

ETHICS IN AI

ARTIFICIAL INTELLIGENCE | COMP 131

A new AI technique can automatically measure coronary artery calcium - a measure of plaque in the arteries - in patients' chest CT images. A research team based in Boston trained a deep learning system using cardiac and chest CTs that were manually measured and tested the resulting system on CT scans of thousands of heavy smokers. The AI's coronary artery calcium scores - a common marker of heart disease in patients - were similar to the scores developed by human readers, according to researchers. The findings could help doctors better prescribe cholesterol-lowering preventive medications.

SCIENCE DAILY

Researchers at Stanford are using AI techniques to find better treatment options for people with epilepsy. Silicon Valley health-tech start-up **doc.ai** is sponsoring the clinical trial, which is led by Dr. Robert Fisher, a professor of neurology and neurological sciences at the Stanford University School of Medicine. According to Forbes, there are more than 14,000 different treatment scenarios for people with epilepsy, and many are tested out on an individual trial-and-error basis. The trial will use predictive AI to determine the best treatment choices on a larger scale, based on data like side effects, genomic information, and environmental exposures.

FORBES

China has implemented a new policy that requires consumers to have their faces scanned when registering phone numbers or purchasing SIM cards. The guidelines, which were first issued in September, took effect on Sunday and require telecom companies to deploy AI to check the identities of people registering SIM cards. According to the country's Ministry of Industry and Information Technology, the goal is to link consumer identities to their phones so that they can't transfer SIM cards. However, critics have argued that the facial recognition technology is quickly becoming an invasive form of surveillance and doesn't actually improve safety. "It enables governments to engage in invasive and ubiquitous monitoring of an entire population," says Evan Greer, the deputy director of the digital rights advocacy group Fight for the Future.

THE GUARDIAN

U.S. citizens can choose to opt out of its proposed facial recognition checks, which would screen people at airports, Customs and Border Protection (CBP) said on Wednesday. The Department of Homeland Security wants to expand the checks to include U.S. citizens, who have so far been exempt from the screenings. (It's only been used on non-U.S. citizens traveling into the country). As part of its new proposal, the agency says that all travelers "may be required to be photographed upon entry and/or departure" in the future. As a result, Democratic Senator Ed Markey says he will propose legislation to block the proposed facial recognition checks, which have drawn criticism from groups like the ACLU. On Wednesday, CBP said U.S. citizens will be able to opt out of the checks by notifying an airline rep or CBP officer. People who choose to do so can "simply present their passport for visual inspection, as is standard practice at ports of entry today," it noted.

TRAVEL + LEISURE



A new AI feature can detect when a driver is distracted from using a cellphone or smoking. The Israeli AI company Eyesight Technologies developed the feature as an update to its DriverSense monitoring system, which analyzes a driver's head pose, blink rate, and other facial features to detect distraction and drowsiness. Drivers who are on their phones are responsible for 1.6 million accidents in the U.S. a year, according to Eyesight, while smokers are up to three times more likely to cause an accident, the National Highway Traffic Safety Administration has found.

GEEK.COM



International Delta Airlines travelers who check in at Seattle's Sea-Tac Airport will soon be exposed to facial recognition software, according to The Seattle Times. The airline rolled out the optional system in Atlanta last year and plans to bring it to Sea-Tac by the end of this year. Passengers can choose to undergo the process (it won't be mandatory) if they want to bypass having to show their passports. The software will photograph a passenger's face and automatically match it with a visa or passport photo on file with U.S. Customs and Border Protection. The service could one day expand to every international boarding point in the airport, and possibly domestic flights as well. Next month, a five-member commission is scheduled to vote on principles to oversee how the technology is used at Sea-Tac.

THE SEATTLE TIMES

Deutsche Bank is reportedly using machine learning tools to replace employees, many of whom will lose their jobs within the next three years, Financial News reported. The bank has cut more than 4,000 positions in the last year and plans to eliminate another 18,000 over the next three years, a spokesperson confirmed. In the meantime, the bank is turning more toward AI to eliminate manual work, boost productivity, and redistribute capacity, according to Mark Matthews, head of operations for Deutsche's corporate and investment bank. Bots have processed 5 million transactions in Deutsche's corporate bank, as well as 3.4 million checks within its investment bank, in the last several years, Matthews said. As part of an initiative to save \$6.6 billion in three years, the company plans to automate parts of its back office as well.

FINANCIAL NEWS



Professional Go player Lee Se-dol is retiring after losing to Google's AlphaGo algorithm. The strategy board game Go has been played in China for about 3,000 years and is extremely complex. In 2016, Lee lost four out of five matches against AlphaGo and attributed his own win to a fault in the AI's programming. He recently told Yonhap News: "Even if I become the number one, there is an entity that cannot be defeated." Lee still plans to compete one last time later this month against the South Korean AI HanDol, which has already beat the country's top five Go players. Even with an advantage, "I feel like I will lose the first game," he said.

