Reijo Jaakkola

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Education

PhD in Mathematics — Tampere University (Expected early 2026)
Title: *Results on Computational Logics: Expressivity, Model Theory and Complexity*

MSc in Mathematics — Tampere University, 2021

Title: *Algebraic Fragments of First-Order Logic*

BSc in Mathematics — Tampere University, 2020

Skills

- Programming: Python, C++, C, C#, JavaScript, Qt, Angular
- ML & Data: NumPy, Pandas, Scikit-learn, PyTorch
- Tools: Git, Linux, AWS

Experience

Doctoral Researcher — Tampere University
Sep 2021 – Dec 2025 (expected)

- Research on explainable AI, mathematical logic, and computational complexity.
- Developed rule-based classifiers (rsclassifier library, published on PyPI).
- Published 13 peer-reviewed papers, including in *Journal of Artificial Intelligence Research*.

Software Engineer — Bitwise Oy
May – Aug 2021

- Developed for embedded Linux platforms using C++ and Qt.
- Contributed to frontend development with Angular for a web application.

Software Engineer — CADMATIC Oy
May 2019 – Sep 2020

- Co-developed a new 2D-platform for CADMATIC's drawing tools.
- Re-implemented legacy functionalities in a user-friendly and efficient way using C++.

Research Assistant — University of Helsinki / Tampere University
2018 – 2021

- Conducted research in mathematical logic and computational complexity.
- Developed online exercises in mathematical logic and graph theory (STACK environment).

Selected Projects

RSCLASSIFIER (PyPI): Machine learning library for learning interpretable rule set classifiers. Efficient, transparent, and user-friendly.
https://pypi.org/project/rsclassifier

Extended Cont–Bouchaud Model (GitHub): Dynamic agent-based financial market model incorporating stochastic volatility and jump diffusion.
https://github.com/ReijoJaakkola/Cont-Bouchand-model

Selected Publications

1. *Explainability via Short Formulas: the Case of Propositional Logic with Implementation*, Journal of Artificial Intelligence Research.
2. *Relating Description Complexity to Entropy*, Journal of Computer and System Sciences.
3. *Interpretable Classifiers for Tabular Data via Feature Selection and Discretization*, Workshop on Data meets Applied Ontologies in Explainable AI, 2024.
4. *Short Boolean Formulas as Explanations in Practice*, European Conference on Logics in Artificial Intelligence, 2023.

Awards

- Ernst Lindelöf Prize (2022) – Best Master's thesis in mathematics in Finland.
- Best Tech Solution – Unlocking ESG Insights (2023), Hanken Quantum Hackathon.
- First Prize - Amplifying Financial AI with Quantum Data Augmentation (2025), Hanken Quantum Hackathon.