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Marco Temperini · Gentiane Venture (Eds.)

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# Software Engineering and Formal Methods

SEFM 2021 Collocated Workshops

CIFMA, CoSim-CPS, OpenCERT, ASYDE  
Virtual Event, December 6–10, 2021  
Revised Selected Papers

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# Preface

The 19th International Conference on Software Engineering and Formal Methods (SEFM 2021) was held online during December 6–10, 2021. The main conference was held during December 8–10 and the collocated events were held during December 6–7. The decision to hold the conference and its collocated events in virtual mode was due to the difficult situation, in terms of health and mobility, caused by the COVID-19 pandemic. The organization of the virtual events was a joint effort of Carnegie Mellon University (USA), Nazarbayev University (Kazakhstan), and the University of York (UK). In particular, Nazarbayev University led and sponsored the organization of the collocated events and coordinated the editing of this proceedings volume.

This volume collects the proceedings of four collocated workshops:

- CIFMA 2021 - the 3rd International Workshop on Cognition: Interdisciplinary Foundations, Models and Applications;
- CoSim-CPS 2021 - the 5th Workshop on Formal Co-Simulation of Cyber-Physical Systems;
- OpenCERT 2021 - the 10th International Workshop on Open Community approaches to Education, Research and Technology; and
- ASYDE 2021 - the 3rd International Workshop on Automated and verifiable Software sYstem DEvelopment.

The workshop organizers ensured that all papers received at least three reviews. Another collocated event, the 10th International Symposium “From Data to Model and Back” (DataMod 2021), had the proceedings published as a separate LNCS volume. The variety of focused themes and application domains addressed by these workshops greatly enriched the SEFM program and demonstrated that software engineering and formal methods can be used together in a large variety of ways and attract the interest and usage of important, often interdisciplinary, scientific communities.

We would like to thank the workshop organizers, program chairs, keynote speakers, and authors for their effort in contributing to a rich and interesting program. We also thank the SEFM Program Committee chairs, Radu Calinescu and Corina Pasareanu, for taking care of the collocated event registration process, and Ioannis Stefanakos for managing the SEFM 2021 website.

March 2022

Antonio Cerone

**Sponsor**



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# Contents

## **CIFMA 2021 - 3rd International Workshop on Cognition: Interdisciplinary Foundations, Models and Applications**

|   |     |
|---|-----|
| What Does It Mean to Inhibit an Action? A Critical Discussion<br>of Benjamin Libet's Veto in a Recent Study .....   | 5   |
| <i>Robert Reimer</i>  |     |
| Regret from Cognition to Code .....   | 15  |
| <i>Alan Dix and Genovefa Kefalidou</i>  |     |
| In Silico Simulations and Analysis of Human Phonological Working<br>Memory Maintenance and Learning Mechanisms with Behavior<br>and Reasoning Description Language (BRDL) ..... | 37  |
| <i>Antonio Cerone, Diana Murzagaliyeva, Nuray Nabiyeva, Ben Tyler,<br/>and Graham Pluck</i>   |     |
| Fostering Safe Behaviors via Metaphor-Based Nudging Technologies .....  | 53  |
| <i>Francesca Ervas, Artur Gunia, Giuseppe Lorini, Georgi Stojanov,<br/>and Bipin Indurkha</i>   |     |
| Developing the Semantic Web via the Resolution of Meaning Ambiguities .....   | 64  |
| <i>Simone Pinna, Francesca Ervas, and Marco Giunti</i>  |     |
| Original or Fake? How to Understand the Digital Artworks' Value<br>in the Blockchain .....  | 76  |
| <i>G. Antonio Pierro, Moaaz Sawaf, and Roberto Tonelli</i>  |     |
| Grounding Psychological Shape Space in Convolutional Neural Networks .....  | 86  |
| <i>Lucas Bechberger and Kai-Uwe Kühnberger</i>  |     |
| Unexpectedness and Bayes' Rule .....  | 107 |
| <i>Giovanni Sileno and Jean-Louis Dessalles</i>   |     |
| Can Reinforcement Learning Learn Itself? A Reply to 'Reward is Enough' .....  | 117 |
| <i>Samuel Allen Alexander</i>   |     |



**CoSim-CPS 2021 - 5th Workshop on Formal Co-Simulation of Cyber-Physical Systems**

Enabling Distributed and Hybrid Digital Twins in the Industry5.0 Cloud Continuum ..... 139  
*Paolo Bellavista*

Under What Conditions Does a Digital Shadow Track a Periodic Linear Physical System? ..... 143  
*Hao Feng, Cláudio Gomes, Michael Sandberg, Hugo Daniel Macedo, and Peter Gorm Larsen*

Convergence Properties of Hierarchical Co-simulation Approaches ..... 156  
*Irene Hafner and Niki Popper*

Co-simulation-Based Pre-training of a Ship Trajectory Predictor ..... 173  
*Motoyasu Kanazawa, Lars Ivar Hatledal, Guoyuan Li, and Houxiang Zhang*

Effect of Ship Propulsion Retrofit on Maneuverability Research Based on Co-simulation ..... 189  
*Tongtong Wang, Lars Ivar Hatledal, Motoyasu Kanazawa, Guoyuan Li, and Houxiang Zhang*

Co-simulation of a Model Predictive Control System for Automotive Applications ..... 204  
*Cinzia Bernardeschi, Pierpaolo Dini, Andrea Domenici, Ayoub Mouhagir, Maurizio Palmieri, Sergio Saponara, Tanguy Sassolas, and Lilia Zaourar*

Running Large-Scale and Hybrid Real-Time Aircraft Simulations in an HLA Framework ..... 221  
*Jean-Baptiste Chaudron, Aleksandar Joksimović, Pierre Siron, Rob Vingerhoeds, and Xavier Carbonneau*

Comparison Between the HUBCAP and DIGITBrain Platforms for Model-Based Design and Evaluation of Digital Twins ..... 238  
*Prasad Talasila, Daniel-Cristian Crăciunean, Pirvu Bogdan-Constantin, Peter Gorm Larsen, Constantin Zamfirescu, and Alea Scovill*

**OpenCERT 2021 - 10th International Workshop on Open Community approaches to Education, Research and Technology**

A Life-Long Learning Education Passport Powered by Blockchain Technology and Verifiable Digital Credentials: The BlockAdemiC Project ..... 249  
*Sofia Terzi, Stamelos Ioannis, Konstantinos Votis, and Thrasyvoulos Tsiatsos*

Open Source Discovery, Adoption, and Use: An Informal Perspective ..... 264  
*Anthony I. Wasserman*

DrPython–WEB: A Tool to Help Teaching Well-Written Python Programs ..... 277  
*Tommaso Battistini, Nicolò Isaia, Andrea Sterbini, and Marco Temperini*

Formal Methods Communities of Practice: A Survey of Personal Experience ..... 287  
*Jonathan P. Bowen and Peter T. Breuer*

Learning from Mistakes in an Open Source Software Course ..... 302  
*Olzhas Zhangelidov*

**ASYDE 2021 - 3rd International Workshop on Automated and verifiable Software sYstem DEvelopment**

A Probabilistic Model Checking Approach to Self-adapting Machine Learning Systems ..... 317  
*Maria Casimiro, David Garlan, Javier Cámara, Luís Rodrigues, and Paolo Romano*

Integration of COTS Processing Architectures in Small Satellites for Onboard Computing Using Fault Injection Testing Methodology ..... 333  
*Jose-Carlos Gamazo-Real, Juan Rafael Zamorano-Flores, and Ángel Sanz-Andrés*

**Author Index** ..... 349