Pedro Castro

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PROFILE

Informatics and Computing B.E. student with a strong interest in problem-solving and algorithm design. Passionate about learning new technologies and contributing to projects. Open-source supporter.

EDUCATION

Faculty of Engineering of the University of Porto   Porto, Portugal
Bachelor in Informatics and Computing Engineering   *Sep 2022–Jul 2026*
Relevant Coursework: Algorithms and Data Structures, Databases, Web Development, Operating Systems, Software Engineering, Distributed Systems, Computer Security, Compilers, Discrete Mathematics, Artificial Intelligence.

EXPERIENCE

Faculty of Engineering of the University of Porto   Porto, Portugal
Teaching Assistant   *Feb 2026–Present*
- Teaching assistant for the Computer Laboratory class (C drivers implementation in MINIX), supporting 40+ students.

NIAEFEUP   Porto, Portugal
Project Manager   *Aug 2025–Present*
- Led the development of the Association's website, managing a team of 15+ people.

Member   *Oct 2024–Present*
- Developer of a mobile app in Flutter made for students to help them organize their academic life and schedule.
- Developer of the College Student's Association website using Svelte, Tailwind CSS, Kotlin and Spring Boot.

Kevel   Porto, Portugal
Engineering Intern   *Jul 2025–Jul 2025*
- Enhanced test reliability in CI pipelines by building tools to detect and report non-deterministic tests in large Scala codebases, preventing flaky tests from reaching production.

PROJECTS

NixOS Configuration | *Nix, Linux, Infrastructure*   *Present*
- Built a declarative infrastructure-as-code system for managing multiple NixOS machines with a modular configuration.
- Deployed a home server running 15+ self-hosted services including media streaming, photo management, and file storage.
- Configured reverse proxy with automated SSL certificate management via Cloudflare DNS for remote access.

Personal Website/Portfolio | *Astro, Svelte, Tailwind CSS*   *Present*
- Created a personal portfolio website to showcase projects, share blog posts, and host my resume.
- Built with Astro and Svelte, styled with Tailwind CSS.

OpenQuest | *Laravel, PostgreSQL, REST APIs*   *Dec 2025*
- Built a collaborative Q&A platform using Laravel, supporting questions, answers, voting, and gamification features.
- Designed and implemented a relational database schema in PostgreSQL for managing user interaction, content moderation, notifications, tagging and categorization systems, badges, among others.
- Developed a REST API with OpenAPI documentation and role-based access control for multiple user roles.

Pacman | *Java, SOLID Principles*   *Dec 2024*
- Developed a text-based adaptation of the classic Pac-Man game using Java.
- Designed the project following SOLID principles for maintainability and scalability.
- Implemented object-oriented programming (OOP) techniques to modularize game logic and improve code reusability.

Water Supply Management Analysis Tool | *Max-Flow Graph Algorithms*   *Apr 2024*
- Developed a graph-based tool to assist the Management Team of a water supply network in Portugal.
- Implemented Max-Flow algorithms to analyze network metrics, evaluate resilience and optimize resource allocation.

TECHNICAL SKILLS

Languages: C, C++, Java, Kotlin, Scala, Python, JavaScript, SQL, Dart, PHP, Haskell, Prolog, Nix
Web Development: Svelte, Astro, Tailwind CSS, Spring Boot, NestJS, Laravel, REST APIs
Databases: PostgreSQL, MongoDB, SQLite, MySQL, Database Design, Relational Algebra
DevOps & Tools: Git, Docker, CI/CD, Linux, Nix
Software Engineering: OOP, Design Patterns, Software Architecture, Unit Testing, Refactoring, Debugging

LANGUAGES

Portuguese: Native | **English**: Highly Proficient