Connor, a retail analyst at Gartner. "That's being leveraged by linking it to an analytics tool, which can then do the actual analysis in a more efficient and effective way."

Because it involves security, retailers have asked AI-software suppliers such as Vaak and London-based [Third Eye](#) not to disclose their use of the anti-shoplifting systems. It's safe to assume, however, that several big-name store chains in Japan have deployed the technology in some form or another. Vaak has met with or been approached by the biggest publicly traded convenience-store and drugstore chains in Japan, according to Tanaka.

What makes AI-based shoplifting detection a straightforward proposition is the fact that most of the hardware — security cameras is usually already in place.

"Essentially this is using something that's been underutilised for decades," said Vera Merkatz, business development manager at Third Eye. Founded in 2016, the startup offers services similar to Vaak in the U.K. market, where it has a deal with a major grocery chain. Third Eye is looking to expand into Europe.

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TECHNICAL NEWS NEWSLETTER

Mirrorsize uses tech to solve the issue of fit in the fashion industry

Mirrorsize's technique of extracting the body size of customers accurately has won it deals with several online-first fashion retailers, both in India and in the US

If Arup Chakraborty has his way, [technology](#) built at the Indian Institute of Technology in Delhi (IIT-D) could soon help global fashion retailers assist consumers find the right fitting trousers or suit through their smartphones.

With retail increasingly going the online way, fit issues are among the highest contributors to returns in the [fashion industry](#), one leading to millions of dollars in lost revenues. [Mirrorsize](#), a two-year old startup, is finding traction among fashion retailers in India and beyond, having already signed up small online brands such as GetStitched, Ira Soleli and Corpqlo.

“Some of our competitors want their customers to buy specialised hardware, some want them to install boxes with an array of sensors inside, but we realised the only way to solve this was to build something that was device agnostic where customers don't have to spend even a dollar on buying hardware,” Mirrorsize founder and CEO Chakraborty told ET. “Most of our competitors use predictive analytics, we did too until 2017, but then scrapped it because no model can fit 6 billion body types.”

The company along with IIT-Delhi professors Subhasis Banerjee and Sudipto Mukherjee extensively trained machine vision and classical algorithms, coupled with some hardcore engineering to measure the body size of a person standing feet away from a smartphone camera.

The mixing and matching of techniques has created a far more accurate, if not cutting edge, way of extracting body sizes. The company has applied for a US patent on the technology.

The problem that Mirrorsize is trying to solve has been one of the most sought after uses of technology in the industry, even leading to multi-million dollar acquisitions and investments by giants in the space, the door for disruption is still wide open. Even Flipkart-owned Myntra had made an acquisition in this space, and after launching the product within its app briefly, shuttered the project owing to inaccurate size readings.

“We've used AI where it works very well and have refined it using classical algorithms and that's what has helped us get so far. This isn't something we could publish papers on, this is hardcore development work. Arup gave us a target and we just put it together,” said Subhashis Banerjee, Professor of Computer Science and Engineering at IIT-Delhi.

Mirrorsize's technique of extracting the body size of customers accurately has won it deals with several online-first fashion retailers, both in India and in the US. It's also gaining traction from large players, with the company being in talks to sign on a large [e-commerce](#) major in the country and a few massive offline brands that are looking at its technology as a way to build lean online businesses.



WEEKLY EDITION

**TECHNICAL NEWS
NEWSLETTER****TechMahindra to collaborate with TBCASoft for cross-carrier block chain platform**

TBCASoft leads the Carrier Blockchain Study Group (CBSG), a global consortium of telecom carriers. CBSG Consortium members and partners are building blockchain-based services on this platform.

Tech Mahindra has announced a collaboration with [TBCASoft](#) to promote the Cross-Carrier [Blockchain](#) Platform for telecom carriers. TBCASoft leads the Carrier Blockchain Study Group (CBSG), a global consortium of telecom carriers. CBSG Consortium members and partners are building blockchain-based services on this platform.

[Manish Vyas](#), President, Communications, Media & Entertainment Business, and the CEO, Network Services, said “Driven by a strong need to transform operations and enabling new monetization possibilities, telcos are leveraging blockchain as one of the game changing technologies. Blockchain also complements the 5G network rollout plan of telcos as it opens up new opportunities to monetize transactions happening across the network and complements existing technologies to achieve greater security. Tech Mahindra's partnership with TBCASoft, will enable us to jointly develop and explore blockchain possibilities for CBSG Consortium members.”

The Cross-Carrier Blockchain [technology](#) is gaining recognition as a means of empowering carriers to provide differentiated services featuring transparency, security, real-time transactions and other blockchain advantages. The collaboration aims to architect use cases leveraging the platform in upcoming areas of supply chain (CPE handling, pricing, reassignment), contract management, roaming billing and taxes, identity management and mobile transactions, to customers around the world.

