Miguel Rodrigues

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EDUCATION

University of Porto, Faculty of Engineering Porto, Portugal
BSc in Informatics Engineering *Sep 2019 — Jul 2022*

University of Porto, Faculty of Engineering Porto, Portugal
MSc in Informatics Engineering *Sep 2022 — Sep 2024*

Brno University of Technology, Faculty of Information Technology Brno, Czech Republic
MSc in Information Technology, Erasmus+ Programme *Sep 2023 — Feb 2024*

- Relevant Coursework: Data Structures and Algorithms, Large Scale Distributed Systems, Operating Systems, Compilers, Computer Networks, Principles of Software Engineering, Computer Architecture, Parallel Computing, Digital Signal Processing, Computer Vision.

WORK EXPERIENCE

Large Scale Distributed Systems Teaching Assistant Sep 2024 — Present
University of Porto, Faculty of Engineering *Porto, Portugal*

- Provide support for students, grade assignments, and help with course logistics.

PROJECTS

Author, "State-based CRDT Infrastructure, Master Thesis" (github.com/mbrdg/xp) Sep 2023 — Jul 2024

Supervisor: Prof. Carlos Baquero

- Development of two new synchronization approaches for state-based CRDTs based on rsync.
- Wrote a small library of CRDTs and a synchronization simulator in Rust.
- Currently writing an academic paper on the work of this thesis.

Contributor, Decentralized Timeline Service (github.com/mbrdg/timeline) Nov 2022 — Dec 2022

- Development of a decentralized P2P timeline service (similar to X or Mastodon) completely written in TypeScript.
- Users were able to post from their local machines, even offline. Peers' discovery was done by libp2p which allowed to forward the contents from users' machines to their followers.

Contributor, Reliable Pub-Sub Service (github.com/mbrdg/reliable-pubsub) Oct 2022 — Nov 2022

- Development of a protocol for reliable Pub-Sub service with exactly-once delivery semantics.
- All service's components, publishers, broker, and subscribers, were written in Rust while ZeroMQ was used as the message carrier between them.

EXTRACURRICULAR ACTIVITIES

Porto Unikraft Hackathon May 2023

- Contributed to Unikraft's open-source projects with bug fixes and improvements on the compilation pipeline of several unikernel binary images.

Informatics.OnBoard Sep 2020 — Jul 2023

- Mentored younger informatics students at the Faculty of Engineering providing guidance and advice throughout their academic journey.

SKILLS

- **Programming Languages**: Rust, Python, C, C++, Java, Golang, JavaScript, TypeScript, PHP, Lua
- **Technologies**: Linux, Git, Docker, PostgreSQL, SQLite, ZeroMQ, Node.JS, Bun, Laravel, nginx, Redis
- **Languages**: Portuguese (native), English (fluent)