Martim Vicente

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Education

Instituto Superior Técnico, ULisboa — Lisbon, Portugal
Bachelor of Science in Computer Science, AVG: 17/20 — *Sep. 2024 – Jun 2027*

Experience

Embedded Software Engineer, Rocket Experiment Division — Sep. 2025 – Present
Instituto Superior Técnico — *Lisbon, PT*

- Engineered C-based control software for a hybrid rocket filling station, replacing hazardous manual procedures with a 100m+ remote-controlled system, implementing a robust state machine, hardware watchdogs on a STM32, and SD-card data logging.
- Developing a secure internal wiki using Docusaurus, Cloudflare Pages and Cloudflare Zero Trust, automating documentation via Doxygen2md to centralize mission-critical schematics, mitigate legacy errors and preserve legacy knowledge.

Software Engineer, Técnico Investment Club — Sep 2025 – Present
Instituto Superior Técnico — *Lisbon, PT*

- Architected a high-frequency trading engine in C++ optimized for resource-constrained hardware, with the goal of achieving sub-50ms tick-to-trade latency through custom lock-free data structures and a decoupled "Trading Pod" architecture that ensures strategy-level isolation.
- Developing the Trading Pod part of the trading engine, implementing an SPMC lock-free ring buffer to orchestrate market data consumption, strategy execution, and risk management and order execution via fire-and-forget.
- Developing a monitoring sidecar in Go to ingest real-time telemetry (tick-to-trade, lock-free buffer saturation), automating daily health and portfolio reporting through Discord webhook integrations.
- Optimized data visualization by migrating JavaScript calculations from the client to the server and implementing LTTB downsampling, reducing webpage load times by 75% while maintaining fidelity for 10k+ data points.

Projects

Library Management System | *Java, OOP, Design Patterns* — School Project, OOP

- Designed a system handling entity relationships (Works, Users, Loans) with a focus on extensibility (Open-Closed Principle)
- Implemented business logic for a dynamic user reputation system that automatically adjusts borrowing privileges and calculates fines.

Skills

Languages: C, C++, Go, Python, Java, JavaScript, SQL
Tools: Git, Docker, Embedded Systems (STM32), Linux
Linguistic Proficiencies: Portuguese (Native), English (Professional)