CALL FOR ARTICLES

The Software Architect’s Role in the Digital Age

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CN Money recently ranked software architect as the best job in America; Gartner identified application architecture as a key topic and trend. Many countries have strong software architect practitioner communities. At the same time, fast-paced organizations such as Amazon, Google, and Netflix don’t have a dedicated role or career path for software architects, but prefer other forms of technical leadership. Martin Fowler’s 2003 IEEE Software article “Who Needs an Architect?” also raised the question of whom to call an architect.

After more than a decade of technical development and training programs, have we managed to clarify an architect’s roles, responsibilities, skills, competencies, and career paths? Even if we have, the architect’s role will likely be a moving target in light of recent technology innovations, such as big data, cloud computing, and mobile computing, as well as advances in method engineering, such as agile practices, continuous integration and deployment, and DevOps. In addition, architects must deal with constantly changing social and organizational interactions. These trends provide architects with more and richer information channels but significantly extend the design space—that is, the choices to be made and available options. Challenges such as changing technologies, software becoming ubiquitous, and an industrial revolution empowered by computing must be mastered by software architects, whose roles and responsibilities are also changing at the same time.

IEEE Software seeks submissions for a theme issue on the software architect’s role in software development. The issue aims to be a guide for architects and aspiring architects by featuring case studies, good and bad experiences, and examples of proven practices. Possible topics include, but aren’t limited to,

- the architect’s impact, including social, organizational, and technical aspects;
- architect career paths and competencies;
- the skills and responsibilities that belong and don’t belong to architects, for educating undergraduate students and graduates to be successful architects;
- growing and managing the body of knowledge related to software architecture practice;
- empirical studies of how practicing professionals use software architecture tools and techniques; and
- practical experiences and industry case studies on how the architect’s role has facilitated or hindered success;
- industry experiences from software architecture education, certification, and career development initiatives; and
- industry case studies from application domains requiring specific skills (for example, multidisciplinary systems of systems, cyber-physical systems, platform-as-a-service and other cloud computing offerings, big data, and mobile computing).

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