University Distinguished Professor of Computer Science and Engineering Anil Jain, and his research team, had a noteworthy September in the media. Reporters contacted MSU’s international biometric expert on topics related to facial recognition, smartphone security, and other cyber security issues. Here are September highlights:

- **Why facial recognition could be the best way to unlock your cell phone.** Anil Jain, a computer science professor at MSU, says such technologies have some inherent advantages over passwords and PINs. “I would view the biometrics—face recognition, and fingerprint and iris—as strengthening existing security.” [Consumer Reports](https://www.consumerreports.org/technology/smartphone-security-face-recognition-security/)

- **Even a mask won’t hide you from the latest face recognition technology.** “There’s always a trade-off between security and privacy,” said Anil Jain at Michigan State University. But he said that people in public spaces are already under constant surveillance by security cameras, so they shouldn’t be too worried about every improvement in the technology. [New Scientist](https://www.newscientist.com/article/mg23631559-900-even-a-mask-wont-hide-you-from-the-latest-face-recognition-technology/)

- **Two computer science and engineering professors** are quoted in an article that explores whether new FaceID biometrics will unlock the smartphone and provide access to Apple Pay and other apps. Arun Ross and Anil Jain offer comments on whether new FaceID biometrics will unlock the smartphone and provide access to Apple Pay and other apps. [Scientific American](https://www.scientificamerican.com/article/more-efficient-face-id-biometrics/)
itself is made of different types of silicone and pigments.

• Do you know how safe it is to use your finger as a security login? And have you wondered how your cell phone knows if your finger is real or a fake? **Anil Jain** and his team are working to answer these questions and solve the biggest problems facing fingerprint recognition systems today: how secure they are and how to determine whether the finger being used is actually a human finger.

• The technology behind Face ID is not novel. **Anil Jain**, an MSU professor who studies biometric recognition and computer vision, notes that it uses an existing tactic called structured light to capture your visage in three dimensions—something he employed for object recognition back in the 1980s. That doesn’t mean it’s not a big deal if the company can get it to work well, though.

• Can Apple’s iPhone beat facial recognition bias? **Anil Jain** says facial-recognition systems need to be trained with more diverse samples of faces.

• **Anil Jain** believes iPhone X owners will eventually adopt Face ID if Apple has designed it to be as consumer friendly as Touch ID. “We’ll have to wait and see after people start using it,” said Jain, a Michigan State University computer science and engineering professor.

• Apple’s new FaceID: The technique of projecting something onto a three-dimensional object to help computer vision systems detect depth dates back decades, said Anil Jain. It's called the structured light method.

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**Other news items in September**

Mi Zhang, assistant professor of electrical and computer engineering:

• **To compete with new rivals, chipmaker Nvidia shares its secrets: **Mi Zhang calls open sourcing the DLA design a “very smart move.” He says it makes sense that devices beyond cars and robots have much to gain from new forms of AI chip.

• **Smart hearing aids** -- **Mi Zhang** and his research team of PhD student Xiao Zeng, research associate Kai Cao, and undergraduate student Haochen Sun, won third place in the National Science Foundation (NSF) Hearables
Scientists from MSU are looking for new algae-based technologies to capture power plant emissions and convert them into a range of products including biofuels and other chemicals. “We’ve been running bioenergy experiments with algae on campus for over a decade,” said Wei Lao, associate professor of biosystems and agriculture engineering.

“Africa's Touch ID Is Probably Doomed and That's Okay” - “I think I could foresee some challenges because of the plate that is adopted that might result in some ultrasonic phenomena that might be a deterrent to getting a good quality fingerprint,” said Arun Ross, professor of computer science and engineering at Michigan State University.

AutoDrive Challenge™, a three-year autonomous design competition organized by SAE International and General Motors (GM), has won the AutoSens – Best Outreach Project award. MSU is among the eight universities competing. MSU’s team is advised by Professor Hayder Radha, director of CANVAS.

Two projects sponsored by the Midland Research Institute for Value Chain Creation have been named finalists for the 2017 Manufacturing Leaders Awards. Principle researchers for the MRIVCC-sponsored projects are Evangelyn Alocilja, professor of biosystems and agricultural engineering at MSU, and Prem Chahal, associate professor of electrical and computer engineering at MSU.

When it comes to clean water, following government standards isn’t the same thing as completely clean water, says Susan Masten, professor of civil and environmental engineering.

Residues left behind when tap water evaporates are "like fingerprints" for the water's properties and contents, Rebecca Lahr, an assistant professor of civil and environmental engineering at MSU, told the American Chemical Society (ACS).

Equipped with a $750,000 grant, Michigan State University researchers hope to save more lives with more efficient underwater search-and-rescue missions through the joint efforts of humans and robots. -- Vaibhav Srivastava, project
leader and assistant professor of electrical and computer engineering and co-PI - MSU Foundation Professor Xiaobo Tan, also of ECE.

**Nelson Sepulveda**, associate professor of electrical and computer engineering, has developed the FENG device, representing a breakthrough in green energy technology.

MSU sent its sporty green and white autonomous vehicle to Detroit Moves Sept. 7-9. On display at the Spirit Plaza is a self-driving shuttle introduced by Ann Arbor-based May Mobility Inc., a flying car produced by Canton-based Detroit Flying Cars LLC, an autonomous vehicle by Michigan State University College of Engineering and bicycles from Detroit-based Detroit Bikes LLC, among other innovative mobility technologies.

**Alumni news**

The CEO challenge for **Darius Adamczyk (electrical engineering '88, computer engineering '88)** is to keep Honeywell on its winning streak.

**Andrew Williams (engineering arts '88)** has been promoted to partner at Charter Capital Partners, where he is managing director of the firm’s North Indiana office. He will serve on the firm’s leadership team and share operational management and talent development responsibilities.

**Mike Sadler (AES '13)**

- The Cotton Bowl Foundation is honoring the late **Mike Sadler (AES '13)** by matching up to $50,000 in donations given to the Mike Sadler Legacy Football Scholarship Endowment until Michigan State’s spring game in April.
- The **Mike Sadler ('13, AES)** Foundation will benefit from proceeds of a specially brewed craft beer that is coming to Michigan to honor the award-winning MSU punter, who died in 2016.

**Current students**

**Joshua Saluk, a mechanical engineering** student at MSU, has received a scholarship to thank him for supporting the music program at Rochester High School.

Student section leader **Sam Finkbeiner** is coming up with ideas to strengthen the MSU hockey team’s fan base – such as Hawaiian night or NHL jersey night. “I want to help bring in a bigger crowd and get more people involved at the games,” Finkbeiner, a chemical engineering sophomore, said.

**MSU Pride Points**

- **Sept. 18:** **Daniel Kent**, a PhD student in electrical engineering, was part of the MSU team at Detroit Moves.
- **Sept. 28:** PhD student **Mariana Desirée Reale Batista** won best technical writing paper at the 17th annual Society of Plastics Engineers Automotive Composites Conference & Exhibition – the world’s leading automotive composites forum.
Related Website: Communications contact: Patricia Mroczek

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