

Chiara Grosso Enrico Sandrin
Viet-Man Le (Eds.)

ConfWS 2025
27th International Workshop on Configuration

Bologna, Italy, October 25-26, 2025
Proceedings

© 2025 for the individual papers by the papers' authors. Copying permitted for private and academic purposes. Re-publication of material from this volume requires permission by the copyright owners.

Editors' contacts:

chiara.grosso@uniroma1.it, enrico.sandrin@unipd.it, v.m.le@tugraz.at

Preface

The 27th edition of the International Workshop on Configuration (ConfWS 2025) was co-located with the European Conference on Artificial Intelligence (ECAI 2025), hosted by the University of Bologna in Italy. As in previous years, ConfWS 2025 provided a lively forum for researchers and industry professionals interested in all aspects of configuration technologies.

ConfWS 2025 was organized as a two-day event and featured high-quality contributions across all configuration-related research areas. This edition placed particular emphasis on Green Configuration, in line with the EU Green Deal and the EU Agenda 2050, which aim to guide the European community toward a more sustainable future. Researchers and experts from academia and industry shared their contributions on the potential of configuration technologies to support sustainability goals. The program included special sessions on green configuration and sustainability, covering topics such as sustainable configurator applications, efficient reasoning, configuration space learning, integration of large language models (LLMs), and other aspects related to problem solving and optimization.

ConfWS 2025 welcomed participants from academia and industry. A total of 23 papers were submitted for peer review, and 17 were selected for publication in the workshop proceedings after evaluation by at least two independent reviewers per paper. Continuing the workshop's tradition, participants selected the best paper ("Generative Design as a Configuration Problem") and the best student paper ("From 4GL Spreadsheet Computations to Constraint Model Definitions – A Development Process").

We would like to express our sincere gratitude to all authors for their high-quality submissions, the program committee members for their thorough reviews. We also thank the University of Bologna, the ECAI Workshop Chairs, the ECAI Chairs, and Prof. Federico Chesani for their proactive support. Our special thanks go to PMH - Product Management Haag GmbH and to the keynote speaker Dr. Albert Haag for his inspiring contribution and for sharing reflections dating back to his first participation at ECAI in 1982.

Finally, we acknowledge the patronage of the MICS project (Made in Italy – Circular and Sustainable), funded as part of the European Union's Next-Generation EU program (Piano Nazionale di Ripresa e Resilienza – PNRR, Missione 4, Componente 2, Investimento 1.3 – D.D. 1551.11-10-2022, PE00000004). The views expressed in this editorial are solely those of the authors and do not necessarily reflect the official position of the European Union or the European Commission, which cannot be held responsible for any use made of the information contained herein.

December 2025

Chiara Grosso, Enrico Sandrin, Viet-Man Le

Workshop Chairs

Chiara Grosso, Sapienza University of Roma, Italy
Enrico Sandrin, University of Padova, Italy
Viet-Man Le, Graz University of Technology, Austria

Award Chair

Cipriano Forza, University of Padova, Italy

Program Committee

Alexander Felfernig, Graz University of Technology, Austria
Gerhard Friedrich, Alpen-Adria-Universität Klagenfurt, Austria
Gerhard Leitner, Alpen-Adria-Universität Klagenfurt, Austria
Lothar Hotz, Hamburger Informatik Technologie-Center, Germany
Andreas Falkner, Siemens AG Österreich, Vienna, Austria
Lidia Fuentes, Universidad de Málaga, Spain
Yue Wang, Hang Seng University, Hong Kong
José Ángel Galindo, Universidad de Sevilla, Spain
Markus Stumptner, University of South Australia, Australia
Lars Hvam, Technical University of Denmark, Denmark
David Benavides, Universidad de Sevilla, Spain
Cipriano Forza, University of Padova, Italy
Jean-Guillaume Fages, Cosling, France
Albert Haag, Product Management GmbH, Germany
Alois Haselboeck, Siemens AG Österreich, Austria
Richard Comploi-Taupe, Siemens AG Österreich, Vienna, Austria
Tomi Mänistö, University of Helsinki, Finland
Abdourahim Sylla, Université Grenoble Alpes, France
Juha Tiihonen, Variantum, Finland
Franz Wotawa, Graz University of Technology, Austria
Rüdiger Dehn, Lino GmbH, Germany
Hao Xu, Renault, France
Sara Shafiee, Technical University of Denmark, Denmark
Roberto Boselli, University of Milano-Bicocca, Italy
Simone DiLeo, Sapienza University of Roma, Italy
Nikola Suzić, University of Trento, Italy
Alessio Trentin, University of Padova, Italy
Elise Vareilles, Toulouse University, IMT Mines Albi, France

Contents

QuickXPlain Explanations for Feature Model Configuration <i>Alexander Felfernig, Damian Garber, Viet-Man Le and Sebastian Lubos</i>	8
From 4GL Spreadsheet Computations to Constraint Model Definitions – A Development Process <i>Boi Schaefer, Lothar Hotz and Kirsten David</i>	18
The Task Assignment Problem for Safety-Critical Networks Considering Communication and Criticality <i>Franz Wotawa, Julian Proenza, Manuel A. Barranco and Alberto Ballesteros</i>	30
Test-driven Generation of Constraint Satisfaction Problems Using Large Language Models <i>Christian Bähnisch, Lothar Hotz, Alexander Felfernig and Sebastian Lubos</i>	38
Towards LLM-enhanced Compiler Optimization <i>Damian Garber, Tamim Burgstaller, Sebastian Lubos, Patrick Ratschiller and Alexander Felfernig</i>	62
Towards Compiler Parameter Recommendation Using Code Embeddings <i>Damian Garber, Sebastian Lubos and Alexander Felfernig</i>	70
Complexity Indicators and Their Impact on Algorithm Performance in Automotive Part Selection <i>Daniel Bischoff, Tobias Nerz and Kaan Ekiz</i>	78
Heterogeneity: A Challenge in Automotive Product Configuration <i>Daniel Bischoff and Carsten Sinz</i>	96
Toward a Contingent-Configurational Perspective on Configuration Systems in the AEC Industry <i>Julius Olukayode Oluwale, Enrico Sandrin and Cipriano Forza</i>	103
Towards LLM-based Configuration and Generation of Books <i>Jovan Mihajlovic, Alexander Felfernig</i>	120

Towards LLM-Enhanced Product Line Scoping <i>Alexander Felfernig, Damian Garber, Viet-Man Le, Sebastian Lubos and Thi Ngoc Trang Tran</i>	128
Generative Design as a Configuration Problem <i>Jonathan Raines, David Barton and Ben Hicks</i>	135
Visualizing Customization: The Impact of Product Visualization Modalities on User-Friendly Description in Online Configurators <i>Achraf Arouya, Enrico Sandrin, Cipriano Forza and Alessio Trentin</i>	142
Designing for Circularity: Exploring Configurator-Based Decision Support for Eco-Design in Food Packaging <i>Chiara Grosso, Marco Scatto and Karen Venturini</i>	159
A Lifecycle- and Sustainability-Aware Product Configuration Model for Modular Industrial Systems <i>Gottfried Schenner, Giray Havur, Sophie Rogenhofer, Stefan Wallner, Erwin Filtz and Tassilo Pellegrini</i>	175
Sustainability Evaluation Metrics for Configuration Systems <i>Alexander Felfernig, Damian Garber, Sebastian Lubos and Thi Ngoc Trang Tran</i>	192
The Role of Generative AI in the Future of Smarthome Configuration <i>Gerhard Leitner</i>	199

