Distinguished Lecture Series

EECS COLLOQUIUM

Fall 2015

Wednesday
October 21
4:00 - 5:00pm

Refreshments
served at 3:30pm

Hewlett-Packard Auditorium
306 Soda Hall

Leveraging Collective Intelligence to Improve the Reliability and Security of Software Systems

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Abstract

Software now plays a central role in society, coordinating large parts of our economy and managing many of our everyday activities. Sufficiently reliable and secure software is now a primary concern for our society.

Anticipating all of the situations that a program may encounter when it runs is a challenging task. Not all developers are up to this task. The reality is that many deployed programs are missing checks required to operate reliably and securely.

But just because one developer overlooked a check does not mean that all developers overlooked that same check. This talk shows how to detect a missing check in one program (the recipient), find the correct version of the check in another program (the donor), then transfer the check from the donor into the recipient to eliminate errors and vulnerabilities caused by the missing check. The ideal end result of this research direction is applications that combine the best code written anywhere by anyone.

Biography

Martin Rinard is a Professor in the MIT Department of Electrical Engineering and Computer Science and a member of the MIT Computer Science and Artificial Intelligence Laboratory. His research interests have included programming languages, computer security, program analysis, program verification, software engineering, and distributed and parallel computing. Prominent results have included automatic techniques that enable applications to survive otherwise fatal errors and security attacks and techniques that trade off accuracy of end-to-end results in return for increased performance and resilience.

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