Introduction to Software Technology Track

Rick Kazman
University of Hawaii
kazman@hawaii.edu

Gul Agha
University of Illinois, Urbana-Champaign
agha@cs.uiuc.edu

Welcome to the Software Technology (ST) Track. This year we are proud to have a total of 15 minitracks on a wide variety of topics:

Agile and Lean: Organizations, Products and Development looks at how agile and lean teams interact with organizational structures, cultures and products, including how they interact with product groups, how they restructure, cultural changes, metrics for tracking, and how markets respond to them.

Architectures, Tools, and Methods for Safe and Secure DevOps Software Engineering seeks to shed light over the synergies and challenges in the above mentioned DevOps technical, organizational, and social dimensions, focusing on Security and Privacy concerns from a software engineering perspective.

Blockchain Engineering provides a forum for addressing the challenges arising from the paradigm shift and the "how to" of engineering a blockchain system (i.e., "blockchain engineering") that can fundamentally change how business value is created, discovered, and realized.

Cyber Systems and Analytics presents new methods that address persistent concerns related to scalable privacy and security; machine-human interaction and usability; and malicious cyber systems. These methods can potentially enable a future where secure, cognitive technologies anticipate long- and short- term information needs, perceptively coordinate and adapt distributed sensors, and deliver timely and accurate information and recommendations to humans and machines.

Cyber Threat Intelligence and Analytics focuses on novel techniques and tools to perceive, reason, learn and act on a wide range of data collected from different attacks (or attempts), sophisticated advanced persistent threat campaigns, etc.

Cyber-Assurance for Internet of Things and Fog Computing Architectures looks at emergent trends in Cyber-Assurance theory, application and embedded security for the Internet of Things (IoT)/Fog Computing architectures based on theoretical aspects and studies of practical applications.

Cyber-physical Information Systems explores issues that are related to designing, deploying, and maintaining cyber physical systems.

Cybersecurity and Software Assurance explores the foundations for a discipline of software assurance to improve dependability. Assurance research focuses on achieving trust and confidence through auditable evidence that systems will be built and will function as intended in all environments.

eSourcing of Business Processes and Software Products and Services is interested in helping providers and customers to enhance their eSourcing maturity from simple cost-driven engagements to strategic partnerships bringing sustained value.

High-Stakes IS Risk and Decision-Making examines decisionmaking in IS and its impact on risk, the methods for risk-informed decision-making, the risk vs. cost trade-offs, schedule, performance, decisions about assurance and the cognitive biases of decision makers and organizational culture.

Smart (City) Application Development: Challenges and Experiences: Challenges and Experiences in Smart Application Development addresses the challenges of how to deal with smart city application scenarios such as handling huge data sets, high usage loads, complex event processing on real-time data streams, sharing data between applications, security etc.

Software Development for Mobile Devices, Wearables, and the Internet-of-Things focuses on software development for mobile systems, reflecting its increasing interconnectedness. The minitrack is devoted to the technological background of mobile computing while keeping an eye on business value, user experience, and domain-specific issues.

Software Development for Self-Adaptation in Services, Wearables, and IoT Devices focuses on services, wearables, and IoT devices as targets for self-adaptation, along with software development methods, techniques and frameworks needed to employ self-adaptation in these domains.

Software Product Lines: Engineering, Services, and Management focuses on product line research and practice including business models, valuation, organizational and process design, knowledge management, service systems, and standardization initiatives related to product lines.

Wireless Networks focuses on fundamental challenges and issues arising in wireless sensor networks and their application.