Pacific Northwest National Laboratory
GUEST LECTURES

TUESDAY, APRIL 25, 2017
10:00-11:30 AM
JPL ASSEMBLY ROOM (JPL 4.04.22)

SAMUEL CLEMENTS

Blended Attacks: Integrating Cyber and Physical Assessments

Both physical and cyber security domains offer solutions for the discovery of vulnerabilities, but neither method fully represents the true potential security risk to a site, facility, or asset nor comprehensively assesses the overall security posture. This project evaluated physical and cyber vulnerability analysis (VA) techniques and provided a strategic approach to integrating the interdependent relationships of each into a single VA capability, enabling increased identification and assessment of the true overall risk during a vulnerability assessment.

SAM CLEMENTS, upon graduating from Carnegie Mellon University's Masters of Information Security, Policy, and Management program, recognized the need to expand cyber security research beyond information technology systems to the control systems that run our nation's critical infrastructure. As a recipient of the Scholarship for Service program, he looked across the federal government and federally funded research and development centers to find where this research was occurring and in 2008 began working as a Cyber Security Researcher at the Pacific Northwest National Laboratory. PNNL's strong ties to the US electrical grid made it a natural fit. Sam's research has covered technical evaluations of wireless systems for use in critical infrastructure systems, secure network architectures, and blending physical and cyber security assessment processes for which he was awarded a patent.

WILL HUTTON

Teaching a Computer to Fight Itself (Implementing an ORGE AI in Python)

OGRE is an asymmetric board game created in 1977 simulating a futuristic fighting force of infantry and armor against a single, massive, artificially intelligent cyber tank. Figuring out a winning strategy was difficult, so I taught my computer how to play the game using Python and genetic algorithms, so my program could learn how to play the game better.

WILLIAM HUTTON spent four years active duty with the United States Army as a military intelligence and electronic warfare specialist. He received his bachelor of arts in philosophy and computer science from Central Washington University in 1999. William has over 20 years of software development experience, spent five years working at the Pacific Northwest's only operating nuclear reactor, and two years at the Hanford site before coming to the Pacific Northwest National Laboratory. While at PNNL, William has focused on protecting critical infrastructure, cyber and physical security, cryptography, and resiliency. He is currently a PhD candidate at Washington State University.

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