Pedro Castro

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PROFILE

Informatics and Computing B.E. student at FEUP 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–Present*
Relevant Coursework:

- Mathematical Analysis, Linear Algebra, Physics, Discrete Mathematics, Theory of Computation, Programming.
- Algorithms and Data Structures, Operating Systems, Software Engineering, Databases, Web Development.
- Compilers, Parallel and Distributed Computing, Artificial Intelligence, Computer Security, Computer Graphics.

EXPERIENCE

Member — Oct 2024–Present
NIAEFEUP 🔗 — *Porto, Portugal*

- Developing 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.

PROJECTS

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.

Hotel Reservation Database 🔗 | *SQL, Database Design, Normalization* — Nov 2024

- Designed and implemented a relational database schema for hotel room reservations.
- Developed a SQL database to manage bookings, cancellations, and room availability efficiently.
- Applied database normalization techniques to ensure data integrity and reduce redundancy.

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 Graph Algorithms to analyze network metrics, evaluate resilience and optimize resource allocation.
- Provided data-driven insights for resource allocation and identified potential improvements.

L.EIC Schedules Management System 🔗 | *Schedule Management, Sorting, Searching* — Nov 2023

- Created a system for managing a course schedule efficiently.
- Integrated algorithms for modifying, searching, viewing, sorting, and listing schedules.
- Designed an intuitive CLI interface for improved accessibility and usability.

Image Editing Program 🔗 | *C++, CLI, Image Processing* — May 2023

- Developed a simple C++ command-line tool for image manipulation tasks.
- Implemented key features such as cropping, mirroring, inverting, and pasting images.

TECHNICAL SKILLS

Programming Languages: C, C++, RISC-V Assembly, Java, Python, SQL, HTML, CSS, JavaScript, Dart
Frameworks: JUnit, Mockito, Flutter, Vue.js
Software Development: Object-Oriented Programming, Software Architecture, Design Patterns, Refactoring, Unit Testing, Debugging, Linux, Git
Algorithms and Data Structures: Algorithm Analysis, Algorithm Design, Graph Algorithms
Databases and Data Analysis: SQLite, PostgreSQL, MySQL, Pandas, Relational Algebra, Database Design

LANGUAGES

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