Joint Workshop on Foundations and Practice of Visual Modeling (FPVM) and Data for Model–Driven Engineering (Data4MDE)

Amleto **Di Salle**[1], Alfonso **Pierantonio**[1], Juha–Pekka **Tolvanen**[2], Juri **Di Rocco**[1], Juan **De Lara**[3] and Michel **Chaudron**[4]

[1]*University of L'Aquila, Italy*
[2]*Metacase, Finland*
[3]*Autonomous University of Madrid, Spain*
[4]*Eindhoven University of Technology (TUE), The Netherlands*

FPVM

The sheer complexity of software systems nowadays made modeling artifacts pervasive throughout the development process, be use requirements, analysis, design, or development. Whether models are used for communication or prescriptive purposes, their syntax and pragmatics affect the usability and represent contributory factors concerning the accidental complexity. The diversity of modeling notations and approaches permit to classify them according to different taxonomies. General-purpose and domain-specific modeling languages can be created with different intended scopes, although all of them can make use of graphical, textual, maps, matrices, tables, and combinations regarding its concrete syntax. These representations have the undoubted advantage of capture and increase understanding of complex software systems and better grasp the rationale behind them. In essence, a visual modeling language creates a joint base for the modeler by improving their communication and lays a solid foundation for the implementation.

FPVM 2021 aims to promote and foster discussions on many aspects of visual modeling languages, including novel and visionary ideas and techniques, notations for more expressive and enhanced model modeling environments, technical editors, and usability of tools and meta-tools.

The first edition of FPVM was held in virtual mode, on the June 22 2021, and co-located with the Software Technologies: Applications and Foundations (STAF). FPVM has received three submissions. After a thorough peer-review process involving three members from the

program committee per each submission, three submissions have been accepted for publication (acceptance rate was 100%).

The workshop program included the invited talk entitled *Why Notation Matters and How Language Engineering Can Help* given by Full Professor Manuel Wimmer from Johannes Kepler Universität Linz (Austria).

We would like to thank the FPVM program committee for making the workshop possible. Additionally, we would like to thank the STAF workshop chairs Ludovico Iovino and Lars Michael Kristensen for their help and support, and STAF for hosting the workshop.

FPVM Organization

Workshop Chairs

Amleto Di Salle	University of L'Aquila, Italy
Alfonso Pierantonio	University of L'Aquila, Italy
Juha–Pekka Tolvanen	Metacase, Finland

Program Committee

Luca Berardinelli	Johannes Kepler University Linz, Austria
Paolo Bottoni	Sapienza University of Roma, Italy
Federico Ciccozzi	Mälardalen University, Sweden
Benoit Combemale	University of Rennes 1, France
Juan De Lara	Autonomous University of Madrid, Spain
Juri Di Rocco	University of L'Aquila, Italy
Davide Di Ruscio	University of L'Aquila, Italy
Jeff Gray	University of Alabama, United Stated of America
Ludovico Iovino	Gran Sasso Science Institute, Italy
Dimitris Kovolos	University of York, United Kindgom
Sebastien Mosser	Université du Québec à Montréal, Canada
Richard Paige	McMaster University, Canada
Matthias Tichy	University of Ulm, Germany
Hans Vangheluwe	University of Antwerp, Belgium and McGill University, Canada
Manuel Wimmer	Johannes Kepler University Linz, Austria

Data4MDE

Data is a precious resource and is the most important part of all applications, e.g., data analytics, machine learning, etc. Without qualitative data, there is no training phase and all the modern research will go vain. In Model-Driven Engineering (MDE), data are crucial to perform any research activity like any discipline. MDE researchers spend time and effort to create a suitable corpus of objects to answer specific research questions. The selection of an adequate corpus of data often requires intense, tedious, and manual activities. In recent years, MDE adoption is taking advantage of the integration of Machine Learning (ML) techniques into domain modeling. Empirical analyses, data analytics, and ML algorithms perform better as much as they can learn commonalities over massive datasets. Considering the above information, the need for data is a challenging issue that affects any researcher in their career. This can be brought to the modeling world, where data are modeling artifacts.

Data4MDE aims to share and discuss identified MDE datasets enabling research in analytics, reuse, model analysis, testing, learning-based approaches, and many other connected fields. Data4MDE intends to provide a discussion forum for describing how the data are collected, how researchers can contribute to the dataset, and how the dataset can help the community with further research.

The first edition of Data4MDE was held in virtual mode, on the June 22 2021, and co-located with the Software Technologies: Applications and Foundations (STAF). We would like to thank the PC members for their availability in reviewing papers.

The workshop program included a keynote talk entitled *"Collecting 500K models (and what to do with them)"* by Jesús Sánchez Cuadarado, researcher at Universidad de Murcia (Spain). In his keynote, he presented MAR: a search engine used to collect and index more than 500.000 models.

Finally, the Data4MDE session included a panel discussion forum where four experts discussed the main issues to curate the MDE dataset and their proposed applications. Each panelist gave a short presentation introducing their research and the challenges/opportunities they found in curating corpus of modeling artifacts. A discussion among the panel and the audience concluded the session.

Data4MDE Organization

Workshop Chairs

Juri Di Rocco	University of L'Aquila, Italy
Juan De Lara	Autonomous University of Madrid, Spain
Michel Chaudron	Eindhoven University of Technology (TUE), The Netherlands

Keynote

Jesús Sánchez Cuadrado	Universidad de Murcia, Spain

Panelists

Jordi Cabot   Research center of the Open University of Catalonia, Spain
Jesús Sánchez Cuadrado   Universidad de Murcia, Spain
Davide Di Ruscio   University of L'Aquila, Italy
Steven Kelly   CTO of MetaCase, Finland

Program Committee

Önder Babur   University of Technology (TUE), The Netherlands
Francesco Basciani   University of L'Aquila, Italy
Loli Burgueňo   Open University of Catalonia, Spain
Loek Cleophas   University of Technology (TUE), The Netherlands
Thomas Degueule   Univ. Bordeaux CNRS, France
Romina Eramo   University of L'Aquila, Italy
Mirco Franzago   University of L'Aquila, Italy
Antonio Garcia-Dominguez   Aston University, UK
Johannes Härtel   Universität Koblenz-Landau, Germany
Ludovico Iovino   Gran Sasso Science Institute, Italy
Ralf Lämmel   Universität Koblenz, Germany and Facebook London, UK
Alfonso Pierantonio   University of L'Aquila, Italy
Adrian Rutle   Western Norway University of Applied Sciences, Norway
Eugene Syriani   University of Montreal, Canada
Jesús Sánchez Cuadrado   Universidad de Murcia, Spain
Vadim Zaytsev   Universiteit Twente, The Netherlands