FELIPE DIOGO

Electronic Systems, Robotics & Industry 4.0 Engineer | Lisbon, PT | Ready to relocate
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Professional Profile

Mechatronics, Robotics & Automation Engineer with 7+ years bridging industrial OT (PLC, SCADA, electrical design, industrial protocols) and modern IT (Python, Docker, cloud, AI/ML). Equally comfortable with an electrical schematic, a multimeter on the workbench, or a code IDE; track-side-ready mindset, fast diagnostics and a passion for robotics, autonomous systems, high-tech, and AI development.

- **Autonomous Vehicles & Robotics:** End-to-end ownership of multiple UGV platforms , including power electronics, by-wire control (steer/brake), automotive ECU integration, CAN bus, and wireless comms.
- **Real-Time Control & Safety:** Direct hands-on experience with LiDAR, GNSS, and camera systems; teleoperation with 50 Hz control loops, 720p WebRTC video.
- **Industrial Automation & IT/OT Convergence:** 20+ delivered industrial machines (EPLAN/AutoCAD schematics, panel build, commissioning)
- **AI & Computer Vision:** Edge AI visual inspection on Raspberry Pi ; LLMs, AI agents, and AI-augmented workflows as daily force multipliers across design, coding, and operations.
- **Technology Enthusiast:** 1000+ hours of self-directed study in embedded AI and full-stack engineering; auto-didact, fast learner, continuously exploring new tools to bring state-of-the-art solutions to engineering challenges.

Technical Skills

Autonomous Vehicles & Robotics	by-wire-control, Automotive ECUs, CAN bus, Power Electronics, Motion Control, UGV/AGV end-to-end development, ROS2 pub/sub patterns.
Sensors & Perception	LiDAR, GNSS/GPS, Cameras, Computer Vision (OpenCV, TensorFlow, TFLite, Anomalib/PaDiM), National Instruments hardware.
Electrical & Mechanical Design	EPLAN, AutoCAD, SolidWorks, Schematic creation & interpretation, Electrical panel design, Wiring, Bench diagnostics, Load calculations.
Embedded & Real-Time Systems	Raspberry Pi, ESP32, NVIDIA Jetson Nano/Orin, Real-time control, WebRTC teleoperation, MQTT/TLS, Hardware fail-safe design.
Industrial Automation & IT/OT	PLC (TIA Portal, CODESYS), SCADA/HMI (AVEVA, WinCC, Indusoft), Modbus RTU/TCP, Profinet, EtherCAT, OPC-UA, LoRa, Node-RED.
Software, Cloud & DevOps	Python (pandas, NumPy), JavaScript/TypeScript, Node.js, FastAPI, Next.js/React, REST & WebSocket APIs, Docker/Compose, Linux/VPS, Nginx, Git, CI/CD (GitHub Actions),C++,C#.
Data, AI & LLM Engineering	SQL, PostgreSQL, InfluxDB, ETL pipelines, Grafana, Power BI, KPI dashboards, LLM APIs, Claude Code, AI agents, prompt engineering.
Methodologies & Tools	Scrum, Kanban, Agile, Jira, requirements gathering, cross-functional team leadership, technical documentation, MATLAB, LabVIEW.

Professional Experience

Movewer Technologies *Lisbon, Portugal*
Founder & Engineer *June 2025 – Present*

- **Founded the Practice & Led Engineering End-to-End:** Established Movewer as an independent Robotics and Industry 4.0 engineering practice; owned commercial scoping, technical architecture, supplier selection, and full delivery lifecycle across UGV, IIoT, and edge AI engagements — operating as solo lead engineer with external collaborators on demand.
- **Autonomous Vehicle Engineering Leadership:** Owned the full electronic and control stack for multiple UGV platforms up to 1,200 kg payload, taking systems from blank-page architecture to integrated and field-tested hardware — power electronics, by-wire actuation, automotive ECU integration, CAN networking, multi-sensor integration (LiDAR/GNSS/cameras), and Starlink/5G connectivity.
- **Real-Time Control & Safety Engineering:** Delivered production-grade teleoperation and embedded control as a reusable in-house capability, applying automotive-grade safety patterns (hardware fail-safe watchdog, redundant links, sub-second motor lockout)
- **IT/OT Convergence & Edge AI Delivery:** Architected and shipped industrial-grade IIoT monitoring and edge AI inspection capabilities as a commercial alternative to off-the-shelf SaaS, enforcing GDPR-compliant security (TLS 1.2+, AES-256 encrypted backups, hardened Docker stack) and AI-driven natural-language analytics over raw sensor streams.

