



January 4-7, 2011, The Grand Hyatt Kauai Resort & Spa, Koloa, Kauai, Hawaii.

Track: Software Technology

Minitrack: Assurance Research for Dependable Software Systems (ARDSS)

Modern society is irreversibly dependent on software systems of remarkable scope and complexity. Yet methods for assuring the dependability and quality of these systems have not kept pace with their rapid deployment and evolution. The result has been persistent errors, failures, vulnerabilities, and compromises. Research is required in assurance technologies that can meet the needs of 21st century systems. These technologies must scale beyond present labor-intensive practices that are increasingly overwhelmed by the task at hand. Many organizations in academia, industry, and defense are interested in this subject, but often with a focus on specific subject matter areas. The goal of this Minitrack is to bring together researchers from all areas of system assurance to promote sharing and cross-pollination of promising methods and technologies. We will promote a unified assurance discipline characterized by science foundations and substantial automation that can effectively address the scope and scale of the problem.

Minitrack Co-chairs

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Richard Linger is a senior member of the technical staff at the Software Engineering Institute at Carnegie Mellon University. He serves as manager of the CERT Survivable Systems Engineering group where he directs the Function Extraction project for computing software behavior. Linger also contributes to research in Flow-Service-Quality (FSQ)

engineering for network-centric system survivability, and next-generation software engineering for dependable system development. He serves as a member of the faculty at the CMU Heinz School of Public Policy and Management. At IBM, Linger partnered with Dr. Harlan Mills, IBM Fellow, to create Cleanroom Software Engineering technology for development of ultra-reliable software systems, including box-structure specification, function-theoretic design and correctness verification, and statistical usage-based testing for software certification.. He has extensive experience in project management; system specification, architecture, design, verification, and certification; software re-engineering and reverse engineering; and process improvement, technology transfer, and education. He has published three software engineering textbooks, twelve book chapters, and over 60 papers and journal articles. He holds a BSEE from Duke University, and is a senior member of IEEE and a member of ACM and AIAA.

Jim Alves-Foss is the director of the University of Idaho Center for Secure and Dependable Systems. Dr. Alves-Foss co-founded the center in 1997 in response to the growing need for information assurance education and research. In 1998 the center was recognized as one of the first seven National Centers of Academic Excellence in Information Assurance Education by the National Security Agency. As a researcher in high assurance systems, Dr. Alves-Foss has published over 90 refereed conference and journal papers, has mentored 15 PhD students to completion as well as dozens of MS students. Dr. Alves-Foss received his BS in Mathematics and Physics and Computer Science and his MS and PhD degrees in Computer Science, all from the University of California at Davis. He came to the University of Idaho in 1991 after completing his PhD and is now a full professor.

Carol Woody is a senior member of the technical staff at the Software Engineering Institute. She leads a team of researchers addressing Cyber Security Engineering. Her current research is focused on cyber assurance and supply chain risk analysis. Woody has over 25 years of experience covering all aspects of software and systems planning, design, development, and implementation in large complex organizations. She holds a BS in mathematics from The College of William and Mary, an MBA with distinction from Wake Forest University, and a PhD in Information Systems from NOVA Southeastern University. Woody is a senior member of both IEEE and ACM.

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