

## Systems Architecture, Design, Engineering, and Verification - The Practice in Research and Research in Practice

More than any other area in computer science, the interaction and boundary between science and engineering is blurred in the systems area, with cross fertilization from both directions. The systems panel will explore the past, present and future relationship between systems research and engineering practice. Panel members will review their past award-winning research in perspective, and describe its impact on the computing world. They will discuss the relationship between systems research and engineering practices: when does systems innovation emanating from industry become an invention and when does academic research stop being science and become engineering? How does practice-driven research impact the real world and how does the real world reflect back on foundations? In what forms does technology create research challenges, and in what manner does applied research give solid base for development? They will surmise about the future of systems research: What are the fundamental challenges posed by the scale of today's cloud computing systems and mega-size data centers? How to organize software of large-scale distributed executions or mega-ton lines of code? What new opportunities are enabled by novel technologies like flash memory and transactional memory? How to integrate hand-in-hand design of software and architecture?