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Louisiana State Police Partners with LSU to Solve Critical Challenges in Industrial Cyber

Bossier Press-Tribune

“ICS are the backbone for our chemical plants, our energy grid, our oil and gas—all of that is run off of ICS,” said Devin King, investigative specialist with the Louisiana State Police Cyber Crime Unit. “The last thing we would ever want is for an attack on an ICS network to be successful as it could cause horrific injuries, loss of life and very real and detrimental effects.”

To better understand vulnerabilities and ultimately secure ICS networks across Louisiana’s industrial sectors, State Police has partnered with LSU to advance industrial cyber research and talent development.

“We want to do this with LSU because LSU’s recent NSA designation made it easy,” King said. “It gives us the ability to recruit some of the best and brightest, and we’ll know we’re getting qualified candidates from two standpoints—skillsets and backgrounds. What we work on is sensitive, so there’s a fairly robust background check that has to be done for students and graduates to come work with us at Louisiana State Police. But because of LSU’s expanding work with the intelligence community, LSU is taking a lot of that load off of us, guaranteeing we’ll actually get qualified candidates to our door.

Two of those candidates are Marcellina Kazigati and Nathalia Soares, LSU graduate students studying cybersecurity. King recently visited the Applied Cybersecurity Lab in the LSU Center for Computation & Technology to meet with them and discuss ideas for joint research projects.

"One of the areas I'll be working on is threat hunting, a proactive approach to cybersecurity," Kazigati said. "Rather than waiting for an attack to happen, I'll be learning how to hunt for threats before they cause damage. As part of this work, I'm learning ladder logic programming, which is the language these industrial control systems speak."

"ICS doesn't have the same security standards as regular IT," Soares said. "They need to be available all the time, and plants can't stop producton to update their systems. Some aren'ts updated for decades, which makes them more vulnerable to attack. This is kind of awkward from a perspective of cyber, but very interesting and very important."

The partnership between Louisiana State Police and LSU is an extension of FIREStarter, a collaborative effort funded by the Louisiana Board of Regents and supported by industrial partners such as Radiance Technologies and BASF to train a new generation of cyber talent. FIRE stands for Forensic and Incident Response Environment and beyond its law-enforcement-grade forensic workstations and tools, LSU is now adding ICS capabilities with programmable logic controllers, or PLCs, and a miniature power plant in a dedicated lab for hands-on industiral cyber research and teaching. LSU and Louisiana State Police are further connected by LONI, the Louisiana Optical Network Infrastructure—a high-speed optical research network that links nearly all universities and technical and community colleges in the state. Owned by the Louisiana Board of Regents and managed by LSU, LONI's speed and reach enables King and the Louisiana State Police Cyber Crime Unit to easily collaborate and work with LSU students on research, analysis and incident response scenarios based on actual threat data.

Industrial control systems are designed to be long-term investments for the plants," King said. "They normally have a lifespan of 20 to 30 years, which means they're way beyond the curve as far as attack vectors and attack exposures. So, the more research we can do with LSU, the better. Together, we'll figure out how to better protect these systems."

Publish Date:
11-27-2023

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