

Proceedings of the Doctoral Consortium Papers at the 35th International Conference on Advanced Information Systems Engineering (CAiSE 2023)

Conference hosted by San Jorge University Spain, 12-16 June 2023, Zaragoza 2023.

Edited by

Raimundas Matulevičius¹ and Daniel Mendez²

¹ University of Tartu, Tartu, Estonia

² Blekinge Institute of Technology, Sweden

CAiSE 2023 Doctoral Consortium Papers

Proceedings

This volume of CEUR-WS Proceedings contains 7 Doctoral Consortium papers presented at the 35th International Conference on Advanced Information Systems Engineering (CAiSE 2023). The conference was held in Zaragoza, Spain, 12–16 June 2023.

Copyright © 2023 for the individual papers by the papers' authors. Copyright © 2023 for the volume as a collection by its editors. This volume and its papers are published under the Creative Commons License Attribution 4.0 International (CC BY 4.0).

CEUR-WS.org, ISSN 1613-0073

PREFACE

This volume of CEUR-WS proceedings contains all accepted papers of the Doctoral Consortium, held in conjunction with the 35th International Conference on Advanced Information Systems Engineering (CAiSE 2023). This edition of CAiSE was hosted by San Jorge University and held in the Congress Palace of Zaragoza, Spain, between June 12th and 16th, 2023. Following the tradition of the CAiSE conference, it was once again a venue for innovative and rigorous research across the whole spectrum of Information Systems Engineering. This year's theme was cyber-human systems.

Its international Doctoral Consortium has a long-standing tradition of providing a forum for earlystage researchers working on foundations, techniques, tools and applications in the Information Systems Engineering field. The consortium offers them a supportive and safe environment to network with likeminded students, share their research plans, and receive constructive feedback from well-established scholars in the community. Moreover, the Doctoral Consortium provides the opportunity as well to explore and reflect upon a broader spectrum of topics, from research-centric questions, like the choice of appropriate research methodologies, to career-related questions.

The CAiSE 2023 Doctoral Consortium received a total of 10 submissions, all of which have been reviewed by two senior researchers acting as mentors in the Consortium. 7 papers could eventually be accepted for presentation during the event and for inclusion in the proceedings. We take special pride in the high acceptance rate of 70% as it reflects once again the openness and welcoming nature of the consortium to early-stage researchers. The timely and relevant feedback provided during the review phase to the invited PhD candidates allowed them to revise their submission, but also to effectively prepare themselves for their presentations and discussions on-site.

Over the course of three sessions, the PhD students then gave their presentations and discussed their research with the assigned mentors. Here, they received direct feedback, advice, and recommendations to further improve their overall PhD research plans. Lively discussions in the larger round of participants complemented each discussion and allowed all participating candidates to gain further insights on topics, research challenges, and strategies going beyond their own PhD topic.

The second part of the Doctoral Consortium concluded with a keynote given by Professor Xavier Franch from the Polytechnic University of Catalonia (UPC) on the topic of "This Crazy Little Thing Called PhD". Here, he reflected upon challenges and pitfalls, but also upon opportunities along the journey of doing a PhD in the larger field of Software Engineering. His reflections were deeply rooted in his profound experiences as researcher and supervisor alike, and he provided the audience with food for thoughts and key take-aways for their own PhD journey.

We would like to conclude by expressing our utmost sincere gratitude to all participating researchers for their presentations as well as to all mentors who were involved in the reviewing process and who served as discussants during the on-site presentations. We are confident and trust that all candidates will have a successful continuation of their PhD project and we hope that they could not only receive beneficial advice for their research, but that they could also use the opportunity to become part of the international CAiSE community. Finally, we would like to thank the CAiSE 2023 general chairs, Professor Carlos Cetina from San Jorge University and Professor Oscar Pastor from the Polytechnic University of Valencia for collegially supporting the organization of the Doctoral Consortium.

June 2023

Raimundas Matulevičius Daniel Mendez

Doctoral Consortium Organization

Doctoral Consortium Chairs

Raimundas Matulevičius	University of Tartu, Estonia
Daniel Mendez	Blekinge Institute of Technology, Sweden

Doctoral Consortium Mentors

Xavier Franch	Universitat Politècnica de Catalunya, Spain
John Krogstie	Norwegian University of Science and Technology, Norway
Selmin Nurcan	Université Paris 1 Panthéon – Sorbonne, France
Barbara Pernici	Polito, Italy
Jolita Ralyte	University of Geneva, Switzerland
Hajo Reijers	Utrecht University, the Netherlands
Pnina Soffer	University of Haifa, Israel
Janis Stirna	Stockholm University, Sweden
Amy Van Looy	Ghent University, Belgium
Roel Wieringa	University of Twente, the Netherlands

Table of Contents

Enabling Systematic Microservices Reuse Through DevOps Gabriel Morais	1
Methodology to Automate Intelligent User Interfaces' Development Alberto Gaspar Villalba	11
Towards a Conceptual Framework for System of Systems Jan Lundberg	18
Blockhain Interoperability Guzmán Llambías	25
Towards More Secure and Data Protective Intelligent Infrastructure Systems Mariia Bakhtina	35
Prescriptive Monitoring of Business Processes Under Uncertainty and Resource Constraints Mahmoud Shoush	45
Adaptive Filtering Strategies for Social Media Streams Carlo A. Bono	51