

Bruno Jardim

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github.com/StrillX

Education

- Universidade do Minho**, BS in Computer Science Sept 2019 – July 2022
- **Coursework:** Computational Theory, Complexity Theory, Algorithms and Data structures, Algorithm Correction, SAT solving
 - **Final Project:** A generic tool for verifying safety properties in a First Order Transition Systems
- Universidade do Minho**, MS in Formal Methods and Cryptography Sept 2022 – Oct 2024 (est.)
Informatics Engineering (Master)
- **Coursework (Formal Methods):** Algorithm and Program Verification, Distributed Algorithms Verification, Cyber-Physical Programming, Program Design By Calculation
 - **Coursework (Cryptography):** Cryptographic Structures, Post-Quantum Cryptography, Vulnerability Detection/Exploitation, Linux Security, Security Engineering
 - **Dissertation:** Analyzing quantum learning protocols with ZX

Experience

- Assistant Researcher**, HASLab/INESCTEC – Universidade do Minho, Braga, PT August 2024 – (ongoing)
Research Grant
- Full-stack Developer**, Micro-net – Braga, PT June 2023 – Dec 2023
Part-time
- Developed a hotel self check-in solution
 - Ported a billing/management desktop application to a web application
- Data Analyst**, Checkmarx – Braga, PT July 2022 – Sept 2022
Summer Internship

Publications

- I/O Behaviour Analysis on Android Targeted Ransomware** Jan 2024
Beatriz Oliveira, *Bruno Jardim*, Bruno Pereira
Unpublished
- Reconfiguring staggered quantum walks with ZX** November 2024
Bruno Jardim, Jaime Santos, Luís S. Barbosa
Publised in the ReactS'24 Workshop

Projects

- A generic tool for verifying safety properties in a First Order Transition Systems** github.com/Alef-Keuffer/FOTS-Prover
- Implemented 4 different property verification techniques, those being: Bounded Model Checking, K-induction, Interpolant Model Checking and Property Directed Reachability. These techniques can be then used to verify safety properties on First Order Transition Systems
 - Tools Used: Python, PySMT
- Cryptographic Structures** github.com/StrillX/EC
- Diverse implementations of different cryptographic protocols, both pre and post quatum.
 - Tools Used: Python, Sagemath

Additional Experience

Mentor at Coderdojo (2022-2023): Taught children between the ages of 7 and 17 how to program.

Organizer of JOIN22 & JOIN23: An event with pertinent topics in the current landscape of CS and Software Engineering, sponsored by a diverse set of companies in those respective fields.

Technologies & Other

Concepts & Tools: ZX-calculus and variants (ZH, ZW, ZXW, ...), Quantum Computing, Measurement Based Quantum Computing, Quantum Machine Learning, TLA+, Frama-C, CBMC, Alloy

Languages: Python, C++, C, Java, SQL, JavaScript, NextJS, Haskell, Erlang

Software: Linux, Git, Bash