

# PEDRO PIRES

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Developer ~ Engineer

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## RESUME

I am 22 years old, proactive, communicative, and enjoy meeting and collaborating with new people. I have a genuine passion for solving problems and developing high-quality solutions. I value continuous learning and see every challenge as an opportunity to grow. I am currently seeking a job opportunity where I can develop professionally and contribute with enthusiasm and dedication.

## SKILLS

**Programming Languages:** Java, Java Springboot, SQL, Python, HTML, CSS, JavaScript, Prolog, C, C++, Assembly, R.

**Technologies:** Linux, Docker, SpringBoot, Spark, Hadoop HDFS, Hive, Tableau, PowerBI, RapidMiner, Talend, Core, XigmaNAS, NGinx, Figma, Microsoft365.

## LINGUAGENS

**Portuguese:** Native || **English:** Fluent || **Spanish:** Basic

## DEVELOPED PROJECTS

### Web Systems and Online Applications

**Online Bookstore with Microservices:** Migration of a monolithic application to a microservices architecture.

**Technologies and Patterns:** Java, Spring Boot, Kafka, MySQL, API Gateway, JWT, REST API, CQRS Pattern, SAGA Pattern.

**Web App for Environmental Association:** Frontoffice and backoffice for an association dedicated to cleaning beaches, rivers, and reforestation.

**Technologies:** HTML, CSS, Bootstrap, JavaScript, VueJS, Google API.

**Handball Team Support System:** Web platform with a backoffice for team and match management.

**Technologies:** Java, Spring Boot, HTML, CSS, JavaScript, SQL.

**Warehouse Logistics System:** Low-code solution for inventory management across multiple warehouses, integrating external APIs.

**Technologies:** Outsystems, SAP API, MOLONI API.

### Security Engineering and Infrastructure

**Information Security Project:** Access control with BLP model, network traffic analysis with Wireshark, risk assessment based on ISO/IEC 27005, digital certificate management using OpenSSL, and network protection with firewall and intrusion detection (pfSense and Suricata).

**Technologies:** BLP, Wireshark, ISO/IEC 27005, OpenSSL, X.509, pfSense, Suricata.

**Distributed Inventory Management:** Secure communication between processes with authentication and encryption.

**Technologies:** Java, Java Sockets, Java RMI, RSA+SHA256, Linux.

**NAS Infrastructure and Distributed Processing:** Cluster with XigmaNAS and multiple computers for file and service sharing.

**Technologies:** Docker, Go, XigmaNAS, NGINX.

**Computer Network Simulation:** Router mapping and network simulation in a virtualized environment.

**Technologies:** HTML, Linux, Core.

### Data Processing, Analysis and Visualization

**Interactive Dashboard on UK Homicides:** ETL pipeline and creation of interactive dashboards with geographic and temporal analysis.

**Technologies:** Spark, Python, Talend, Hadoop HDFS, Tableau.

**Book Dataset Modeling:** Integration and comparison of data across different database models.

**Technologies:** MySQL, Apache Cassandra, Neo4J.

### Machine Learning, Optimization and Artificial Intelligence

**Forecasting and Optimization System:** Application for predicting sales and optimizing resources using predictive models and heuristic algorithms.

**Technologies and Methods:** R, forecast, rminer, shiny, predictive models (XGBoost, ARIMA, ARIMAX, Random Forest, Holt-Winters), heuristics (Monte Carlo, Hill Climbing, Simulated Annealing, PSO, Differential Evolution, NSGA-II), rolling/growing window.

**Real Estate Predictive System:** Development of regression, classification, and clustering models to predict property prices, extract market patterns, and present results in an interactive dashboard.

**Technologies and Methods:** Python, Scikit-learn, Power BI, PCA, K-Means, DBSCAN, Decision Tree, Random Forest, NN, SVM, KNN.

**AI Model for Medical Prescriptions:** Symptom classification and medical decision support using declarative logic.

**Technologies:** Prolog, RapidMiner.

## EDUCATION

2024 – 2026: **Master's in Information Systems Engineering**

University of Minho — Currently in the 1st year, second semester, with all first-semester courses completed and a current average grade of 17/20.

2022 – 2024: **BSc in Information Systems and Management Engineering**

University of Minho — Final grade average: 16/20.

2020 – 2022: **BSc in Electronic Engineering**

Completed two years before transitioning to Information Systems. It was an enriching experience where I deepened my knowledge in electronics and low-level programming.

2017 – 2020: **High School Diploma in Science and Technology**

Alberto Sampaio Secondary School — Final grade average: 17.2/20.

## EXPERIENCE

2025 – Present: **Freelance Developer**

WenovGov — Developing a digital platform to manage RGPC (General Regime for the Prevention of Corruption), with a focus on decentralized input and multi-entity public administration management.

2021 – Present: **Administrative Assistant**

Portuguese Association of Public Contracts — Coordination of training sessions and support for trainers.

Sep 2016 – Oct 2022: **Luxury Goods Sales Assistant**

Carlos Pires Jeweler — Regularly supported sales in a family business, particularly during holidays, contributing to communication skills and improving English proficiency.

Sep 2021 – Oct 2021: **Retail Sales Assistant**

Salesland — Met and exceeded sales goals, standing out among new hires and being the only one to earn the bonus.