A 10-Year Perspective on Software Engineering
Self-Adaptive Systems (Keynote)

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ABSTRACT

In 2002 I helped organize the 1st ACM Workshop on Self-healing Systems (WOSS), a workshop that eventually morphed into this SEAMS Conference. As with SEAMS today, the goal then was to bring researchers together to gain a better understanding of the software engineering challenges and approaches for this emerging area. Now, just over 10 years later, it seems a fitting time to reflect back on the progress of the field during this formative period and to consider some of the broader implications for the software engineering agenda. In particular, in this talk I will try to tease out some common themes and research challenges that have emerged as the core concerns for this subfield. I will also do a bit of soul-searching to reflect on my own research agenda in architecture-based self-adaptation as exemplified by the Rainbow System – considering both the decisions that we made that were good, and the ones that I think need to be revisited.

ABOUT THE SPEAKER

David Garlan is a Professor of Computer Science in the School of Computer Science at Carnegie Mellon University, where he has been on the faculty since 1990. He received his Ph.D. from Carnegie Mellon in 1987 and worked as a software architect in industry between 1987 and 1990. His interests include software architecture, self-adaptive systems, formal methods, and cyber-physical systems. He is a co-author of two books on software architecture: "Software Architecture: Perspectives on an Emerging Discipline", and "Documenting Software Architecture: Views and Beyond." In 2005 he received a Stevens Award Citation for "fundamental contributions to the development and understanding of software architecture as a discipline in software engineering." In 2011 he received the Outstanding Research award from ACM SIGSOFT for "significant and lasting software engineering research contributions through the development and promotion of software architecture." He is a Senior Member of the ACM and a Fellow of the IEEE.