Rajesh Dhuddu, Global Practice Leader, Blockchain, Tech Mahindra, said, “Telcos continue to push the frontiers of digital transformation to provide a completely new customer experience. We at Tech Mahindra have designed various Blockchain solution sets leveraging enterprise Blockchain protocols, to help telcos globally accomplish higher net promoter scores, lower operational costs and enhance profitability. This consortium will play a critical role in taking these solutions to the telcos and helping them unlock multiple benefits.”

Ling Wu, Founder and CEO of TBCASoft and Co-Chairman of the CBSG Consortium, said, “Global carriers have already provided reliable and ubiquitous networks. By partnering with TBCASoft under the CBSG Consortium, carriers are able to create and extend their services beyond traditional markets and borders. The demands from global telecom carriers to join the CBSG blockchain collaboration with TBCASoft have been increasing rapidly. In the meantime, carriers may need additional expertise in planning new services in emerging areas. We look forward to providing more value to our Consortium members by teaming up with global partners like Tech Mahindra”.

In India, Tech Mahindra has partnered with [Microsoft](#) to create a Distributed Ledger Technology (DLT)-based solution to build an ecosystem in line with the regulations issued by TRAI (Telecom Regulatory Authority of India), to combat the issue of unsolicited commercial communication (UCC) or spam calls.

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TECHNICAL NEWS NEWSLETTER

WEEKLY EDITION

Big data - Next year will see a big shift in big tech

Countless numbers of retail outlets and offices today sport an electronic box with a patch that glows deep green. Employees mark their attendance by pressing a finger on that unfaltering green eye. An increasing number of smartphones offer 'face unlock' as a standard feature: the phone has software that can be trained to recognise the owner's face and unlock the phone on seeing the face. Less fancy ones recognise fingerprints.

Banks and credit card companies let you authenticate yourself using your voice when you call their helpline. Some airports are gearing up to do away with boarding passes, letting facial recognition software do the job for you — it is standard practice at some Chinese terminals. Police routinely identify culprits from the footage of surveillance cameras that record and store whatever transpires under their watch.

Then, of course, there are [Google](#) and [Facebook](#), who know everything about you, because you happily shovel that information to them without their having to ask.

Bank and credit card statements populate your Gmail, besides your medical reports and travel bookings. Your calendar helps you plan your life, but also reveals to Google what you do, whom you meet and where. Google Maps tracks your movements with far

greater aplomb and accuracy than an anxious mother can muster in relation to her teenaged daughter. Your search and browsing history, including on Youtube and whatever else you watch logged into the Chrome browser, reveal more about you to Google than what you tell your therapist.

Facebook's idea of what you actually like is hazy. Eagerness to be liked and not offend makes most people 'like' many things on Facebook that they might be indifferent to, if not actually abhor. But Facebook certainly knows who your friends are, who their friends are, what they wear, what they do, where they go and what their major transitions in life are. Facebook also owns [Whatsapp](#), India's favourite messaging app. But Facebook claims ignorance of the contents of its messages.

Amazon, of course, knows the exact shade of your consumerist hedonism. Bookmyshow, Netflix and Amazon Prime know the movies you watch and can probably draw your psychological profile. Swiggy and [Zomato](#) know what gives you your umami and how much you are willing to pay for it. Your payment wallets and card companies analyse your spends before you ask for it.

Your smartphone is loaded with apps that seek and obtain permission to access your contacts

and messages, scan your photographs and inherit 1% of your estate when you die. (Can you put your hand on your heart and swear they don't?)

The long point is that a host of private companies collect, store and act on a whole lot of your personal data. Your gut bacteria own your mood and level of sanity. Collectors of your data dictate your conduct, leaving some tiny room, we hope, for god, spouse and conscience, acting jointly or severally. The short point is that data protection is not just about Aadhaar. Most Indians now possess the 12-digit unique identity (UID) number and have linked it to bank accounts, telephone numbers and their income tax Permanent Account Numbers (PAN). The trouble is, a whole lot of other Indians, besides the designated authority in charge of Aadhaar, also possess at least the Aadhaar numbers and demographic details of their countrymen, if not their biometric data. Time and again, state government departments have put out list of beneficiaries of assorted state schemes, complete with Aadhaar numbers. Tribune reported a major breach in Aadhaar's link to the agencies across the country that enrolled members, which allowed some entrepreneurs to sell Aadhaar details to anyone willing to pay Rs 500.

**TECHNICAL NEWS
NEWSLETTER****Facebook is working on 'enterprise edition' of Oculus Go, Quest VR headsets**

Facebook is reportedly working on a business edition of its [Oculus Go](#) and Oculus Quest VR headsets.

The 'enterprise edition' of the Oculus Go and Oculus Quest headsets was hinted at by a new job posting for software engineer position on Oculus' AR/VR Enterprise team, Mashable reported.

Oculus Go is a portable headset that doesn't require a phone or computer, while the Oculus Quest is a self-contained headset with the positional tracking feature.

While Facebook has offered Oculus Business, Rift bundles for businesses, a dedicated version of the hardware for enterprises would be a significant expansion for Oculus.

The job posting indicates Facebook is working on partnerships with 'enterprise-developer ecosystems' and other software platforms to create business-specific features.

