

WOJCIECH RÓŻOWSKI

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PROFILE

Holds a PhD from University College London, recognized by a VeTSS Doctoral Dissertation Award, specializing in programming language semantics and formal software verification. Currently a Research Software Engineer at Lean FRO and a core contributor to the Lean 4 programming language and theorem prover. Former intern in the Automated Reasoning Group of Amazon Web Services.

EMPLOYMENT

Lean FRO, Research Software Engineer March 2025 – Present

- Contributed to the Lean 4 standard library and redesigned key components of the linter infrastructure. Currently the 19th most prolific contributor to [leanprover/lean4](#) by commit count.
- Designed and implemented the cbv tactic for call-by-value proof-producing evaluation of programs, with support for partial and symbolic computation.
- Designed and implemented support for coinductive predicates in Lean 4, including mutual coinduction and mixed induction-coinduction.

Amazon Web Services, Applied Scientist Intern June 2024 – Sep 2024

- Automated Reasoning Group (Identity and Access Management): reimplemented a core AWS authorization algorithm in Lean, proving stronger correctness properties than the existing Dafny implementation, and built a differential testing suite in Java.

Amazon Web Services, Applied Scientist Intern Aug 2023 – Nov 2023

- Automated Reasoning Group (Identity and Access Management): used the Lean theorem prover to reason about Dafny programs with non-local control flow. A related side project on (co)algebraic semantics of regular expressions was published on the [official Dafny blog](#) and at ICTAC 2024.

Goldman Sachs, Analyst Intern June 2021 – Sep 2021

- Site Reliability Engineering: migrated part of the infrastructure of a customer banking service from on-premises to the cloud, using Terraform and JavaScript.

ARM, Research Intern June 2020 – Sep 2020

- Software and Large Scale Systems Research Group: extended Kubernetes for edge-computing use cases, using Go and TypeScript.

University of Southampton, Research Intern March 2019 – Sep 2019

- Cyber Physical Systems Research Group: developed a proof of concept of a wireless, energy-harvester-powered sensor node for non-intrusive water-flow measurement, including a LoRaWAN stack in embedded C for the MSP430 microcontroller.

VISITING POSITIONS

Imperial College London, Academic Visitor Jan 2026 – Present

- Department of Mathematics, hosted by Prof. Kevin Buzzard.

University of Cambridge, Industrial Departmental Visitor Oct 2025 – Present

- Department of Computer Science and Technology, hosted by Prof. Tobias Grosser.

EDUCATION

PhD Computer Science, University College London 2021 – 2025

- Thesis: *Completeness Theorems for Behavioural Distances and Equivalences*. Advised by Prof. Alexandra Silva.
- Spent part of the PhD as a visiting researcher at Cornell University, Ithaca, USA, hosted by Prof. Alexandra Silva.
- VeTSS Doctoral Dissertation Award 2026 – Highly Commended*, awarded for the thesis at the VeTSS Annual Conference.

BSc Computer Science, University of Southampton 2018 – 2021

- First class honours, overall score 87% (95% in the undergraduate dissertation), supervised by Dr Julian Rathke.
- First Place (Undergraduate), Student Research Competition, ICFP 2021*, for the paper based on the undergraduate dissertation.

- *UK and Ireland regional ICPC winner*, 2019 – selected to represent the UK at the North-Western Europe Regional Competition.
- *ECS Excellence Scholarship*, 2018 – awarded to the top 3 first-year students in the School of Electronics and Computer Science.

