Middle, high school students explore cyber security at Hacker Tracker Camp

July 28, 2021
in CERI, Cybersecurity, Electrical Engineering & Computer Science, Engagement and Outreach, Student Success by Janese Heavin

Twelve middle and high school students gained a deeper understanding of cybersecurity and associated professions at a three-day virtual camp hosted by Mizzou Engineering. During the Hacker Tracker Cyber Security Camp, participants practiced coding, explored various types of attacks and heard from experts in the field.

“It’s remarkable that these students learned and grasped complicated topics around cybersecurity in such a short time period,” said Prasad Calyam, associate professor of electrical engineering and computer science. Calyam developed the program as a way to introduce the subject to younger students. He is also Greg L. Gilliam Professor of Cyber Security and director of the Mizzou Center for Cyber Education, Research & Infrastructure (CERI).

On Wednesday, the students gave a joint presentation to faculty, Mizzou Engineering student mentors and family members about what they learned. They covered areas such as virtual machines, Linux commands and best practices to keep online information safe. All students were given access to virtual machines on the Google Cloud Platform, where many of the tools needed in the camp activities were pre-installed.
They also demonstrated a cyber-attack, showing ways to protect information by moving information from one server to another. Aneesh, a participant in the camp, explained the process, which is an advanced strategy that involves moving compromised information into a quarantined state while real data is moved into a protected database. In the quarantined state, the hacker is provided with a false reality that their attack is succeeding while an effective defense is being deployed. Calyam developed the strategy, known as cyber defense by pretense.

Another participant, Kavya, explained the difference between ransomware, phishing and modern viruses and gave examples of costly attacks in recent history.

“I was surprised by the different types of attacks,” she said.

Several students said they were interested in pursuing cybersecurity careers prior to the camp and were grateful to have the hands-on experience. They also learned more about what the job entails from Kathleen Bellew, an employee at MOREnet, who spoke about the importance of her work. MOREnet sponsors the camp. Jason Rincker from Stronghold Data also explained trending stories on cyber attacks and how his team helps small and medium businesses to protect their cyber assets.

Other participants left with a new interest in computing, computer science and information technology.

“This was my first experience, and I really enjoyed it,” one participant, Matthew, said. “I want to practice coding more now.”

The students also said they’re better equipped to protect themselves online and plan to be more cautious when sharing information to social media platforms and apps.

Songjie Wang, a cyberinfrastructure engineer in CERI, helped lead the camp and said he was impressed with the collaboration among the group. Graduate students Roshan Neupane, Alicia Esquivel, Naga Ramya Bhamidipati and Varsha Vakkavanthula assisted the campers in the hands-on learning exercises.

“They really worked together as a team,” he said. “They were cooperative, focused and worked hard on all the learning opportunities that were presented.”

Interested in taking advantage of a future Hacker Tracker Cyber Security Camp? Check the webpage for future dates and details.