The enterprise edition of the Oculus headsets is likely to launch in 2019.





TECHNICAL NEWS NEWSLETTER

5G will give a major fillip to edge computing, says Seagate

Edge computing seems to be the new buzzword these days in tech circles. At a time when consumers and businesses are in an overdrive when it comes to the creation of data, edge computing enables connected devices to process data closer to where it is created—or the “edge.” According to BS Teh, senior vice-president, Global Sales and Sales Operation, Seagate, by 2025, almost 20% of data created will be real-time in nature—rather than being sent to the core of the network for processing. This means enterprises will build on their central cloud computing architecture and develop the ability to process—and securely store—more data at the edge. “In short, get ready for the rise of the edge,” he tells Sudhir Chowdhary in a recent interview.

Excerpts:

How is the storage market evolving in the Asia Pacific region?

The storage evolution trends are similar to what we see worldwide, which firstly is evolving and there is growth also. Specifically, it is growing in the mobile cloud area and we see “edge” as a big driver of growth as well. We also see the emergence of adjacent markets, for example, video surveillance—one of the fastest growing markets for which is Asia Pacific. Within Asia Pacific region, India is one of the largest markets for video surveillance. India trends in general again are similar. The differences are that the PC market is still a vibrant market for hard disk drives (HDD) in India. In other countries, the PCs are moving to solid state drives (SSD). In India, the percentage of SSD penetration is lower than that in other parts of the world. Most PCs are still using HDD inside.

**TECHNICAL NEWS
NEWSLETTER****SpaceX Dragon Capsule Set to Return to Earth After Space Station Stop**

An unmanned capsule from Elon Musk's SpaceX was due to return to earth on Friday after a short-term stay on the International Space Station, capping the first orbital test mission in NASA's long-delayed quest to resume human space flight from US soil later this year.

A [SpaceX](#) rocket had launched the 16-foot-tall capsule from the Kennedy Space Center in Florida Saturday morning. After a five-day mission on the orbital outpost, Crew Dragon was set to autonomously detach about 2:30am EST (0730 GMT) on Friday and descend to earth for an 8:45am splash-down off Florida's Cape Canaveral coast.

Officials at the US [National Aeronautics and Space Administration](#) will scrutinize the performance of the SpaceX capsule's parachute deployment and its buoyancy after splash-down - two of the design and functionality concerns first reported by Reuters in February.

Musk, also co-founder of electric car maker Tesla, will be watching closely. "I say hypersonic re-entry is probably my biggest concern," he told reporters after the launch, referring to the capsule reaching thousands of miles per hour as it goes through the earth's atmosphere.

The first-of-its-kind mission, ahead of SpaceX's crewed test flight slated for June, brought 400 pounds of test equipment to the space station, including a dummy named Ripley, outfitted with sensors around its head, neck, and spine to monitor

how a flight would feel for a human.

The space station's three-member crew greeted the capsule Sunday morning, with US astronaut Anne McClain and Canadian astronaut David Saint-Jacques entering Crew Dragon's cabin to carry out air quality tests and inspections.

The capsule's approach as seen on the earth's horizon from the station represented "the dawn of a new era in human spaceflight," McClain tweeted on Sunday.

By Thursday the space station crew bid farewell to Ripley and closed the hatch ahead of Dragon's Friday morning departure.

NASA has awarded SpaceX and Boeing \$6.8 billion in all to build competing rocket and capsule systems to launch astronauts into orbit from American soil, something not possible since the US Space Shuttle was retired from service in 2011.

The launch systems are aimed at ending US reliance on Russian Soyuz rockets for \$80 million-per-seat rides to the \$100 billion orbital research laboratory, which flies about 250 miles (400 km) above Earth.

NASA Administrator Jim Bridenstine told Reuters the cost per seat on the Boeing or SpaceX systems would be lower than for the shuttle or Soyuz.



TECHNICAL NEWS NEWSLETTER

BEL Launches Atmospheric Water Generator

The Defence PSU Bharat Electronics Ltd (BEL) has unveiled the Atmospheric Water Generator (AWG) at the Aero India 2019. The new product aims to provide an innovative solution to meet the ever-increasing need for drinking water worldwide.

Atmospheric Water Generator

- The Atmospheric Water Generator would generate water straight from the humidity present in the atmosphere through a novel technology.
- The Atmospheric Water Generator extracts water from the humidity present in the atmosphere through the process of condensation and purifies it.
- The water generator uses the process of heat exchange for condensing the atmospheric moisture to produce pure, safe and clean potable water.
- The Atmospheric Water Generator is integrated with a Mineralisation Unit to add minerals which are required to make the water potable.
- The Atmospheric Water Generator would be made available in both static and mobile (vehicular) versions and would be available in 30 litres/day, 100 litres/day, 500 litres/day and 1,000 litres/day capacities
- The Atmospheric Water Generator is being manufactured by BEL in collaboration with CSIR-IICT and MAITHRI, a start-up company based in Hyderabad....



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