Psyche AeroSpace *São Paulo, Brazil*
Automation & UGV Engineering Manager *June 2024 – June 2025*

- **Built the Autonomous Vehicle Function from Zero:** Founded the UGV and Automation divisions, leading 5 engineers across two product lines (agricultural UGVs and drone-support infrastructure); delivered systems cited by company leadership as key technical proof points contributing to a successful fundraising round.
- **Sensor & Control Engineering:** Led hands-on integration of GNSS and vision subsystems onto UGV and UAV prototypes, with direct involvement in schematic design, panel wiring, and bench-level troubleshooting.
- **Delivery Under Pressure:** Brought a 10 kg agricultural quadcopter from concept to flight-ready prototype in under 6 months (electrical design, mechanical integration, flight-control logic, telemetry); $\sim$30% reduction in time-to-prototype through disciplined Scrum sprints on Jira.
- **Stakeholder Translation:** Translated complex operational requirements into technical user stories, functional workflows, and automation logic, bridging business stakeholders and engineering execution.

Controvale *São Paulo, Brazil*
Technician and Automation Engineer *June 2018 – June 2024*

- **Hands-On Electrical Engineering:** Delivered 20+ special industrial machines end-to-end, EPLAN schematics, load calculations, component specification, panel build, cabinet wiring, bench testing, and commissioning; average project delivered on time and within 5% budget variance.
- **PLC & SCADA Programming:** Programmed PLCs and configured HMI/SCADA systems (TIA Portal, CODESYS, Indusoft) for manufacturing and process automation, improving operator visibility and cutting unplanned downtime across client facilities.
- **Engineering Standardization:** Reduce project rework by $\sim$25% % by introducing disciplined electrical design and documentation practices across the engineering team.

- **Field Diagnostics & Distribution:** Regional distributor for Wecon and Kinco; built and maintained 35+ industrial client partnerships over six years — on-site diagnostics, technical pre-sales, integration, and post-deployment support.

Key Projects — Details on my Personal Website

- **ARMAX Autonomous Ground Vehicle (Aug. 2025):** Full development of a 1,200 kg-payload autonomous UGV. Owned electrical architecture (power electronics, by-wire actuation, CAN), wireless control stack, sensor integration (LiDAR, GNSS, cameras), performance benchmarks, and commercial feasibility studies. [link]
- **AI Data Platform (Jan. 2026):** Production-grade IIoT monitoring platform on VPS: six containerized services (Mosquitto, Telegraf, InfluxDB, Grafana, Python analytics, encrypted backup), six-layer security architecture, dev/prod separation via Docker Compose overlays, Nginx + Let's Encrypt reverse proxy, and AI-generated natural-language insights via custom REST API. GDPR-compliant; zero-cost alternative to commercial SaaS (US$50–200/month). [link]
- **HOTAS Remote Control System (Mar. 2026):** Distributed production-grade real-time teleoperation for unmanned vehicles. Three components (desktop operator station, cloud MQTT broker, Raspberry Pi controller) communicating via MQTT over TLS in a ROS2-inspired pub/sub architecture. 50 Hz HOTAS input, 720p WebRTC video at 30 fps via TURN relay, hardware fail-safe watchdog with sub-second motor lockout, 74-test automated suite, monorepo with Git submodules. [link]
- **MLAI Edge Vision Inspection (Apr. 2026):** Self-contained perception station on Raspberry Pi 4 with two inference modules (INDUST: PaDiM anomaly detection on MVTec AD for industrial QC; AGRO: SSD MobileNet V2 fruit detection and grading), unified under a SCADA-style Next.js dashboard with FastAPI + WebSocket live stream, camera calibration, dimensional measurement (px$\rightarrow$mm), and SQLite history. Runs fully offline via TFLite (XNNPACK); three auto-restarting systemd services; $<$500 ms end-to-end latency. [link]

Education, Languages & Logistics

Education: B.Sc. Control and Automation Engineering, Federal Institute of São Paulo (IFSP), 2019–2023. Self-Directed Software & AI Engineering (2022–Present): freeCodeCamp, One Bit Code, and hands-on project work with LLM tooling — 1,000+ hours.

Languages: Portuguese (Native), English (C1 Advanced); open to learning Dutch, French, or German for the right role.

Driving Licence & Availability: Full driving licence (Brazilian; EU exchange in progress); ready to relocate.