



# Rodrigo Otoni

*Curriculum Vitae*  
Last Update in July 2025

## Personal Details

Full Name Rodrigo Benedito Otoni

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Profiles



## Summary

Postdoctoral researcher at the Università della Svizzera italiana, Switzerland, working on approaches for automated reasoning in the contexts of verification, synthesis, and certification. Joining the University of Groningen, Netherlands, as an assistant professor in September 2025.

## Work Experience

### Assistant Professor

Sep. 2025 Onwards

*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<sup>+</sup>

## 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

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- Postdoc.Mobility fellowship grant from the Swiss National Science Foundation  
Project: Unbounded and Certified Model Checking for TLA<sup>+</sup>  
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

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- 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

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### 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)

### Teaching Assistant

*Universidade Federal de Pernambuco, Brazil*

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

## Supervision

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### 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

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- 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)
- Program committee member for the following events:
  - 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**

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### **Journal Papers**

3. *Validation of CHC Satisfiability with ATHENA*  
**R. Otoni**, M. Blich, P. Eugster, and N. Sharygina  
Formal Aspects of Computing (FAC), Just Accepted, 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. Blich, 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. Blich, P. Eugster, and N. Sharygina  
18th International Conference on integrated Formal Methods (iFM'23)  
Best Paper Award candidate 🏆
4. *Symbolic Model Checking for TLA<sup>+</sup> 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. Blich, 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)