



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)

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

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)

Community Service

- Organiser for the following events:
 - Formal Methods track of NWO ICT.OPEN 2026
Context: conference on ICT research organised by the Dutch Research Council (NWO)
Role: track co-chair (together with Dr. Valentina Castiglioni)
- Invited 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. Blicha, M. Rivera, P. Eugster, J. Kofroň, 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)