



Rodrigo Otoni

Curriculum Vitae

Last Update in January 2026

Personal Details

Full Name Rodrigo Benedito Otoni

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Profiles



Summary

Tenure-Track Assistant Professor at the University of Groningen, Netherlands, working on approaches for automated reasoning in the contexts of verification, synthesis, and certification

Work Experience

Assistant Professor

Sep. 2025 – Present

University of Groningen, Netherlands

Arrangement: with the Bernoulli Institute of the Faculty of Science and Engineering, on a tenure-track

Postdoctoral Researcher

Nov. 2023 – Aug. 2025

Università della Svizzera italiana, Switzerland

Arrangement: 50% with Prof. Patrick Eugster's group and 50% with Prof. Laura Pozzi's group

Research Engineer

Sep. 2021 – Dec. 2022

Informal Systems, Switzerland

Arrangement: 6 months as a full-time intern followed by 10 months as a part-time contractor, during the PhD, working with Dr. Igor Konnov's group on SMT-based symbolic model checking for TLA⁺

Education

PhD in Informatics

Dec. 2018 – Oct. 2023

Università della Svizzera italiana, Switzerland

Dissertation: Automated Verification of Blockchain Technologies with Correctness Guarantees

Advisors: Prof. Patrick Eugster and Prof. Natasha Sharygina

External Panel: Prof. Arie Gurfinkel (U. of Waterloo) and Dr. Shuvendu Lahiri (Microsoft Research)

Additional Information: dissertation selected as the best of 2023 by the Faculty of Informatics

MSc in Computer Science

Aug. 2016 – Jul. 2018

Universidade Federal de Pernambuco, Brazil

Dissertation: A Strategy for Local Analysis of Determinism

Advisors: Prof. Augusto Sampaio and Prof. Ana Cavalcanti

BSc in Computer Science

Feb. 2012 – Jun. 2016

Universidade Federal de Sergipe, Brazil

Final Project: A Verification Strategy for Control Systems Implementations in Safety-Critical Java

Advisors: Prof. Ana Cavalcanti and Prof. Leila Silva

Additional Information: visiting student at the University of York, UK, for one year (2014/15)

Languages

- Portuguese: native speaker (Brazilian citizen)
- English: fluent (Toefl iBT 113/120)
- Italian: basic (CEFR A2)

Funding

- Postdoc.Mobility fellowship grant from the Swiss National Science Foundation
Project: Unbounded and Certified Model Checking for TLA⁺
Duration: Sep. 2025 – Aug. 2027
Role: Principal Investigator
Amount: CHF 108,600 (forfeited due to becoming an assistant professor in Sep. 2025)
- Seed grant from the Hasler Foundation
Project: Automated Probabilistic Reasoning for Quantum Networks
Duration: Dec. 2024 – Nov. 2025
Role: Principal Investigator
Amount: CHF 49,740
- Science without Borders scholarship from the Brazilian Ministry of Science and Technology
Arrangement: visiting student at the University of York, UK, for one year
Duration: Oct. 2014 – Sep. 2015
Amount: GBP 23,440

Awards

- EASST Best Paper Award
European Association of Software Science and Technology (EASST) best paper award at the 28th European Joint Conferences on Theory and Practice of Software (ETAPS'25)
- TACAS Distinguished Paper Award
Distinguished paper award at the 31st International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS'25)
- GI Dissertation Prize nominee
Nominated by the Università della Svizzera italiana, Switzerland, to the 2023 GI Dissertation Prize (joint PhD dissertation prize of the German, Austrian, and Swiss informatics societies)
- iFM Best Paper Award candidate
One of three candidates selected for the best paper award at the 18th International Conference on integrated Formal Methods (iFM'23)

Teaching

Tutor

University of Groningen, Netherlands

- Introduction to Computing Science (BSc course)
Editions: 2025/26 (42 students)

Teaching Assistant

Università della Svizzera italiana, Switzerland

- Distributed Systems (MSc course)
Editions: 2022/23 (34 students), 2020/21 (8 students), 2019/20 (13 students)
- Software Atelier 2: Human-Computer Interaction (BSc course)
Editions: 2020/21 (56 students), 2019/20 (40 students), 2018/19 (42 students)

- Data Management (BSc course)
Editions: 2022/23 (72 students), 2021/22 (57 students)

Universidade Federal de Pernambuco, Brazil

- Systems Project and Analysis (BSc course)
Editions: 2016 (31 students)

Supervision

PhD Students

- Morteza Rezaalipour (co-supervised with Prof. Laura Pozzi)
Dissertation: Approximate Computing via Effective SMT-based Logic Synthesis
Institution: Università della Svizzera italiana, Switzerland
Defence date: 6th Jun. 2025

MSc and BSc Students

- Francesco Costa (co-supervised with Prof. Laura Pozzi)
MSc Thesis: An SMT-based Approach to the Protein-Ligand Docking Problem
Institution: Università della Svizzera italiana, Switzerland
Defence date: 26th Jun. 2025
- Manuele Jelmini (co-supervised with Prof. Laura Pozzi)
BSc Thesis: Scalable Synthesis of Approximate Circuits via Novel SMT Bit-Vectors Encoding
Institution: Università della Svizzera italiana, Switzerland
Defence date: 17th Jun. 2024
- Fedor Gromov (co-supervised with Prof. Andrey Ustjuzhanin)
BSc Thesis: Embedding SMT Proofs into CHC Solving
Institution: Constructor University, Germany
Defence date: 19th Jun. 2023

