



João Pedro Fernandes Marques

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● ABOUT ME

Industrial software engineer with a background in automation and electrical engineering. I build practical software for industrial systems — device integration, backend services, industrial communication protocols and web-based interfaces. Currently completing a Master's Degree in Electrical Engineering (Energy and Automation), where I developed ENERVIGIL, an open-source industrial energy-monitoring platform.

● WORK EXPERIENCE

07/10/2024 - 29/08/2025 - VISEU, PORTUGAL

AUTOMATION ENGINEER / INDUSTRIAL SYSTEMS SUPPORT ENDOVIS

- Developed and implemented new features and improvements in automation software for active production systems;
- Modified and maintained PLC, HMI and automation software for existing industrial machines and production lines;
- Diagnosed and corrected software-related issues affecting machine operation and production reliability;
- Adapted automation logic and operator interfaces to production and process requirements;
- Supported testing and validation of software changes in systems already in operation.

03/10/2022 - 30/09/2024 - TONDELA, PORTUGAL

AUTOMATION ENGINEER / SYSTEMS INTEGRATOR TOJALTEC

- Developed and modified PLC, HMI and automation software for industrial machines and production lines;
- Diagnosed and corrected software-related issues across development, installation and production phases;
- Integrated robots, industrial cameras and peripheral systems into automated production cells;
- Supported testing, commissioning and functional validation of automation systems;
- Worked with automation platforms from Siemens, Schneider Electric, Weintek, Omron, Yaskawa/Motoman and Universal Robots.

09/07/2018 - 13/09/2019 - VISEU, PORTUGAL

AUTOMATION TECHNICIAN MEIVCORE INDUSTRY SOLUTIONS

- Developed programming changes and technical improvements for industrial equipment;
- Performed controller parameterization and automation adjustments;
- Diagnosed and repaired faults in industrial machines, electrical systems and control components;
- Troubleshoot machine operation involving sensors, actuators, controllers and electrical circuits;
- Performed electrical maintenance in industrial facilities and production environments.

● EDUCATION & TRAINING

07/10/2024 - Current - VISEU, PORTUGAL

MASTER'S DEGREE IN ELECTRICAL ENGINEERING - ENERGY AND AUTOMATION- ESCOLA SUPERIOR DE TECNOLOGIA E GESTÃO DE VISEU

Developed an energy monitoring platform focused on data acquisition, processing, storage and visualization, using industrial communication protocols and a web-based interface (see Projects).

Level in EQF: 7 | Thesis: ENERVIGIL - Open-source platform for energy monitoring

16/09/2019 - 26/07/2022 - VISEU, PORTUGAL

BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING- ESCOLA SUPERIOR DE TECNOLOGIA E GESTÃO DE VISEU

Final grade: 17 | Level in EQF: 6

12/09/2016 - 09/07/2018 - VISEU, PORTUGAL

HIGHER PROFESSIONAL TECHNICAL DEGREE IN AUTOMATION AND ENERGY- ESCOLA SUPERIOR DE TECNOLOGIA E GESTÃO DE VISEU

Final grade: 17 | Level in EQF: 5

● **LANGUAGE SKILLS**

Mother tongue(s): **PORTUGUESE**

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	B2	B2	B2

● **SKILLS**

PLC / HMI

PLC programming | HMI development | PLC/HMI Troubleshooting | Automation Software Modification | Siemens TIA Portal | Schneider EcoStruxure Machine Expert | Omron CX-Programmer | Weintek EasyBuilder Pro

Industrial Communication

Device communication | Data acquisition | Modbus TCP/RTU | Profibus | Profinet | Ethernet/IP | OPC UA | IO-Link | MQTT

Robotics / Vision

Yaskawa/Motoman robots | Universal robots | Industrial cameras

Software Development

Python | JavaScript | TypeScript | FastAPI | HTML | CSS | Svelte | SQL | SQLite | InfluxDB | Docker | Git | Linux

Office / Documentation

Microsoft Word | Microsoft Excel | Technical documentation

● **PROJECTS**

07/10/2024 - CURRENT

ENERVIGIL — Open-source energy-monitoring platform Local-first platform for acquiring, processing and visualizing industrial energy data, developed as my MSc dissertation project. Integrates industrial meters over standard protocols, stores measurements locally and exposes them through a secure web interface and MQTT.

- Full-stack build: Python/FastAPI backend, SvelteKit/TypeScript frontend;
- Device integration over Modbus RTU and OPC UA; MQTT publishing for external systems;
- Time-series storage (InfluxDB) and configuration data (SQLite); Dockerized, local-first deployment;
- Validated on a Raspberry Pi 4 with a real energy meter (Modbus RTU) and a Siemens S7-1200 (OPC UA);
- Secure access with HTTPS, JWT sessions and brute-force protection.

Link <https://joaomarques.pages.dev/enervigil/>