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Loek Cleophas · Mieke Massink (Eds.)

Software Engineering and Formal Methods

SEFM 2020 Collocated Workshops

ASYDE, CIFMA, and CoSim-CPS
Amsterdam, The Netherlands, September 14–15, 2020
Revised Selected Papers

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Preface

This volume contains the selected and revised versions of papers that have been presented at three international workshops co-located with the 18th edition of the International Conference on Software Engineering and Formal Methods (SEFM 2020). Because of the COVID-19 pandemic, both the conference and the workshops were held virtually. They were hosted by the Centre for Mathematics and Informatics (CWI) in Amsterdam, The Netherlands, and took place on September 14–17, 2020.

The SEFM 2020 international conference offered a virtual interactive platform for leading researchers and practitioners from academia, industry, and government to advance the state of the art in formal methods, to facilitate their uptake in the software industry, and to encourage their integration within practical software engineering methods and tools.

The work presented at the three international workshops focused on emerging areas of software engineering, software technologies, model-driven engineering, and formal methods and on interdisciplinary topics on the border of software and cognition. In particular, the contributions that are collected in this volume have been selected from the presentations at the following workshops:

- **ASYDE 2020 –** Second International Workshop on Automated and verifiable Software sYstem DEvelopment. Organised by: Marco Autili, University of L'Aquila, Italy; Federico Ciccozzi, Mälardalen University, Västerås, Sweden; Francesco Gallo, University of L'Aquila, Italy; Marjan Sirjani, Mälardalen University, Västerås, Sweden. The ASYDE workshop series is the result of a follow-up action, thanks to the work of the Steering Committee members, bringing together and consolidating the following previous events: OrChor'14, SCFI'15, SCART'15, VeryComp'16. The review procedure consisted of a single round of peer review, single blind, with 3 reviews per submission.
- **CIFMA 2020 –** Second International Workshop on Cognition: Interdisciplinary Foundations, Models and Applications. Organised by: Pierluigi Graziani, University of Urbino, Italy; Pedro Quaresma, University of Coimbra, Portugal. The review procedure consisted of two rounds of peer review, single blind, with 4 reviews per submission.
- **CoSim-CPS 2020 –** Fourth International Workshop on Formal Co-Simulation of Cyber-Physical Systems. Organised by: Cinzia Bernardeschi, University of Pisa, Italy; Cláudio Gomes, Aarhus University, Denmark; Paolo Masci, National Institute of Aerospace (NIA), USA; and Peter Gorm Larsen, Aarhus University, Denmark. The review procedure consisted of a single round of peer review, single blind, with 3 reviews per submission.

We are grateful to all organisers of the workshops at SEFM 2020 for their selection of interesting topics and presentations, despite the difficult circumstances due to the pandemic. We would also like to thank the members of the respective Programme

Committees and reviewers for their thorough and careful reviews, for organising the programme for each workshop, and for making the compilation of this volume possible.

We thank all authors of contributions and all attendees of the workshops, as well as the Keynote Speakers for adapting their excellent presentations and discussions to the new virtual setting. Special thanks go the hosting institution CWI in Amsterdam, its organising team, and, in particular, the general chairs of the SEFM 2020 conference, Frank de Boer and Antonio Cerone, for their incredible work to make this event possible under the continuously changing circumstances and uncertainties created by the pandemic.

November 2020

Loek Cleophas
Mieke Massink

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