

Michael Rawson

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Timeline

- 2025– **New Frontiers Fellow**¹, *University of Southampton*, UK
- 2021–25 **Projektassistent**, *TU Wien*, Austria
- 2020–21 **Research Associate**, *University of Manchester*, UK
- 2017–21 **PhD**, *University of Manchester*, UK
- 2014–17 **BA Computer Science**, *University of Cambridge*, UK

Research Interests

I am most interested in the theory and practice of automated theorem proving for classical first-order logic, including machine-learned heuristic methods and proof reconstruction. I am also interested in applications of automated reasoning, including interactive theorem proving.

I also develop the world-class theorem prover VAMPIRE with an international team.

Funding

- 2025 Project *Learning to do Math with Vampires and Spiders* funded by the Renaissance Philanthropy/XTX Markets AI for Math Fund, with Andrei Voronkov at the University of Manchester. USD 927,000.

Student Supervision

- 2025– Alistair Sirman, PhD co-supervision
- 2025–2026 Joe Hall, part III individual project *Automated Finite Model Building for First-Order Logic*

Organisation

- 2026 SAT/SMT/AR summer school, co-chair
- 2023– International Workshop on the Implementation of Logics (IWIL), co-chair
- 2023– VAMPIRE Workshop, co-organiser
- 2025 EuroProofNet Workshop on Theorem Proving and Machine Learning in the age of LLMs, co-organiser
- 2024 EuroProofNet Workshop on Alignment of Proof Systems and Machine Learning, co-organiser
- 2024 Tools and Algorithms for the Construction and Analysis of Systems (TACAS), artefact evaluation co-chair

¹permanent position with responsibilities similar to a lecturer

Program Committees

- 2022–25 Conference on Artificial Intelligence and Theorem Proving (AITP)
- 2024–25 Workshop on Composite AI (CompAI)
- 2023, 2025 Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC)
- 2024 Workshop on Practical Aspects of Automated Reasoning (PAAR)
- 2023–24 VCLA Student Awards
- 2023 International Conference on Automated Reasoning with Analytic Tableaux and Related Methods (TABLEAUX)
- 2023 Automated Reasoning with Connection Calculi (AReCCa)
- 2021 Workshop on Parallel and Distributed Automated Reasoning (PDAR)

Doctoral Examination

- 2025 Gonalo Araujo, NOVA Lisbon, jury member

Teaching

- 2026 Formal Specification and Verification — 10 lectures of a new undergraduate course, ca. 300 students
- 2024 Formal Methods Seminar — small group reading research papers

Invited Talks

- 2025 Workshop: AI Transforms Math Research, Augsburg
- 2023 Joint EuroProofNet Workshops, Prague
- 2022 Conference on Artificial Intelligence and Theorem Proving

Selected Publications

A complete list is available on my homepage.

- 2025 *Divide and Conquer: a Compositional Approach to Game-Theoretic Security*. Ivana Bocevska, Anja Petkovi Komel, Laura Kovacs, Sophie Rain, Michael Rawson. (OOPSLA)
- Constraint Learning for Non-Confluent Proof Search*. Michael Rawson, Clemens Eisenhofer, Laura Kovacs. (TABLEAUX)
- The VAMPIRE Diary*. VAMPIRE authors. (CAV, distinguished)
- Expressive Power of Temporal Message Passing*. Przemysaw Andrzej Waęga, Michael Rawson. (AAAI)
- 2024 *Reducibility Constraints in Superposition*. Marton Hajdu, Laura Kovacs, Michael Rawson, Andrei Voronkov. (IJCAR)
- Rewriting and Inductive Reasoning*. Marton Hajdu, Laura Kovacs, Michael Rawson. (LPAR)

- CryptoVampire: Automated Reasoning for the Complete Symbolic Attacker Cryptographic Model.* Simon Jeanteur, Laura Kovács, Matteo Maffei, Michael Rawson. (S&P)
- 2023 *CheckMate: Automated Game-Theoretic Security Reasoning.* Lea Salome Brugger, Laura Kovács, Anja Petković Komel, Sophie Rain, Michael Rawson. (CCS)
- Non-Classical Logics in Satisfiability Modulo Theories.* Clemens Eisenhofer, Ruba Allassaf, Michael Rawson, Laura Kovács. (TABLEAUX)
- Lemmas: Generation, Selection, Application.* Michael Rawson, Christoph Wernhard, Zolt Zombori, Wolfgang Bibel. (TABLEAUX)
- Superposition with Delayed Unification.* Ahmed Bhayat, Johannes Schoisswohl, Michael Rawson. (CADE)
- SAT-based Subsumption Resolution.* Robin Coutelier, Laura Kovács, Michael Rawson, Jakob Rath. (CADE)
- 2022 *The RAPID Software Verification Framework.* Pamina Georgiou, Bernhard Gleiss, Ahmed Bhayat, Michael Rawson, Laura Kovács, Giles Reger. (FMCAD)
- 2021 *A Multithreaded VAMPIRE with Shared Persistent Grounding.* Michael Rawson, Giles Reger. (FMCAD)
- Eliminating Models during Model Elimination.* Michael Rawson, Giles Reger. (TABLEAUX)