COMPUTING COLLOQUIUM

Securing the Convergence: Challenges in Securing Cyber-Physical Systems Across Diverse Physical Domains

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Friday, October 11
10:30 a.m.
City Center Plaza 259

As technology blends digital and physical worlds, securing systems that interact with both has become increasingly complex. This field of research, often referred to as the security of engineered systems, addresses the challenge of retrofitting modern technology into legacy systems that cannot be taken offline, such as those in industrial automation and medical IoT. We will explore how the convergence of different technologies and physical domains introduces new security risks and why traditional cybersecurity approaches are often insufficient. Through recent research, we will highlight the unique vulnerabilities and solutions that arise when digital systems control or monitor physical processes. Finally, we will introduce the SPHERE research infrastructure, a platform designed to help researchers and practitioners test and develop security solutions for these complex, interconnected systems. Join us to learn about the latest innovations in CPS security and how we can work together to protect legacy, current, and future generations of cyber-physical technology.

Dr. Luis Garcia is an Assistant Professor at the University of Utah Kahlert School of Computing. His research is in the broad area of embedded and cyber-physical systems for applications in Industrial IoT, ubiquitous and mobile computing, and pervasive sensing and control. His current interests are in problems related to making these systems secure, privacy-aware, human-coupled, learning-enabled, wirelessly-networked, and energy-efficient. He leads multiple research projects modeling the security and safety of industrial control systems, high-fidelity cyber-physical security experimentation, and developing trustworthy medical IoT devices. More information about his research is available at his website: https://lagarcia.us.

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