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As employers demand more cybersecurity workers, CT colleges rush to catch up



UConn students collaborating at the school's recently opened cybersecurity lab located in the Information Technology Engineering Building in Storrs. PHOTO CONTRIBUTED

BY NATALIE MISSAKIAN
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When UConn cut the ribbon last month on its new $1-million cybersecurity lab, it joined a growing number of Connecticut schools launching new or beefed-up programs to teach students how to fight hackers and keep sensitive data safe.

Starting next fall, every UConn freshman majoring in computer science — about 200 students — must take a hands-on course in the cybersecurity lab to graduate, regardless of their concentration.

Students only need to turn on their televisions or read a newspaper to discover why, said Laurent Michel, associate head of UConn's computer science and engineering department.

"These days, there are security breaches reported almost every other day. Major breaches with huge amounts of information being leaked out," he said.

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"If you better understand how attacks are being carried out, you can launch a better counter attack," he added. "Everybody needs to do it because that makes everybody a better computer scientist."

UConn is not alone in creating new programs for students interested in cybersecurity. Central Connecticut State University launched a cybersecurity bachelor's degree program in 2018, and Quinnipiac University also began offering its online master's degree program in cybersecurity last year.

Quinebaug Valley Community College in Danielson launched its associate degree program last year as well, joining Capital and Naugatuck community colleges, whose programs began a few years prior.

The recent additions come amid high demand not only from students, but employers.

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By 2021, there are expected to be 3.5 million unfilled cybersecurity positions worldwide, according to Cybersecurity Ventures, which provides data and analytics for the industry.

In Connecticut alone, there are currently 2,645 cybersecurity job openings, according to industry watchdog Cyberseek; more than 1,000 of those are in the Hartford region.

And the jobs pay well: The median annual salary for an information-security analyst is $98,350, according to the Bureau of Labor Statistics.

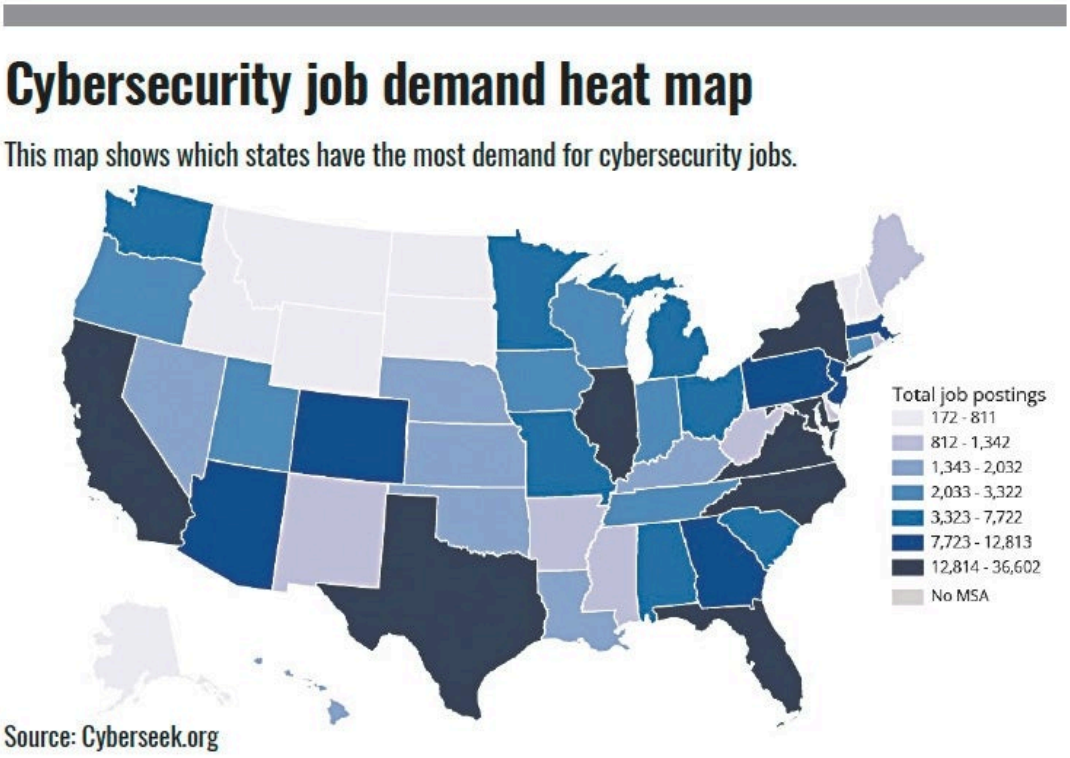
Saroj Gaire, 26, of Southington, an immigrant from Nepal, graduated with an associate degree in computer networking with a cybersecurity concentration from Capital Community College in Hartford in 2016. He then went on to get his bachelor's in computer networking at Central. (The university had yet to launch its cybersecurity degree program.)

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Today he is working full time in the information-security department at Travelers insurance company in downtown Hartford, earning $70,000 a year to start. He credits Capital's immersive courses with giving him a leg up.

"I work in the cloud-security department, which is very hot right now," he said. He is looking next to pursue his master's, possibly through Quinnipiac's online program, and said Travelers will help pay the tuition.

"Having [more cybersecurity] programs at community colleges and universities is a really good thing for students because everything is shifting towards technology [and the internet]," he said.



Diving in

Capital became the first community college in Connecticut to offer cybersecurity courses in 2014, and added a cybersecurity concentration to its computer networking associate degree program in 2015, said Saaid Elhadad, assistant professor and network and cybersecurity coordinator.

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half-dozen students to around 60 this year.

UConn's lab, located in its Information Technology Engineering Building and part of its School of Engineering, was donated by alumni brothers Samuel and Stephen Altschuler.

The new curriculum will cover such topics as vulnerabilities in internet-of-things devices, the integrity of electronic voting and power-grid devices, website security and security of network routing and others.

Arthur House, the state's former cybersecurity czar, said that while the recently added programs at state colleges and universities are "a good sign," Connecticut is still playing catch up.

"Offense is still far ahead of defense," he said.

While he is glad to see four-year schools building up their programs, he said more community colleges must add cybersecurity curricula. He said many businesses can't wait for prospective employees to go through a four-year program.

"They're saying 'We just need somebody with a two-year cybersecurity background, and we'll teach them the rest,' " he said. Businesses are also asking for more cybersecurity certificate programs to update current employees, he added.

However, in a good year, House said the state's community colleges are only graduating around 40 cybersecurity students combined.

"We have good curricula [in the schools that are offering programs] but we are not close to producing the numbers [of workers] we need," he said.

But Abe Baggili, chair of cybersecurity and computer science and founder of the cyber forensics lab at the University of New Haven, worries some schools are rushing to roll out programs to meet demand and compete for new students, without paying attention to quality.

He said the best programs have "deep, hands-on courses" and need to be taught by experienced cybersecurity professionals, who can be expensive to hire.

UNH, which offers both undergraduate and graduate degrees in cybersecurity, was among the first in the state to launch a cybersecurity program in 2013 and it has since grown both in size and national reputation.

Earlier this year, it became one of only three colleges in the Northeast (along with NYU and Northeastern) and 21 in the country to be named a Center of Academic Excellence in Cyber Operations by the National Security Agency.

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"We shouldn't just be creating programs because we want to compete in the market and fill the gap," Baggili said. "These programs need to be amazing. They need to be top notch."

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