

# 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

**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, MDX, Tailwind CSS* Present

- Created a personal portfolio website to showcase projects, share blog posts, and host my resume.
- Built with Astro and MDX for content management, styled with Tailwind CSS and DaisyUI components.

**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