Bernardo Pereira *Computer Science & Engineering Student*

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I'm a Computer Science and Engineering student specializing in distributed systems and cybersecurity. I enjoy working on reliable software where performance, correctness, and real-world impact are tightly connected.

Education

Instituto Superior Técnico 09/2025 – 07/2027
MSc, Computer Science and Engineering
Current Grade: 17/20

Instituto Superior de Engenharia de Lisboa 09/2022 – 07/2025
Bsc, Computer Science and Engineering
Grade: 17/20

Professional Experience

Sky 07/2025 – 08/2025
Apprentice Developer – xTV Devices & Tech
- Developed a Deeplink Testing Tool using **Lightning.js**, enabling multi-device deeplink validation across ***Peacock***, ***SkyShowtime***, ***NOW***, and ***Showmax***; reduced manual testing time by ~**90%**.
- Gained practical front-end experience, adhering to **agile methodologies** and **version control** best practices.

Projects

HtmlFlow 06/2025 – Present
Java/Kotlin DSL for type-safe HTML
- Maintainer of **HtmlFlow**, a high-performance Java/Kotlin DSL for compile-time safe HTML 5.2 generation.
- Implemented **hot-reload** for views, enabling live UI updates without server restarts via hot-swapping.
- Designed the **ViewFactory API** and **automatic view discovery loader** to simplify framework integration.
- Added **http4k support** and improved reactive/coroutine-based rendering.
- Upgraded CI/CD and code quality tooling using **GitHub Actions and SonarCloud**.

Dida Meetings 09/2025 – 10/2025
Distributed meeting management system
- Implemented a fault-tolerant distributed meeting manager using **Paxos** and **Vertical Paxos** for dynamic reconfiguration; built server, client, and admin console communicating over **gRPC**/**Protobuf**.
- Implemented **Multi-Paxos** per-log-slot with leader rotation schedules, enabling reconfiguration and strong ordering for open/add/close operations.

Non-Blocking Progressive Server-Side Rendering Benchmark 01/2025 – 07/2025
Final Project – BSc in Computer Science and Engineering (20/20)
- Designed and executed benchmarks comparing **Spring MVC**, **WebFlux**, and **Quarkus** across **blocking**, **reactive**, **coroutine**, and **virtual-thread** execution models; measured latency, throughput, and resource usage.
- Demonstrated virtual threads provide scalable non-blocking rendering with blocking template engines, achieving comparable throughput to other non-blocking approaches.
- Wrote and published an article to MDPI software journal with findings.

Skills

Languages
Kotlin, Java, Typescript, Javascript, Go.

Frontend
HTML, CSS, React, Lightning.js Material-UI, Tailwind, Jetpack Compose, Android.

Backend
Spring MVC & WebFlux, RxJava, Quarkus, Express.js, Nginx.

Databases & Cloud
PostgreSQL, MongoDB, ElasticSearch, Firestore, Google Cloud.

Awards

Merit Scholarship Next Level@IPL - 2022/2023 & 2024/2025

Languages

Portuguese • **English** — C1