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Formal Methods and Software Engineering

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Preface

Formal engineering methods are intended to offer effective means for integration of formal methods and practical software development technologies in the context of software engineering. Their purpose is to provide effective, rigorous, and systematic techniques for significant improvement of software productivity, quality, and tool supportability. In comparison with formal methods, a distinct feature of formal engineering methods is that they emphasize the importance of the balance between the qualities of simplicity, visualization, and preciseness for practicality. To achieve this goal, formal engineering methods must be developed on the basis of both formal methods and existing software technologies in software engineering, and they must serve the improvement of the software-engineering process.

ICFEM 2008 marks the tenth anniversary of the first ICFEM conference, which was held in Hiroshima in 1997. It aims to bring together researchers and practitioners who are interested in the development and application of formal engineering methods to present their latest work and discuss future research directions. The conference offers a great opportunity for researchers in both formal methods and software engineering to exchange their ideas, experience, expectation and to find out whether and how their research results can help advance the state of the art.

This volume contains the papers presented at ICFEM 2008, held October 27–31, 2008 at the Kitakyushu International Conference Center, Kitakyushu City, Japan. There were 62 submissions, each of which was reviewed by three Program Committee members. The committee decided to accept 20 papers based on originality, technical contribution, presentation, and relevance to formal engineering methods. We sincerely thank the Program Committee members and their co-reviewers for their professional work and great effort in the paper reviewing and selection process. We also thank the three keynote speakers, Takuya Katayama, Jeff Offutt, and John Hatcliff, for their contributions to the conference program. Professor Katayama gave a talk on how formal methods can be made acceptable by industry. Professor Offutt presented a talk on how programmers and testers could use formal methods in practice; and Professor Hatcliff spoke about contract-based reasoning for verification and certification of secure information-flow policies in industrial products.

In addition to the conference's main program, two workshops were organized. One was the First IEEE International Workshop on UML and Formal Methods (UML&FM 2008) and the other was the First International Workshop on Formal Methods Education and Training (FMET 2008). We thank the workshop organizers for their great efforts and contributions to the conference.

ICFEM 2008 was jointly organized by Kyushu University and Hosei University. It was sponsored by the ICFEM Organizing Committee and supported by

the IEEE Fukuoka Section, the Software Engineers Association of Japan (SEA), the West Japan Industry and Trade Convention Association and several other organizations. The EasyChair system was used to manage the submissions, reviewing, paper selection, and proceedings production. We would like to thank the EasyChair team for a very useful tool.

August 2008

Shaoying Liu
Tom Maibaum
Keijiro Araki

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