



Department of Computer Science and Engineering

Presents

Emin Gun Sirer, Cornell University

Building Trustworthy Networked Systems

Tamper-proof coprocessors for secure computing are poised to become a standard hardware feature on future computers. Such hardware provides the primitives necessary to support trustworthy computing applications, that is, applications that can provide strong guarantees about their run time behavior. Current operating systems, however, lack the mechanisms required to support trustworthy computing.

In this talk, I will outline a new operating system, called the Nexus, my group is building to support trustworthy computing applications. The Nexus is built around a novel OS mechanism, called logical attestation, that can capture high-level, semantic properties of computer programs. This talk will focus on how logical attestation, coupled with accompanying kernel mechanisms, can enable a remote party to establish trust in a particular program without knowing its implementation or origin. I will illustrate how the logical attestation approach can be used to protect the Internet routing infrastructure, and discuss how the unforgeable, attributable statements obtained through logical attestation can be used to check whether network paths possess characteristics that are otherwise difficult or impossible to measure, and point to new research directions enabled by a trustworthy operating system.

Emin Gun Sirer is an Associate Professor at the Department of Computer Science at Cornell University. His research interests span operating systems, networking and distributed systems.

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3:30 - 4:45 PM

University at Buffalo – North Campus

Room to Be Announced

This talk is free and open to the public

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