Leonardo Mendes Santos

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EDUCATION

University of Beira Interior — Covilhã, Portugal
BSc in Computer Science and Engineering; CGPA: 3.88 (17/20) — *Sep 2021 - Jun 2024 (Expected)*

EXPERIENCE

Internship: Learn OCaml Platform Maintainer — Remote
OCaml Foundation — *Jul 2022 - Sep 2022*

- Designed and translated 20 new exercises for the platform
- Created and revised the black and white box tests used for the grading of said exercises, which accounted for a **500% increase** in the correctness of the solutions

PROJECTS

Strange Cipher — Covilhã, Portugal
Personal Project — *Jan 2024 - Feb 2024*

Description: An encryption/decryption algorithm based on Lorenz's Strange Attractor, with WebSockets for communication.

- Employs synchronized chaotic systems (Lorenz Attractors) on both the server and client to create a secure stream cipher.
- Uses X25519 elliptic curve Diffie-Hellman for key generation and agreement on system parameters.
- Achieves encryption and decryption within a fast processing time frame of **30-55ms.**
- **Keywords**: Rust, Cybersecurity, Cryptography, WebSockets, Chaos Theory, Diffie-Hellman.

zaml — Covilhã, Portugal
Personal Project — *Jul 2023 - Sep 2023*

Description: A type-inferred, statically typed functional programming language inspired by OCaml and Lambda calculus.

- Let expressions, functions, conditionals, lambdas, partial application, lists, and more.
- Features an interactive REPL, a file interpreter, and descriptive syntax and type errors.
- Achieved **95% test coverage**, ensuring robustness in parsing, typing, and evaluation.
- **Keywords**: OCaml, Type Systems, Interpreters, Programming Language Design, Parsers, Lexers.

PROGRAMMING SKILLS

- **Languages**: OCaml, Rust, Python, Java, C, Dart, Elm, HTML, CSS, JS   **Technologies**: Docker, Git, Linux

SOFT SKILLS

- **Teamwork and Communication**: Acquired by working in team projects, internships and contests.
- **Problem Solving & Critical Thinking**: Acquired by practicing and competing in programming contests.

CERTIFICATES

- **MIUP 2023 (Portuguese ICPC) Contestant**, ICPC — *Oct 2023*, Coimbra, Portugal
- **SWERC 2023 Contestant**, ICPC — *Feb 2023*, Milan, Italy
- **MIUP 2022 (Portuguese ICPC) Contestant**, ICPC — *Oct 2022*, Coimbra, Portugal

OSS CONTRIBUTIONS

LaTeX integration for MDX — Remote
Real World OCaml — *Jul 2023*

- Added LaTeX support to *mdx*, a tool that allows execution of code blocks inside Markdown and mli/mld documentation to help keeping them up to date.
- Added new parsing and lexing rules, and new unit tests covering **100%** of the previous testing suite for Markdown.
- **Keywords**: OCaml, Parsers, Lexers, Unit Tests, FOSS.