Guarda, Portugal
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Guilherme Lopes

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Master of Science in Computer Science, with a strong focus on blockchain and distributed systems. Experienced in developing and testing blockchain consensus protocols, highlighted by a master's thesis centered on creating a robust testing framework for these kind of systems. Actively engaged in open-source projects, showcasing versatility across multiple programming languages and technologies on GitHub.

Work Experience

Internship   **June of 2023 - September of 2023**
Nethermind

- Contributed to Starknet.go

Junior Researcher   **September of 2022 - September of 2023**
Release Lab   *Universtiy of Beira Interior*

- Worked on Master's thesis.
- Received Research Grant.

Freelancer Software Developer   **October of 2019**
Multiple Companies

- Developed bespoke management tools, bots, and server/database solutions for diverse clients, enhancing their business operations and customer engagement.
- Provided expert consultancy services, translating client needs into actionable software development plans.
- Managed technical projects from concept to delivery, ensuring client satisfaction and fostering long-term business relationships.

Relevant Projects

Research on Blockchain Consensus Protocols   **2023**
Master's Thesis

- Blockchain, Distirbuted Systems, Consensus Algorithms, Tezos
- Tezos, OCaml
- Developed innovative tools for creating and testing blockchain protocols on the Tezos platform, including a Bootstrapper for protocol creation and a Live Testing Tool for real-time performance evaluation. Successfully implemented Proof of Work and Proof of Authority protocols, contributing valuable insights and open-source resources to the blockchain technology field.

Pascal Compiler   **2022**
Compiler and Language Design Class

- Language Design, Parsing, Lexing, Assembly code generation, Compiler
- OCaml, OCamllex, OCaml Menhir, X86_ Assembly
- Developed a implementation of a Pascal Compiler that generates x86_64 assembly code.

Research on Distributed Algorithms   **2021**
Bachelor's Thesis

- Distributed Systems, Distributed Data Structures, Mutual Exclusion, Concurrency, Peer-to-Peer (P2P)
- Go, Javascript, Docker
- Implemented the Arrow Distributed Directory Protocol node in Go, featuring a live visualization tool for real-time network state and access control monitoring in distributed systems.

Education

Master of Science (MSc) in Computer Science   **2021 - 2023**
Blockchain, Consensus Protocols, Compilers
University of Beira Interior (Top 3 in class)

Bachelor of Science in Computer Science   **2018 - 2021**
Distributed Systems (Best in Class)
University of Beira Interior

Skills

Programming	Go, OCaml, Rust, Python, Solidity, C, Java, JavaScript, Bash, SQL, Assembly
Technical Skills	Linux, Git, Smart Contracts, Web Development, Data Structures and Algorithms, CI/CD, Containerization, Relational and Non-Relational Databases, RESTful APIs, Debugging and Troubleshooting, Web Development
Soft Skills	Communication and interpersonal skills, Problem-solving and critical thinking, Teamwork
Languages	Portuguese (native speaker), English (fluent), Spanish (beginner)

Interests

Technical Interests
Distributed Systems, Consensus Algorithms, Blockchains, Smart Contracts, Cryptography, Functional Programming, Compilers and Language Design, Computer Logic and Theory, Security of Systems and Software, Formal Language Verification, Operating Systems, Computer Security

Past Activities
Music Formation, Saxophone Classes (5 years)
Federated in Basketball (3 years)

Other Hobbies/Interests
Fishing, Beekeeping, Farming, Cycling

Awards and Events

Solana Breakpoint Conferences 2022 and 2023   **November 2023**
Received Student Fellowship Ticket
Lisbon, Portugal/Amesterdam, Netherlands

ICPC SWERC 2023   **February 2023**
South Eastern Europe Programming Competition
Politecnico Milano, Milan, Italy

MIUP 2022   **October 2022**
Portuguese National Programming Competition
Coimbra University, Coimbra, Portugal

Portfolio and Extras

Github Portfolio	Showcasing a diverse range of projects and open-source contributions, spanning blockchain protocols, distributed systems, and more. Visit: github.com/Gabulhas
Personal Blog	Offering in-depth discussions, perspectives and tutorials on blockchain technology, Web3 and more. Explore at: https://jamusti.co