



# Rodrigo Otoni

Curriculum Vitae  
Last Update in January 2026

## Personal Details

Full Name Rodrigo Benedito Otoni

E-Mail r.b.otoni@rug.nl

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<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

---

- 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

---

- 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, **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. Blichá, 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. Blichá, 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. Blichá, 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. Blichá, 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)