Marco Mongi

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Work Experience

Ascentio Technologies — Río Cuarto, Argentina
Product Owner, Systems Engineer — July 2022 – July 2025

- **Managed teams** of up to 10 people as **Product Owner** and **Systems Engineer**, leading the Technological Infrastructure and Science Data Processing subsystems of the SABIA-Mar satellite mission.
- Launched the company's **artificial-intelligence division**, transferring expertise to the team and enabling the acquisition of new clients in computer vision and Industry 4.0.
- Led end-to-end a **computer-vision production-control system** for an industrial plant, covering design, production rollout and ongoing maintenance. The solution blends multi-object detection and tracking, edge computing, IoT protocols and real-time dashboards, enabling performance and efficiency monitoring.
- **Implemented** over 20 improvements to the L0 processor of the SABIA-Mar satellite mission in Python, fulfilling client-required functionalities within a 3-month timeframe.

Ascentio Technologies — Río Cuarto, Argentina
Intern — September 2020 – December 2020

- Developed a platform for **automatic crop detection** in Python, achieving 80% accuracy using supervised classification algorithms applied to time series of multi-spectral satellite images.

Faculty of Engineering, UNRC — Río Cuarto, Argentina
Intern — 2018 – 2019

- Contributed to the project "Improving university campus accessibility – Hearing loops", implementing **systems to enhance hearing** for people with impairments.

Education

Stanford University — Online
Machine Learning Specialization — 2025

National University of Córdoba / MundosE — Córdoba, Argentina
University Diploma in Data Science — 2024

National University of Río Cuarto (UNRC) — Río Cuarto, Argentina
Telecommunications Engineering, Radiocommunications Orientation. GPA: 8.71 — 2013 – 2022

COURSES AND CERTIFICATIONS

2025 | EF SET English Certificate | EF SET | C2 Proficient
2025 | Gen AI Intensive Course | Google / Kaggle
2024 | Introduction to Statistics | Stanford University
2017 | **First Certificate in English** | University of Cambridge | Grade A (C1)

Additional courses on LinkedIn profile.

Skills

TECHNICAL SKILLS

- **Python** (OOP, NumPy, Pandas, Scikit-learn, pytest, FastAPI, CI/CD).
- **R** (basic analytics) and MATLAB programming.
- Databases: **SQL**.
- **Machine Learning & AI**: supervised/unsupervised models, reinforcement learning; time-series forecasting; deep learning with PyTorch and Keras/TensorFlow; LLMs; generative AI & prompt engineering.
- **Computer Vision**: object detection and segmentation, OpenCV, digital image processing, remote sensing imagery, GIS.
- **Data Engineering**: ETL pipelines and Apache Airflow orchestration.
- **Data Visualisation & Dashboards**: Tableau, PowerBI, Grafana.
- **Web/UI Prototyping**: Gradio, Streamlit.
- **DevOps & Cloud**: Git, GitHub & GitHub Actions, Docker, Docker Swarm, Kubernetes, high-concurrency architecture, AWS, GCP.
- **IoT & Edge Computing**: MQTT, Raspberry Pi, hardware accelerators.
- **Systems Design**: scalable Industry 4.0 and satellite applications (frontend, backend, databases).
- **Testing**: unit (pytest, unittest), system (Robot/Behave) and end-to-end.
- **Product & Project Management**: Agile/Scrum (JIRA), Product Ownership, Product Management.
- **Documentation & Reporting**: LaTeX, academic writing.
- **Hardware & Prototyping**: Arduino, robotics, sensor integration, soldering, 3D design (SolidWorks/Fusion 360) and 3D printing (FDM).
- **Operating systems**: Windows & Linux.
- **Public speaking & training materials** (English/Spanish); effective communication.
- **English** proficiency: C2 EF SET, C1 Cambridge FCE.

SOFT SKILLS

- **Product vision** and strategic **roadmap** definition.
- **Backlog** management and feature prioritization.
- **Effective stakeholder communication**, expectation management and negotiation.
- **Effective communication of technical concepts** to non-technical audiences.
- **Cross-functional leadership** and **coordination**, fostering teamwork.
- Risk, scope, resource and budget **management**.
- Systems analysis and evaluation; **KPI**- and **OKR**-driven decision making.
- **Continuous improvement and innovation** of processes, products and working methods.
- **Mentoring**, knowledge transfer and peer reviews.
- **Customer-centric** focus.
- **Emotional intelligence** and empathic collaboration.
- **Critical and analytical thinking**, complex problem solving.
- **Time management** and high-quality delivery under pressure.
- **Continuous learning and adaptability** to change.

Academic Publications

- 2021 | **First author**: Design of 5G-oriented patch antennas, a comprehensive survey. EAI Endorsed Transactions on Mobile Communications and Applications. doi: 10.4108/eai.16-3-2021.169031
- 2019 | **First author**: Deep Learning applied to the handoff of cellular systems: a survey. TechRxiv. doi: 10.36227/techrxiv.11391906.v1

Presentations and Recognitions

PRESENTATIONS

- 2024 | **Presenter** at the Infopork Swine Innovation Forum, presenting how artificial intelligence transforms the agro-industry and its challenges.

- 2023 | **Presenter** of systems in charge to stakeholders during the Critical Design Review of the SABIA-Mar mission (MCDR), evaluated by experts from institutions like NASA, CNES, AEB, and INPE. The presentation was in English, reviewing the satellite's science data processing systems (L0 Processor) and generated product publication.

COMPETITIONS

- 2024 | Winner of the **Datathon** Río Cuarto 2024, developing improvements for an LLM chatbot for bullying prevention. Competed in groups of 4 people with approximately 100 participants, performing ETL activities.

Personal Projects

I have developed a comprehensive portfolio of AI and data engineering projects, including:

- **Computer Vision:** Real-time license plate detection (YOLOv8, DeepSORT, OCR) and automated blood cell counting (YOLO+SAM2 pipeline)
- **NLP & LLMs:** Local AI chat platform with RAG and agentic workflows, multi-agent resume optimizer, interactive story generator with bilingual voice interaction, and Whisper-based transcription studio
- **Machine Learning:** Deep reinforcement learning lunar landing controller, CNN-based digit classification (99.49% accuracy), unsupervised anomaly detection with Isolation Forests for health monitoring, time-series energy forecasting (regression), and survival probability predictor
- **Data Engineering:** Apache Airflow ETL pipelines and real-time anomaly streaming with TIG stack

All projects feature production-ready practices including Docker containerization, interactive UIs, and comprehensive documentation. As a hobby, I also enjoy working with electronics (Arduino, Raspberry Pi) and 3D printing. For additional details on the projects, visit my GitHub profile.

Languages

- **Spanish**: Native
- **English**: C1 (ESOL) / C2 (EF SET)