Rafael Ferreira Toledo |

Waterloo, ON

✉ rftoledo@uwaterloo.ca

Education

Ph.D. Candidate in Computer Science **Expected Spring 2023**
University of Waterloo *Waterloo, Canada*
Waterloo Formal Methods Research Group

M.S. in Systems and Computing **Jul 2018**
Universidade Federal do Rio Grande do Norte *Natal, Brazil*
Formal Methods and Languages Research Laboratory

B.E. in Control and Automation **Jun 2016**
Instituto Federal Fluminense *Campos dos Goytacazes, Brazil*
Sandwich-Graduation with associated courses at University of Ottawa, Canada.

Summary of Qualifications

○ Capable of designing and executing research methodologies and experiments for solving complex problems

○ Ability to communicate research findings to expert audiences in presentations and academic writing

○ C++ proficiency mostly applied to the development of research projects and the assessment of students' learning during Object-Oriented Software Development courses

Research Experience

Ph.D. Research Assistant **Sep 2018 – Present**
University of Waterloo
○ Design new methods and tools to use interactive graphical representation of the source code for supporting software maintenance tasks performed by engineers

MSc Research Assistant **Jul 2016 – Jul 2018**
Universidade Federal do Rio Grande do Norte
○ Proposed algorithms to enable the search of candidate replacements for failed units of a self-healing web service composition

Undergraduate Research Assistant **Apr 2014 – Nov 2015**
Instituto Federal Fluminense
○ Contributed to the compilation of a set of tools and practices to study the application of finite state machines and test-driven development for embedded systems modelling and verification

Undergraduate Researcher Assistant **May – Aug 2013**
University of Ottawa
○ Contributed to the development of a user interface for monitoring the proximity detection provided by a robotic instrumented compliant wrist

Additional Experience

Teaching Assistant   **Sept 2018 – present**
University of Waterloo
- Assess student learning through assignment evaluation during the term
- Collaborate to the development of marking rubrics to evaluate student learning
- Clearly communicate complex information in giving feedback to students
- Facilitated discussion on specification, planning, and development of capstone projects with students

Languages

- **Portuguese**: Native Speaker
- **French**: Elementary Proficiency
- **English**: Bilingual Proficiency

Publications

- **R. Toledo**, U. Da Costa, M. Musicante, and G. Vargas-Solar. "Self-healing of web service compositions: a specification rewriting approach." International Journal of Web and Grid Services 16, no. 2 (2020): 172-199.
- **R. Toledo**. A recovery mechanism based on a rewriting process for web service compositions. 2018. 83f. Thesis (MSc. in Systems and Computing) - Centro de Ciências Exatas e da Terra, Universidade Federal do Rio Grande do Norte, Natal, 2018.
- R. Carvalho, H. Silva, **R. Toledo**, and M. Azevedo. "TDD for Embedded Systems: A Basic Approach and Toolset." arXiv preprint arXiv:1507.07969 (2015).
- P. Laferrière, P. Payeur, **R. Toledo**, "Instrumented Compliant Wrist for Dexterous Robotic Interaction", Proceedings of the IEEE International Symposium on Robotic and Sensors Environments (ROSE 2014), pp. 66-71, Timisoara, Romania, 16-18 Oct. 2014.
- R. Fareh, P. Payeur, D. Nakhaeinia, R. Macknojia, A. Chavez-Aragon, A.-M. Cretu, P. Lafferière, R. Laganière, **R. Toledo**, "An Integrated Vision-Guided Robotic System for Rapid Vehicle Inspection", Proceedings of the IEEE International Systems Conference (SYSCON 2014), pp. 446-451, Ottawa, ON, 31 Mar. - 3 Apr. 2014 (Best Paper Award)