Creating Computing Systems that Intelligently Adapt

Nalini Venkatasubramanian
Professor, Information and Computer Science

CURRENT RESEARCH

Ensuring resilience and dependability in next generation sensing/actuation, computation and communication infrastructures

The next generation of safety and security is in the hands of technology. For instance, the homes of aging adults can be embedded with tools that track if they are safe, breathing, or mobile. But what happens if these systems fail? What if a person is dependent on technology but it doesn't work? Research must develop these new tools while making sure that there are redundancies that serve as a backup for when technology becomes unavailable or overloaded in crises. Dr. Nalini Venkatasubramanian, Professor of Information and Computer Science at the University of California, Irvine, develops techniques and tools to enable intelligent adaptation of diverse sensing/actuation, computation, and communication infrastructures to meet the joint goals of performance, dependability, and scale. In short, her research aims to create adaptive systems that integrate highly diverse computing systems, networks, and software systems to help realize the needs of applications that have significant community and broader impact.

Dr. Venkatasubramanian's work combines theoretical foundations with significant system building tasks while aiming to build tools with real-world applications. This will help ensure that emerging technologies are allowed to thrive while correctly managing user expectations from them. Her engagement with scientists from different disciplines as well as collaborations with various agencies, local governments, and industry partners has nestled her in a unique space where her research has true meaning for the communities she serves. In fact, successful deployment of her technology has improved emergency response times while disseminating information to the public. In recent efforts initiated by the...

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AFFILIATION

University of California, Irvine

EDUCATION

- Ph.D. in Computer Science 1998, University of Illinois, Urbana Champaign
- Worked fulltime at Hewlett-Packard and HP Labs 1991-1998

RESEARCH AREAS

Drug Development, Technology, IOT, Devices, Data, Informational Sciences / Internet

FUNDING REQUEST

Your contributions will support the continued research of Dr. Nalini Venkatasubramanian, of the University of California, Irvine, as she studies large scale dynamic distributed systems and how adaptation is a fundamental aspect to their engineering. Donations will fund the necessary $50-200K required to address interdisciplinary challenges, disseminate research to industry, and continue basic experiments. Help improve the Internet of things for emergency response, public safety, and resilient community infrastructures; support Dr. Venkatasubramanian's research.