

COMPUTER SCIENCE COLLOQUIUM

In conjunction with
IEEE Reliability Society Dallas Chapter 2010 Student Outreach

“Building and Monitoring Trustworthy Software”

Professor Mohammad Zulkernine
Queen's University, Kingston, Canada

Abstract

Software systems must be engineered with reliable protection mechanisms, while still delivering the expected functionalities. The principal obstacle in achieving these two different but interdependent objectives is that current software engineering processes do not provide adequate methods and tools to achieve security goals. This presentation will discuss some methods and tools for building trustworthy software systems proposed by the Queen's Reliable Software Technology (QRST) research group.

Despite rigorous use of many preventive measures and protective shields there exist faults and security loopholes, which elude their detection efforts and do not surface until the software is operational. Several studies have shown that no matter how much effort has been put into the early stages of the software development, building fault or vulnerability free software has proven nearly impossible in practice. These faults may lead to serious software failures, and security loopholes often leave the system vulnerable to attacks and abuses. Given that, it is very important to have tools which can be used for online monitoring of the "trustworthiness" of software systems. This presentation will also discuss some research on automatic monitoring.

Biography

Mohammad Zulkernine is an Associate Professor in the School of Computing of Queen's University, Canada, where he leads the Queen's Reliable Software Technology (QRST) research group. In 2009-10, he was a Visiting Professor at the University of Trento, Italy. Dr. Zulkernine received his PhD from the University of Waterloo, Canada, where he belonged to the university's Bell Canada Software Reliability Laboratory. Dr. Zulkernine's current research focuses on software reliability and security. His research projects are funded by a number of provincial and federal research organizations of Canada, while he is having industry research partnerships with Bell Canada and Cloakware Corporation. Dr. Zulkernine teaches software reliability and security related courses both in academia and industry and has extensive publications in these areas. He has served on the committees of many international conferences such as SSIRI, COMPSAC, DSN, ACM SAC, ESSoS, and QSI. In 2011, he will be one of the program co-chairs of the 5th SSIRI and workshops chair of the 35th COMPSAC. Dr. Zulkernine is a senior member of the IEEE, a member of the ACM, and a licensed professional engineer of the province of Ontario, Canada. More information about his research can be found at <http://research.cs.queensu.ca/~mzulker>.

The colloquium is open to the general public

Date: Friday, October 1, 2010

Time: 10:30am – 11:30am

Location: Room: ECSS 2.410

Host: Professor Eric Wong

(Refreshments will be served at 10:15 am)

The University of Texas at Dallas
ENGINEERING/COMPUTER SCIENCE BLDG. EC 31,
P.O. BOX 830688, RICHARDSON, TEXAS 75083-0688
(972) 883-2190