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

Data Analyst, Checkmarx – Braga, PT — July 2022 – Sept 2022
Summer Internship

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

Publications

I/O Behaviour Analysis on Android Targeted Ransomware — Jan 2024
Beatriz Oliveira, ***Bruno Jardim***, Bruno Pereira
Unpublished

Revisiting staggered quantum walks with ZX — June 2024
Bruno Jardim, Jaime Santos, Luís S. Barbosa
Submitted to SEFM'24

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, ZHW, ...), 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