Preface

Advances in Modal Logic (AiML) is an initiative founded in 1995 and aimed at presenting an up-to-date picture of the state of the art in modal logic and its many applications. It consists of a conference series together with volumes based on the conferences. The conference series is the main international forum at which research on all aspects of modal logic is presented. The first installment was held in 1996 in Berlin, Germany, and since then it has been organized biennially, with meetings in 1998 in Uppsala, Sweden; in 2000 in Leipzig, Germany (jointly with ICTL-2000); in 2002 in Toulouse, France; in 2004 in Manchester, UK; in 2006 in Noosa, Australia; in 2008 in Nancy, France; in 2010 in Moscow, Russia; in 2012 in Copenhagen, Denmark; in 2014 in Groningen, the Netherlands; in 2016 in Budapest, Hungary; in 2018 in Bern, Switzerland (jointly with LATD 2018); in 2020 in Helsinki, Finland and in 2022 in Rennes, France (co-located with LAMAS&SR 2022). Information about AiML and related events, including conference proceedings, is available at the website www.aiml.net.

The fifteenth conference in the AiML series was organized by Igor Sedlár (the Institute of Computer Science of the Czech Academy of Sciences, ICS CAS) with the assistance of Marta Bílková, Petr Cintula, Wesley Fussner, Zuzana Haniková, Raheleh Jalali, Filip Jankovec, Chun-Yu Lin, Hana Stříhavková (ICS CAS), Olga Bažantová, Ondrej Majer, Vít Punčochář (the Institute of Philosophy of the Czech Academy of Sciences), Vojtěch Kolman (Faculty of Arts of Charles University). The conference was co-located with the 21st International Conference on Relational and Algebraic Methods in Computer Science (RAMiCS 2024). The website of AiML 2024 can be found at www.cs.cas.cz/aiml2024/.

This volume contains abstracts of invited talks and contributed papers from the conference. The invited talks were given by

- Alexandru Baltag (University of Amsterdam)
- Marta Bílková (Czech Academy of Sciences)
- David Fernández-Duque (University of Barcelona)
- Claudia Nalon (University of Brasilia)

The Programme Committee received 64 regular paper submissions. Of these, 34 were selected for this volume by a reviewing process where every paper received three independent expert reviews.

The volume includes papers on propositional modal logics, their products and fusions, predicate modal logics, dynamic epistemic logics, spatial logics, deontic logics, many-valued modal logics, provability logics, graded modal logic, non-distributive modal logic, apodictic syllogistic, inquisitive, intuitionistic,

substructural, conditional, fundamental, probabilistic, hybrid, quantum logics and other related logics. The topics of the papers at AiML 2024 include history of modal reasoning, proof theory, model theory, interpolation, unification, canonicity and canonical extensions, propositional quantifiers, bisimulations, neighbourhood semantics, polyhedral and simplicial semantics, coalgebraic semantics, decidability and complexity results, Kripke and topological completeness, as well as results in the style of van Benthem characterization theorem, Goldblatt-Thomason theorem, Hennessy-Milner theorem and Lovász theorem.

In addition, there were 17 submissions for short presentations at the conference, and 12 were accepted after a reviewing process whereby each submission received at least 3 independent expert reviews.

The members of the AiML 2024 Programme Committee were:

- Philippe Balbiani (Institut de Recherche en Informatique de Toulouse)
- Lev Beklemishev (Steklov Institute of Mathematics)
- Nick Bezhanishvili (University of Amsterdam)
- Willem Conradie (University of the Witwatersrand)
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- Clemens Kupke (University of Strathclyde)
- Agi Kurucz (King's College London)
- Roman Kuznets (TU Wien)
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- Tim Lyon (Technische Universität Dresden)
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- Larry Moss (Indiana University Bloomington)
- Sara Negri (University of Genova)
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- Alessandra Palmigiano (VU Amsterdam)
- Xavier Parent (TU Wien)
- Elaine Pimentel (UCL)
- Vít Punčochář (Institute of Philosophy, Czech Academy of Sciences)
- Revantha Ramanayake (University of Groningen)
- Renate A. Schmidt (The University of Manchester)
- Igor Sedlár (Czech Academy of Sciences)
- Ilya Shapirovsky (New Mexico State University)
- Viorica Sofronie-Stokkermans (University of Koblenz)

- Balder Ten Cate (ILLC, University of Amsterdam)
- Hans van Ditmarsch (University of Toulouse, CNRS, IRIT)
- Yde Venema (University of Amsterdam)
- Rineke Verbrugge (University of Groningen)
- Heinrich Wansing (Ruhr University Bochum)
- Frank Wolter (University of Liverpool)

The Programme Committee was chaired by:

- Agata Ciabattoni (TU Wien)
- David Gabelaia (TSU Razmadze Mathematical Institute)

The Steering Committee of AiML for 2024–2026 consists of:

- Guram Bezhanishvili (New Mexico State University)
- Agata Ciabattoni (TU Wien)
- Giovanna D'Agostino (University of Udine)
- David Fernández-Duque (University of Barcelona)
- David Gabelaia (TSU Razmadze Mathematical Institute)
- Nicola Olivetti (Aix-Marseille Université)
- Alessandra Palmigiano (VU Amsterdam)
- Igor Sedlár (Czech Academy of Sciences)
- Rineke Verbrugge (University of Groningen)

Many other people assisted with the reviewing process, including:

Jean-Marie Le Bars, Bartosz Bednarczyk, Hanoch Ben-Yami, Katalin Bimbo, Adam Bjorndahl, Luca Carai, Ivano Ciardelli, Giorgio Cignarale, Abhishek De, Yiwen Ding, Andrea De Domenico, Sergey Drobyshevich, Lev Dvorkin, Sebastian Enqvist, Raül Espejo-Boix, Jie Fan, Nicholas Ferenz, Camillo Fiorentini, Damiano Fornasiere, Tim French, Peter Fritz, Rustam Galimullin, Didier Galmiche, Han Gao, Francesco Antonio Genco, Iris van der Giessen, Marianna Girlando, Roberto Giuntini, Quentin Gougeon, Giuseppe Greco, Gianluca Grilletti, Jim de Groot, Ronald de Haan, Ullrich Hustadt, Joost Joosten, Bruce Kapron, Roman Kniazev, Andrey Kudinov, Louwe B. Kuijer, Serafina Lapenta, Tadeusz Litak, Xinghan Liu, Minghui Ma, Ondrej Majer, Matteo Manighetti, Krishna Balajirao Manoorkar, Miguel Martins, Andrea Masini, Daniel Mery, Marianela Morales, Cláudia Nalon, Victor Barroso Nascimento, Pavel Naumov, Karl Nygren, Sergei Odintsov, Mattia Panettiere, Fabio Papacchini, Konstantinos Papafilippou, Edi Pavlović, Mati Pentus, Luiz Carlos Pereira, Ivo Pezlar, Adam Přenosil, Luca Reggio, Mikhail Rybakov, Simon Santschi, Thomas Schlögl, Ezra Schoen, Ian Shillito, Dmitry Shkatov, Sergey Slavnov, Vladislav Sliusarev, John Stell, Grigorii Stepanov, Apostolos Tzimoulis, Amanda Vidal, Cheng-Syuan Wan, Yì Nicholas Wáng, Kentaro Yamamoto, Lukas Zenger, Margherita Zorzi.

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Agata Ciabattoni,
David Gabelaia,
Igor Sedlár