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Structured Object-Oriented Formal Language and Method

10th International Workshop, SOFL+MSVL 2020
Singapore, March 1, 2021
Revised Selected Papers

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Preface

The Structured Object-Oriented Formal Language (SOFL) has been developed to address the challenge of how to transform formal methods principles and techniques into practice by providing a comprehensible specification language, a practical modeling method, various verification and validation techniques, and tool support through effective integration of formal methods with conventional software engineering techniques. SOFL integrates Data Flow Diagrams, Petri Nets; and VDM-SL to offer a visualized and formal notation for specification construction; a three-step approach to requirements acquisition and system design; specification-based inspection and testing methods for detecting errors in both specifications and programs; and a set of tools to support modeling and verification. The Modeling, Simulation and Verification Language (MSVL) is a parallel programming language. Its supporting toolkit, MSV, has been developed to enable us to model, simulate, and verify a system in a formal manner. Following the success of previous SOFL+MSVL workshops, this workshop aimed to continuously promote the development and combination of the SOFL formal engineering method and the MSVL formal method, as well as the applications of their fundamental principles and specific techniques for developing other formal engineering techniques.

The workshop attracted 24 submissions on formal modeling, formal verification, model checking, metamorphic testing, natural language processing, and geometric modeling. Each submission was rigorously reviewed by two or more Program Committee members on the basis of technical quality, relevance, significance, and clarity, and 13 papers were accepted for publication in the workshop proceedings. The acceptance rate was 54%.

We would like to thank ICFEM 2020 for supporting the organization of the virtual meeting and all of the Program Committee members for their great efforts and cooperation in reviewing and selecting the papers. We would also like to thank all the participants for attending presentation sessions and actively joining discussions at the workshop. Finally, our gratitude goes to the editors, Anna Kramer and Guido Zosimo-Landolfo at Springer, for their continuous support in publishing the workshop proceedings.

March 2021

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