PC MAG



Plus.ai's autonomous tractor-trailer finished its first freight run across the U.S. The autonomous truck traveled mostly in autonomous mode across 2,800 miles from California to Pennsylvania, which it achieved in less than three days. The truck uses Plus.ai's driving system, which has multimodal sensor fusion, visual algorithms, and simultaneous location and mapping. Shawn Kerrigan, COO and co-founder of Plus.ai, said advances in the autonomous technology will make these fast cross-country runs "the norm in the future."

FLEET OWNER



Newly leaked documents from China's government reportedly describe how police are using AI technology to filter out and arrest Muslims and other minorities in Xinjiang. The International Consortium of Investigative Journalists (ICIJ) obtained the documents, which show how "Chinese police are guided by a massive data collection and analysis system that uses artificial intelligence to select entire categories of Xinjiang residents for detention," according to the agency. ICIJ reported that the government amasses the personal data of people through "warrantless manual searches, facial recognition cameras, and other means" and flags them for something as innocuous as using certain smartphone apps. The documents direct police to specifically arrest Uighurs - a minority Turkic ethnic group - who have foreign citizenship and to track Xinjiang Uighurs who live abroad, ICIJ reported.

ASSOCIATED PRESS

The AI startup Dessa created deepfake software that makes people look and sound like podcaster Joe Rogan. As Futurism notes, the tool isn't perfect, as "tiny errors appear as the person having his face replaced moves his head around." In a related (but opposing) effort, the company has released new algorithmic tools that it trained to detect deepfakes and synthesized videos, according to a blog post.

FUTURISM



During its University of Cambridge debate last week, IBM's Project Debater managed to convince members of the audience that AI will lead to more good than harm. Speaking in a female voice during Thursday's debate at the Cambridge Union, the robot provided opening statements for both sides and even cracked a few jokes, although it still struggled with saying its sentences correctly and backing up its assertions at times. The opening remarks were based on more than 1,100 human submissions gathered beforehand, which were analyzed via a "speech by crowd" application. In its anti-AI remarks, the bot argued that companies currently can't filter out human bias adequately in datasets and AI will take that bias and "fixate it for generations." In advocating for the benefits of AI, Project Debater said the technology will create new jobs and "bring a lot more efficiency to the workplace." At the end, the "AI for good" team narrowly won with 51 percent of the audience vote.

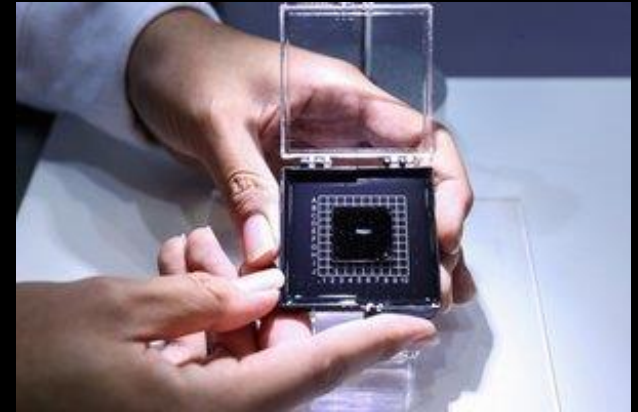
NEW SCIENTIST



CAS nominated Cambricon's A1 processor for this year's Outstanding Science and Technology

Achievement Awards. The commercial deep learning processor comes from Cambricon Technologies, which is now worth at least \$2.5 billion and is considered one of China's most valuable AI chip startups, according to The South China Morning Post. Founded by brothers Chen Yunji and Chen Tianshi in 2016, the startup's chips are now used to power nearly 100 million servers and smartphones for companies like Huawei Technologies and Alibaba Group.

SCMP



Cerebras unveiled today what it claims is the industry's fastest AI computer. The CS-1 can replace hundreds of racks of GPU-based computers using hundreds of kilowatts of power, according to the company, but measures only 26 inches tall and consumes about 20 kilowatts itself. Andrew Feldman, Cerebras CEO, says that the system dramatically cuts down on training time and, in the case of deep neural networks, can achieve single image classification in microseconds. The software side of the system allows users to write machine learning models using standard frameworks like Pytorch and Tensorflow. Already, Argonne National Labs, which plans to house a future exascale supercomputer, said it has deployed a CS-1 to accelerate neural networks in cancer studies and study traumatic brain injuries, among other uses.

TECHCRUNCH



- People might lose **their jobs** to automation
- People might have **too much** (or **too little**) **leisure time**
- People might lose their **sense of being unique**
- AI systems might be used toward **undesirable ends**
- The use of AI systems might result in a **loss of accountability**
- The success of AI might mean the **end of the human race**

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