

There will be a U--REaSON seminar event on this Tuesday, September 18th, from 3:30pm to 4:30pm in room 211 of the Civil Engineering Building. Speaker of this week is Dr. Rattikorn Hewett.

Title: How to Communicate Effectively in a Technical Forum -- Securing System Controllers in Critical Infrastructures

This talk gives some tips and guidelines on how to prepare and deliver an effective technical presentation, and ask smart questions even if you do not understand a whole lot. It follows by an illustrated 20 minute practice talk on a peer reviewed article to be presented at the 8th Annual Cyber Security and Information Intelligence Research Workshop, sponsored by DoE (Department of Energy) and NNSA (National Nuclear Security Administration), at Oak Ridge National Lab. The title and abstract of the paper is below.

Abstract: Securing System Controllers in Critical Infrastructures

Control systems are at the heart of many critical infrastructures. Malicious attacks on system controllers like SCADA (Supervisory Control And Data Acquisition) systems are serious threats to critical national infrastructures such as smart grids, nuclear power plants, or transportation systems. Analyzing and verifying the security of the control systems has increasingly become an important defense mechanism. This talk presents an approach that facilitates a semi-automated security system verification of control systems by a novel application of model checking, a technique traditionally used for automated software verification. The proposed approach is different from typical model-checking applications in that it has the ability to uncover missing safety and security properties that should be specified to prevent catastrophes caused by malicious acts. We describe the approach by illustrating its use in analyzing a cooling reactor system controller in a nuclear power plant system. The approach is general and applicable to SCADA and other control systems.