Community Service

- Reviewer for the following journals:
 - ACM Transactions on Privacy and Security (TOPS)
 - ACM Transactions on Software Engineering and Methodology (TOSEM)
 - International Journal on Software Tools for Technology Transfer (STTT)
 - Science of Computer Programming (SCP)
- Program committee member for the following events:
 - Int. Conf. on Formal Techniques for Distributed Objects, Components, and Sys. (FORTE)
Editions: 2026
 - Student Forum of the Int. Conf. on Formal Methods in Computer-Aided Design (FMCAD)
Editions: 2024
- Sub-reviewer for the following events:
 - International Conference on Formal Methods in Computer-Aided Design (FMCAD)
Editions: 2025, 2023, 2022, 2021, 2020

- Int. Conf. on Tools and Algs. for the Construction and Analysis of Systems (TACAS)
Editions: 2025, 2023, 2022, 2021, 2020
- International Conference on Computer-Aided Verification (CAV)
Editions: 2024, 2022, 2021, 2020
- Int. Conf. on Logic for Programming, Artificial Intelligence and Reasoning (LPAR)
Editions: 2024, 2020
- International Conference on Theory and Applications of Satisfiability Testing (SAT)
Editions: 2024, 2020
- International Symposium on Formal Methods (FM)
Editions: 2024
- International Symposium on Model Checking Software (SPIN)
Editions: 2023
- Int. Conf. on Object-Oriented Programming Systems, Languages, and Apps. (OOPSLA)
Editions: 2022
- International Conference on Verified Software: Theories, Tools, and Experiments (VSTTE)
Editions: 2021
- Workshop on Models for Formal Analysis of Real Systems (MARS)
Editions: 2020
- Int. Conf. on Formal Techniques for Distributed Objects, Components, and Sys. (FORTE)
Editions: 2019

Publications

Journal Papers

5. *Approximate Logic Synthesis via Iterative SMT-based Subcircuit Rewriting*
M.Rezaalipour, M.Biasion, F.Costa, C.Tirelli, L.Ferretti, **R.Otoni**, G.Constantinides, and L.Pozzi
IEEE Trans. on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Early Access
4. *A Language for Quantifying Quantum Network Behavior*
A. Buckley, P. Chuprikov, **R. Otoni**, R. Soulé, R. Rand, and P. Eugster
Proceedings of the ACM on Programming Languages (PACMPL), 9(OOPSLA2), 2025
3. *Validation of CHC Satisfiability with ATHENA*
R. Otoni, M. Blichla, P. Eugster, and N. Sharygina
Formal Aspects of Computing (FAC), 37(4), 2025
2. *An Algebraic Language for Specifying Quantum Networks*
A. Buckley, P. Chuprikov, **R. Otoni**, R. Soulé, R. Rand, and P. Eugster
Proceedings of the ACM on Programming Languages (PACMPL), 8(PLDI), 2024
1. *A Solicitous Approach to Smart Contract Verification*
R. Otoni, M. Marescotti, L. Alt, P. Eugster, A. Hyvärinen, and N. Sharygina
ACM Transactions on Privacy and Security (TOPS), 26(2), 2023

Conference Papers

7. *Unsatisfiability Proofs for Horn Solving*
R. Otoni, M. Blichla, M. Rivera, P. Eugster, J. Kofron, and N. Sharygina
31st Int. Conf. on Tools and Algs. for the Construction and Analysis of Systems (TACAS'25)
Distinguished Paper Award 🏆 and EASST Best Paper Award 🏆

6. *Monomorphism-based CGRA Mapping via Space and Time Decoupling*
C. Tirelli, **R. Otoni**, and L. Pozzi
28th Design, Automation and Test in Europe Conference (DATE'25)
5. *CHC Model Validation with Proof Guarantees*
R. Otoni, M. Blicha, P. Eugster, and N. Sharygina
18th International Conference on integrated Formal Methods (iFM'23)
Best Paper Award candidate 🏆
4. *Symbolic Model Checking for TLA⁺ Made Faster*
R. Otoni, I. Konnov, J. Kukovec, P. Eugster, and N. Sharygina
29th Int. Conf. on Tools and Algs. for the Construction and Analysis of Systems (TACAS'23)
3. *Theory-Specific Proof Steps Witnessing Correctness of SMT Executions*
R. Otoni, M. Blicha, P. Eugster, A. Hyvärinen, and N. Sharygina
58th ACM/IEEE Design Automation Conference (DAC'21)
2. *Accurate Smart Contract Verification Through Direct Modelling*
M. Marescotti, **R. Otoni**, L. Alt, P. Eugster, A. Hyvärinen, and N. Sharygina
9th International Symposium on Leveraging Applications of Formal Methods (ISoLA'20)
1. *Local Analysis of Determinism for CSP*
R. Otoni, A. Cavalcanti, and A. Sampaio
20th Brazilian Symposium on Formal Methods (SBMF'17)

Other Papers

2. *Automatisierte Garantierte Blockchain-Technologie Verifizierung*
R. Otoni
GI Ausgezeichnete Informatikdissertationen 2023 (Band 24), 2024
1. *Towards an Algebraic Specification of Quantum Networks*
A. Buckley, P. Chuprikov, **R. Otoni**, R. Rand, R. Soulé, and P. Eugster
1st Workshop on Quantum Networks and Distributed Quantum Computing (QuNet'23)