PUBLICATIONS

Conferences

- [C1] **A Diagrammatic Axiomatisation of Behavioural Distance of Nondeterministic Processes** 2026
W. Różowski, R. Piedeleu, A. Silva, F. Zanasi
International Colloquium on Automata, Languages and Programming (ICALP), to appear
- [C2] **Quantitative Monoidal Algebra: Axiomatising Distance with String Diagrams** 2025
G. Lobbia, W. Różowski, R. Sarkis, F. Zanasi
International Symposium on Mathematical Foundations of Computer Science (MFCS)
- [C3] **Weighted GKAT: Completeness and Complexity** 2025
S. Van Koeveering, W. Różowski, A. Silva
International Colloquium on Automata, Languages and Programming (ICALP)
- [C4] **Well-Behaved (Co)algebraic Semantics of Regular Expressions in Dafny** 2024
S. Zetsche, W. Różowski
International Colloquium on Theoretical Aspects of Computing (ICTAC)
- [C5] **Behavioural Metrics: Compositionality of the Kantorovich Lifting and an Application to Up-To Techniques** 2024
K. D'Angelo, S. Gurke, J. M. Kirss, B. König, M. Najafi, W. Różowski, P. Wild
International Conference on Concurrency Theory (CONCUR)
- [C6] **A Complete Quantitative Axiomatisation of Behavioural Distance of Regular Expressions** 2024
W. Różowski
International Colloquium on Automata, Languages and Programming (ICALP)
- [C7] **A Completeness Theorem for Probabilistic Regular Expressions** 2024
W. Różowski, A. Silva
ACM/IEEE Symposium on Logic in Computer Science (LICS)
- [C8] **Probabilistic Guarded KAT Modulo Bisimilarity: Completeness and Complexity** 2023
W. Różowski, T. Kappé, D. Kozen, T. Schmid, A. Silva
International Colloquium on Automata, Languages and Programming (ICALP)
- [C9] **Processes Parametrised by an Algebraic Theory** 2022
T. Schmid, W. Różowski, A. Silva, J. Rot
International Colloquium on Automata, Languages and Programming (ICALP)

Workshops

- [W1] **Lean on Dafny: Exploring Interactive Verification of Dafny Programs in Lean** 2025
W. Różowski, G.-A. Jaloyan, S. McLaughlin
Dafny Workshop at the Symposium on Principles of Programming Languages (POPL)
- [W2] **Well-Behaved (Co)algebraic Semantics of Regular Expressions in Dafny** 2025
S. Zetsche, W. Różowski
Dafny Workshop at the Symposium on Principles of Programming Languages (POPL)
- [W3] **Formally verified derivation of an executable and terminating CEK machine from call-by-value $\lambda\hat{\rho}$ -calculus** 2021
W. Różowski
Student Research Competition at the International Conference on Functional Programming (ICFP)

Theses

- [M1] **Completeness Theorems for Behavioural Distances and Equivalences** 2025
W. Różowski
Doctoral thesis, University College London

- [M2] **Formally verified derivation of an executable and terminating CEK machine from call-by-value $\lambda\hat{\rho}$ -calculus** 2021
W. Różowski
Undergraduate dissertation, University of Southampton

TALKS

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|-------|---|---------------|
| [T1] | Lean Together, online | January 2026 |
| [T2] | South of England Regional Programming Language Seminar (S-REPLS) | October 2025 |
| [T3] | Computer Laboratory, University of Cambridge | October 2025 |
| [T4] | 4th Southern and Midlands Logic Seminar, University of Birmingham | December 2023 |
| [T5] | Barbara König's group, University of Duisburg-Essen | July 2023 |
| [T6] | Adjoint School Seminar (with J. M. Kirss and M. Najafi), online | April 2023 |
| [T7] | Programming Languages Discussion Group, Cornell University | February 2023 |
| [T8] | Workshop on Verification of Probabilistic Programs, Technion | August 2022 |
| [T9] | Midlands Graduate School in Foundations of Computer Science, University of Nottingham | April 2022 |
| [T10] | Programming Principles, Logic and Verification Seminar, UCL | January 2022 |

TEACHING

Teaching Assistant at University College London

- Theory of Computation (COMP0003) 2024
- Mathematics and Statistics (COMP0011) 2024
- Intermediate Mathematics for Computer Science (COMP0199) 2023
- Computability Theory (COMP0009) 2022
- Logic (COMP0009) 2022
- Mathematics and Statistics (COMP0011) 2022
- Logic and Database Theory (COMP0009) 2021

PROFESSIONAL SERVICE

Program Committee Member

- 1st International Workshop on Behavioural Metrics and Quantitative Logics (BMQL), Aarhus 2025

Artifact Evaluation

- European Joint Conferences on Theory and Practice of Software — ESOP / FASE / FoSSaCS (ETAPS) 2026

Subreviewer / External Reviewer

- International Colloquium on Automata, Languages and Programming (ICALP) 2025
- ACM/IEEE Symposium on Logic in Computer Science (LICS) 2025
- Mathematical Foundations of Programming Semantics (MFPS) 2025
- Symposium on Compositional Structures (SYCO 13) 2025
- Mathematical Foundations of Computer Science (MFCS) 2024
- Dynamic Logic: New Trends and Applications (DaLi) 2023