Why Does Hsinchun Chen Have Your Data?

Hsinchun Chen [1] might have your credit card data.

He's probably had it for years. So if nothing's happened with it yet, you're probably safe.

What's he doing with it? The Regents' Professor of Management Information Systems is trying to understand the way hackers and cyberterrorists work so that someday it's far harder for them to get your credit card data.

That's why his Artificial Intelligence Laboratory [2] in the Eller College of Management is full of Barbie dolls, voting booths, insulin ports, lightbulbs? anything that can be internet enabled and used to gather information about you.

In fact, for the entirety of Chen's career, he has been working with large amounts of data to understand the ways of criminals, terrorists? even diseases.

"Curiosity is my driver," says Chen, who also holds the Thomas R. Brown Chair in Management and Technology, is a member of the BIO5 Institute [3] and directs the AZSecure Cybersecurity Fellowship Program. "Especially curiosity of the unknown."

Early on, he was also influenced by Herbert Simon, the founding father of artificial intelligence, whose seminal book "Human Problem Solving" hit Chen at the right time. He went on to earn his management science degree at National Chiao Tung University in Taiwan before moving to State University of New York at Buffalo for his Master of Business Administration in the 1980s.

Shortly thereafter, he became interested in high-impact applications of data and technology.

"I'm not interested in creating simple apps. Those fulfill certain basic social functions," he says. “Instead, I want to use data and technology for large social solutions."

Chen's interests led to his doctoral dissertation at New York University on online information retrieval systems, which eventually became the foundation for a pivotal project he took on with the Tucson Police Department after arriving at the UA in 1989. Using information from multiple police databases, Chen was able to start identifying associations among crimes, which helped the police department link suspects to crimes and subsequently apprehend them. The information also could be shared across jurisdictions and, as a result, proved so useful that soon other police departments were lining up to license it, including those in Chicago, Phoenix and San Diego. Some 5,000 departments in all 50 states and in 28 NATO countries eventually signed on. The company Chen founded, called COPLINK, merged with another major security analytics company and was then sold to IBM in 2011, one of the largest UA spinoff successes.

Chen went on to have success with other ventures, but he's quick to point out that none of it is
"Commercialization requires a lot of effort," he says. "A lot of work goes into determining if something I am researching can be brought to market and be useful in the real world."

Chen expanded his research to other sectors beyond law enforcement ? to sport analytics, to counterterrorism and to health care. One of his current projects is called SilverLink ? a mobile health sensor-based system that, through analyzing millions of mobile records a week, can predict falls based on a patient's past walking and living patterns. Chen designed this for his mother, who lives 5,000 miles away in Taiwan. That's where Chen, the oldest son of five siblings, first became interested in information technology.

"I was always competitive," he recalls. "I was always in the top five in my class, and I was the first person in my family to earn an advanced degree."

He was even the first in his Ph.D. class in economics at NYU ? despite not being an economics major.

This aspiration drove him to create the first AI lab in a business school ? almost 30 years ago, before AI was on the tip of everyone's tongue. With more than $40 million in federal funding, Eller's AI lab is still the only one in the United States housed in a business school.

"AI is behind everything I do," says Chen. And he's built a notable career on it. His book "Dark Web," the first academic book to explore the dark side of the web, came out in 2012. He also has published more than 500 academic articles in the management information systems field, and is one of the most published and cited scholars of management information systems in the world.

Given this deep knowledge, what does one of the foremost experts on security informatics think about the ubiquity of AI today?

"Autonomous vehicles, virtual games, e-commerce applications ? these will all do very well," he says. "But that's only about 20 percent of possible applications. The other 80 percent still does not have enough data ? and yet there will be more data than ever before. And when technology meets data, the world will become very different."

A version of this article originally appeared on the Eller College of Management website.

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