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Special Issue on:
Emerging and Multidisciplinary Approaches to Software Engineering

Software engineering is inherently a socio-technical effort with best practices based on social interaction. However, these practices are likely to vary with cultural aspects that cannot be externalized or captured by automation tools alone. Therefore, engineering software products requires a vision of thinking across boundaries for the future which goes further than what we have so far conceived. In particular, novel software development approaches are closely tied to the traditional concerns of social factors that affect the success of software development as a whole. To address these concerns and establish a strategy that will achieve a broader vision, researchers seek ways to adopt techniques from multiple academic disciplines and draw knowledge from various areas including but not limited to management, sociology, anthropology, psychology, etc. Ultimately, applying best practices from multiple academic disciplines is critical for future success in engineering sustainable software products.

In this special issue, we would like to bring together a whole diversity of interdisciplinary or multidisciplinary endeavors to address open issues in software engineering which crosses disciplinary boundaries. Our goal is to collect current research efforts, views and experiences among researchers and software practitioners contributing to advances in multidisciplinary research. Specifically, we seek contributions that highlight how these approaches can be utilized to address the opportunities and challenges with emerging technological advances that are impacting the economic, political, environmental, social, and technical aspects of software engineering. The submissions need to highlight as a multidisciplinary effort which should document findings supported by empirical studies and experimentation

Topics of interest include, but are not limited to:

– Multidisciplinary research with an impact on software engineering
– Architectural design patterns recommended for integration of different disciplines
– Development problems emerging from research partnerships with communities of interests e.g. game technology, virtual or augmented reality research
– New development models, tools, and methods that are conducted in interdisciplinary teams.

– Software engineering problems in social sciences; industrial management; engineering economics, cyber-physical systems and a spectrum of other disciplines
– Software engineering problems related to the cloud, connecting systems to the cloud, and managing big data in the cloud
– Software engineering problems when implementing Artificial Intelligence algorithms and machine learning
– Software engineering problems in the use of open source software in highly safety critical environments.

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