

Preface

RuleML+RR 2025 is the leading international joint conference in the field of rule-based reasoning. It focuses on theoretical advances, novel technologies, and innovative applications concerning knowledge representation, reasoning, and learning with rules. The conference is an annual event that builds bridges between academia and industry. These proceedings present the papers from the satellite events of RuleML+RR 2025, namely the 19th Rule Challenge, 9th Doctoral Consortium, Industry Track, and Networking Session.

The Rule Challenge is one of the highlights of the conference and seeks to provide competition among innovative rule-oriented applications, aimed at both the research and industrial side. Submissions typically present demos related to the RuleML+RR topics, supply benchmarks and comparison results for rule engines and rule-based machine learning techniques, illustrate rule- and model-driven engineering, report on industrial experiences, present real case studies and practical experiences. The Rule Challenge is a competition, and a prize is awarded for the best Rule Challenge paper. This year's programme had 9 accepted papers

The Doctoral Consortium is an initiative of the RuleML+RR community to attract and promote student research in the topics of the conference. It offers students close contact with leading experts in the field, as well as an opportunity to present and discuss their ideas in a dynamic and friendly setting. The topics range from theoretical aspects of rules and reasoning, such as knowledge elicitation within the knowledge graphs, ontology-enriched data management, data anonymization, and description logics, to relevant practical applications of machine learning. Students presented their work through brief oral presentations during a dedicated session of the RuleML+RR conference and had the chance to discuss their research in detail with experts in the field. This year's programme had 5 accepted papers from doctoral students.

The RuleML+RR Industry Track targets work from all areas of Rules and Reasoning based technologies specifically for solving real industry problems. It welcomes experiences from practitioners when applying rules to industries such as engineering, manufacturing, agriculture, energy, media, financials, telecommunications, healthcare, life sciences, government, smart cities, tourism and cultural heritage. This year's programme had 4 accepted papers.

The project Networking Session of RuleML+RR aims to bring together relevant projects working in the area of data and AI with particular focus on, but not limited to, the event topics: rules, reasoning, decisions, and explanations. The session provides an opportunity to: share knowledge between research and innovation projects operating in the area of data and AI; identify potential synergies between the projects, e.g., transfer data and AI technology between projects, joint publications, joint dissemination activities, etc.; discuss funding opportunities such as Horizon Europe, Digital Europe, ERC, etc. This year's proceedings had 4 accepted contributions.

Programme committee

Adrian Paschke, Freie Universität Berlin, Germany

Alexandra Rogova, Université Paris Cité, France

Alisa Kovtunova, TU Dresden, Germany

Andreas Harth, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

Bettina Finzel, Otto-Friedrich-Universität Bamberg, Germany
Cogan Shimizu, Wright State University, United States
David Carral, University of Montpellier, France
Davide Lanti, Free University of Bozen-Bolzano, Italy
Doerthe Arndt, TU Dresden, Germany
Eleonora Laurenza, Sapienza University of Rome, Italy
Erwin Filtz, Siemens AG, Austria
Evdokimos Konstantinidis, Aristotle University of Thessaloniki, Greece
Fajar J. Ekaputra, Vienna University of Economics and Business, Austria
Horea Adrian Grebla, Babeş-Bolyai University of Cluj-Napoca, Romania
Ioan Toma, Onlim GmbH, Austria
Ioana Georgiana Ciuciu, Babeş-Bolyai University, Romania
Juliana Bowles, School of Computer Science, University of St Andrews, United Kingdom
Lorena Etcheverry, Universidad de la República, Uruguay
Manolis Koubarakis, National and Kapodistrian University of Athens, Greece
Marko Grobelnik, Jozef Stefan Institute, Slovenia
Martin Berger, Department of Informatics, University of Sussex, United Kingdom
Oscar Corcho, Universidad Politécnica de Madrid, Spain
Patrik Schneider, Vienna University of Technology, Austria
Pavlos Fafalios, Technical University of Crete, Greece
Petr Masa, Prague University of Economics and Business, Czechia
Radu Prodan, University of Klagenfurt, Austria
Robert David, Vienna University of Economics and Business, Austria
Roman Bauer, University of Surrey, United Kingdom
Sotirios Koussouris, Suite5 Data Intelligence Solutions Ltd, Cyprus
Stefania Dumbrava, ENSIIE Paris-Evry, France
Umutcan Serles, University of Innsbruck, Austria
William Van-Woensel, University of Ottawa, Canada
Yannis Tzitzikas, University of Crete, Greece
Yury Glikman, Fraunhofer, Germany

Alessandro Margara, Tomáš Kliegr, Ognjen Savkovic, Shqiponja Ahmetaj, Riccardo Tommasini, Luigi Bellomarini, Evgeny Kharlamov, Ioana Georgiana Ciuciu, Dumitru Roman, George Konstantinidis, Emanuel Sallinger, Ahmet Soylu – editors

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