# Pedro Magalhães

Software Engineer

jpmag7@gmail.com
+351 919 851 348
[LinkedIn](#)
[Portfolio](#)
[GitHub](#)

## EXPERIENCE

### OmniumAI— *Intern*

October 2023 - October 2024

Worked in a team to create agents capable of helping in decision making processes in the food industry.

- **Developed a framework** capable of creating, evaluating and deploying conversational agents at large scales.
- Designed a **Retrieval Augmented Generation (RAG)** system to provide food engineers with reliable access to authoritative scientific data.
- Created **evaluation pipelines**, along with large scale ablation tests.
- Designed a **data collection** and **vector storage** system to optimize information retrieval at large scales.

## PROJECTS

### CrowdFlow— AI/ML, Python

October 2023 - present

Working with a team of 6 using ML to analyse consumers paths and demographics inside commercial surfaces.

- Designed and implemented the core **multi-camera tracking algorithms**.
- Created and **trained object detection models**, incorporating **synthetic data generation**.
- Developed secure **communication protocols** between edge devices and central servers.
- **Led deployment** of the platform across on-premises environments and cloud infrastructure.

### RPC— AI/ML, *Python, Tensorflow*

January 2023 - October 2024

**Relevant Precedence Compression (RPC)** is an experimental **language generation method** enabling small models (≤10M parameters) to produce coherent text by transforming the token prediction problem in a token retrieval problem.

- Designed and trained a compact **language model**.
- Encoded the training dataset in **vector database**.
- Enhanced efficiency of language generation through a **retrieval-based approach**.

## EDUCATION

### Universidade do Minho, Braga — *Master's Degree in Software Engineering*

September 2022 - December 2024

### Universidade do Minho, Braga — *Bachelor's Degree in Software Engineering*

September 2019 - July 2022

## SKILLS

Python · Tensorflow · Keras · PyTorch · ReactJS · Flask · Azure · Scikit-Learn · Java · C · C++ · C# · JavaScript Git · Unity

## LANGUAGES

English · Portuguese