2023 ACM/IEEE International Conference on Model Driven Engineering Languages and Systems Companion (MODELS-C) | 979-8-3503-2498-3/23/$31.00 ©2023 IEEE | DOI: 10.1109/MODELS-C59198.2023.00134

Preface

4th International Workshop on Modeling in Low-Code Development Platforms (LowCode 2023)

The growing need for secure, trustworthy, and cost-efficient software, the recent developments in cloud computing technologies, and the shortage of highly skilled professional software developers, have given rise to a new generation of low-code software development platforms, such as Google AppSheet and Microsoft PowerApps. Low-code platforms enable the development and deployment of fully functional applications using mainly visual abstractions and interfaces and requiring little or no procedural code. This makes them accessible to an increasingly digital-native and tech-savvy workforce who can directly and effectively contribute to the software development process, even if they lack a programming background.

The adoption and need for low-code development platforms is growing at a fast pace. As evidence, Gartner expects that "by 2024 80% of technology products and services will be built by those who are not technology professionals"[1]. While low-code development platforms are in essence model-driven, there is little evidence that they make use of technologies developed in the Model-Driven Engineering (MDE) community. This highlights a need for increased cross-pollination between low-code developers and model-driven engineering researchers. Through the LowCode workshop, the former can benefit from increased awareness of existing technologies that can be reused/adapted in the context of low-code development platforms, while the latter can appreciate challenges that current model-driven technologies fall short at and identify opportunities for further research.

At the heart of low-code applications are typically models of the structure, the behavior, and the presentation of the application. Low-code application models need to be edited (using graphical and textual interfaces), validated, version-controlled and eventually transformed or interpreted to deliver user-facing applications. Since all these activities have been of core interest to the MoDELS community over the last two decades, we feel that a workshop on low-code software development at MoDELS is a very natural fit, and an opportunity to attract low-code platform vendors and users to our community, with substantial benefits to be reaped from both sides.

The objectives of the workshop are to:

- bring together developers and users of low-code platforms with model-driven engineering researchers and practitioners;
- explore the technologies that power contemporary low-code platforms;
- identify the open challenges that vendors and users of low-code platforms face
- identify solutions from the model-driven engineering community that could be ported/adapted in the context of low-code development

[1] *https://www.gartner.com/en/newsroom/press-releases/2021-06-10-gartner-says-the-majority-of-technology-products-and-services-will-be-built-by-professionals-outside-of-it-by-2024*

Topics of interest to the workshop include:

- Technologies underpinning low-code platforms
- Comparisons of classical MDE tools and low-code platforms
- Low-code development platforms as a service
- Citizen/end-user software development
- Recommender systems for low-code platforms
- Graphical and textual cloud-based editors
- Repositories of low-code development artifacts
- Low-code platforms for data-driven applications
- Low-code development for and from mobile devices
- Interoperability issues between low-code platforms
- Automation support in low-code platforms
- Scalability in low-code development
- Collaborative low-code development
- Empirical studies on using low-code platforms

This year it was the 4th edition of the workshop. We received 15 submissions, out of which the following 8 were accepted for publication in the proceedings and presentation during the workshop:

- Jörg Christian Kirchhof, Nico Jansen, Bernhard Rumpe and Andreas Wortmann.
  Navigating the Low-Code Landscape: A Comparison of Development Platforms.

- Octavian Patrascoiu.
  Performance and Scalability of DMN-Based LCNC Platforms.

- Arvid Butting, Timo Greifenberg, Katrin Hölldobler and Timo Kehrer.
  Model and Data Differences in an Enterprise Low-Code Platform.

- Jean-Marie Favre, Raquel Araujo de Oliveira and Jean-Sébastien Sottet.
  In Search of The Essence of No-Code – Elements of Data Modeling.

- István Koren, Nico Jansen, Judith Michael, Bernhard Rumpe and Enno Böse.
  A Low-Code Approach for Data View Extraction from Engineering Models with GraphQL.

- Adiel Tuyishime, Ludovico Iovino, Francesco Basciani, Jordi Cabot, Javier Luis Cánovas Izquierdo and Alfonso Pierantonio.
  Bridging Workflow Automation Tools and EMF Modeling Ecosystems.

- Bruno Nascimento, Rui Santos, Steven Abrantes and Carlos Quental.
  Readly - Books rating Low-Code Platform.

- Lars Westermann, Johannes Mey, René Schöne and Uwe Aßmann.
  A Performant Low-Code System for the Timely Implementation of Road Safety Regulations.

We would like to thank the MODELS 2023 organization for giving us the opportunity to organize this workshop, especially to the workshop chairs Davide di Ruscio (University of L'Aquila, Italy) and Leen Lambers (BTU Cottbus Senftenberg, Germany), who supported the organization of the workshop with their prompt and helpful messaging. Many thanks to all those who submitted papers to our workshop. Finally, our thanks go to the reviewers and the members of the Program Committee for their timely and insightful reviews.

Enjoy the LowCode 2023 workshop!

Dimitris Kolovos, *University of York*
Juan de Lara, *Universidad Autonoma de Madrid*
Massimo Tisi, *IMT Atlantique, Nantes*
Manuel Wimmer, *Johannes Kepler University, Linz*
LowCode 2023 Organizing Committee