

Guarda, Portugal
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Guilherme Lopes

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MSc candidate in Computer Science with specialization in blockchain technologies and consensus protocols. Practical experience with Nethermind and as a freelancer, plus active contributions to open-source projects. Proficient in a wide range of programming languages and technologies including Go, Rust, and Python, with a passion for functional programming and distributed systems.

Work Experience

Internship

June of 2023 - September of 2023

Nethermind

- Worked on Starknet.go

Junior Researcher

September of 2022 - September of 2023

Release Lab

Universtiy of Beira Interior

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

Freelancer Software Developer

October of 2019

Multiple Companies

- Developed management tools, bots, managed servers and databases on request for multiple companies and customers.

Relevant Projects

Research on Blockchain Consensus Algorithms

2023

Master's Thesis

- Blockchain, Distirbuted Systems, Consensus Algorithms, Tezos, Functional Programming
- Tezos Node, OCaml language
- Developed a Protocol Live Testing and Benchmarking tool. Developed multiple protocols.

Pascal Compiler

2022

Compiler and Language Design Class

- Language Design, Parsing, Lexing, Assembly code generation
- OCaml language, 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 Exclussiion, Concurrency
- Go Language
- Studied the original "Arrow Distributed Directory Protocol" and developed a implementation of a node in Go, to test the algorithm in a distributed setting. Implemented a visualization of the state of the network (and the distributed data structures), and Ownership/Requesting/Arrival events history.

Education

Master of Science in Computer Science

2021 - 2023

University of Beira Interior (Top 3 in class)

Bachelor of Science in Computer Science

2018 - 2021

University of Beira Interior

Skills

Programming

Go, OCaml, Rust, Python, C, Java, JavaScript, Bash, SQL, HTML, CSS, X86_64 ASM

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

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, 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

Extras

Solana Breakpoint Conference 2023

November 2023

Received Student Fellowship Ticket

Amsterdam, Netherlands

ICPC SWERC 2023

February 2023

South Eastern Europe Programming Competition

Politecnico Milano, Milan, Italy

Solana Breakpoint Conference 2022

November 2022

Received Student Fellowship Ticket

Lisbon, Portugal

MIUP 2022

October 2022

National Programming Competition

Coimbra University, Coimbra, Portugal