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FOREWORD

Special Section on Formal Approaches

Societal and business activities depend more and more on software-intensive systems. The scope of such systems is still expanding to include emerging types of systems such as Cyber-Physical Systems and Smart Systems. The increased involvement with human activities and real-world entities leads to increasing demand for dependability. On the other hand, the complexity of systems has been still growing and making it difficult to ensure dependability of software-intensive systems.

Formal approaches are one of the promising directions to tackle this difficulty by providing rigorous modeling techniques together with intensive verification techniques. Formal approaches still have much potential to evolve given the recent advance in computing power and emerging computing paradigms while they have a long history to provide matured disciplines.

The Special Section on Formal Approaches aims at stimulating research on formal approaches to information systems, ranging from fundamental theory to case studies on real-world systems. In response to the Call for Papers, a total of five submissions were received. After a thorough and careful review process, the editorial committee selected two papers that prove the significance and importance of formal approach research.

On behalf of the editorial committee of the Special Section, I would like to express my sincere gratitude to all who submitted their valuable papers. I am also grateful to the external reviewers and the editorial committee members, especially the guest editors of this special section, Prof. Shingo Yamaguchi and Prof. Tomoyuki Yokogawa for their devoted efforts towards the success of the special section and the progress of formal approaches.

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Fuyuki Ishikawa *(Member)* is Associate Professor at Information Systems Architecture Science Research Division, and also Deputy Director at GRACE Center, in National Institute of Informatics, Japan. His interests are in software engineering for dependability, including formal methods, testing, optimization, and adaptation, especially for smart and autonomous systems.