

Marco Mongi

marcomongi@gmail.com • LinkedIn: marco-mongi • GitHub: marcoom • Río Cuarto, Córdoba

Experience

Ascentio Technologies

Río Cuarto, Argentina

Product Owner, Systems Engineer

July 2022 – Present

- Led the design and implementation of a **scalable performance metrics monitoring system** (OEE) for a bread factory, integrating **computer vision** technologies (YOLO), **edge computing** with Raspberry Pi, **IoT** protocols (MQTT), and real-time visualization with Grafana, enabling the client to optimize production and operational efficiency.
- **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.
- **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.
- **Presented systems** to stakeholders during the Critical Design Review of the SABIA-Mar mission (MCDR), evaluated by experts from institutions such as NASA, CNES, AEB, and INPE.
- **Trained** a team of 5 people in data science and artificial intelligence, facilitating the transition to computer vision and Industry 4.0 projects.

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 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 hearing impairments.

Freelance

Río Cuarto, Argentina

PC Technical Support

2018

- Provided on-site **computer maintenance and repair** for private clients, optimizing system performance by an average of 60%.

Mongi Alimentos

Río Cuarto, Argentina

Customer Service and Inventory Management

2015 – 2016

- **Managed inventory** with a 1% margin of error and **attended to approximately 30 customers daily**, improving the company's operational efficiency.

Education

Universidad Nacional de Córdoba (UNC) / MundosE

Córdoba, Argentina

University Diploma in Data Science

2024

Universidad Nacional de Río Cuarto (UNRC)

Río Cuarto, Argentina

Telecommunications Engineering, Radiocommunications Orientation. GPA: 8.71

2013 – 2022

Escuelas Pías de Río Cuarto

Río Cuarto, Argentina

High School Diploma in Natural Sciences. GPA: 8.47

2007 – 2012

COURSES

2024 | OpenCV Bootcamp | OpenCV University | 100%
 2024 | Public Speaking Course | Aprender de grandes
 2023 | Swarm Course | Platzi
 2023 | Docker Course | Platzi
 2023 | Apache Airflow Fundamentals Course | Platzi
 2023 | Audiocourse on High-Concurrency Architecture Fundamentals | Platzi
 2023 | Professional Git and GitHub Course | Platzi
 2023 | High-Concurrency Architecture Fundamentals | Platzi
 2023 | Machine Learning Experimentation with Hugging Face Course | Platzi
 2023 | Product Owner Fundamentals Course | Platzi
 2023 | Prompt Engineering with ChatGPT Course | Platzi
 2023 | Product Management Fundamentals | Platzi
 2023 | Software Testing Fundamentals Course | Platzi
 2023 | Artificial Intelligence Course: ChatGPT, DALL-E, and Hugging Face | Platzi
 2023 | Introduction to Artificial Intelligence Course | Platzi
 2023 | Software Engineering Fundamentals | Platzi
 2023 | LaTeX Basics and First Steps | Coursera Project Network
 2022 | Agile with Atlassian Jira | Atlassian
 2022 | Pass the EXIN Agile Scrum Foundation Certification | Udemy
 2022 | Satellite Image Processing with Open Source Software | Centro Redes | 100%
 2022 | Introduction to 3D Printing in FDM | Academia Hellbot
 2021 | Decision Trees, Random Forests, AdaBoost & XGBoost in Python | Udemy
 2021 | Pandas with Python for Data Science | Udemy
 2021 | 100% Practical Git and GitHub | Udemy
 2021 | Artificial Neural Networks (ANN) with Keras in Python and R | Udemy
 2021 | Cryptocurrency Investment Bot with Python | Udemy
 2020 | Virtual Course: Licensed Electrician Installer Category III | UNC | 100%
 2020 | Basic Automotive Mechanics | UNC | 100%
 2020 | Introduction to Informatics | UNC | 100%
 2020 | Ergonomics for Self-Care in Teleworking Times | UNC | 98%
 2020 | Virtual Course: Mobile Phone Management | UNC | 97%
 2020 | Basic First Aid Notions | Cba Me Capacita Program | Passed
 2017 | **First Certificate in English** | University of Cambridge | Grade A
 2016 | Arduino Programming | ITec Río Cuarto | Passed
 2016 | PC Repair Level 1, 4th Edition | ITec Río Cuarto | Passed
 2015 | Robotics Workshop | Aprender Conectados (educ.ar) | Passed

CONFERENCES

2020 | Argentine Embedded Systems Congress 2020 | Attendee
 2019 | Introduction to Network Virtualization | UNRC | Approved Attendee
 2019 | Update on Mobile Cellular Access Network Technologies | UNRC | Attendee
 2018 | Campus Party Argentina 2018 | Attendee
 2017 | Artificial Intelligence and its Applications in Engineering | UNRC | Attendee
 2017 | Construction and Commissioning of Magnetic Loops to Improve Hearing for People with Hearing Loss | UNRC
 | Approved Attendee
 2017 | 2017 Graduate Sessions | UNRC | Attendee
 2016 | Campus Party Argentina 2016 | Attendee

Skills

TECHNICAL

- Implementation of computer vision algorithms using YOLO.

- Development of IoT solutions with MQTT protocol.
- Configuration and use of edge hardware like Raspberry Pi and graphic accelerators.
- Programming and use of sensors in Arduino.
- Implementation of real-time monitoring systems (Grafana).
- Design of scalable systems for Industry 4.0 and satellite applications, including frontend, backend, and databases.
- Knowledge of Airflow.
- Unit testing (pytest), system testing (Robot/Behave), and end-to-end testing.
- Project prototyping with Gradio.
- Python development for computer vision, data science, and supervised learning models (NumPy, Pandas, Scikit-Learn).
- ETL and evaluation of trained models.
- 3D design and printing.
- Deployment of systems with Docker and Kubernetes.
- Collaborative development with Git.
- Documentation with LaTeX.
- Writing academic reports.
- Management of the JIRA platform.
- Creation of training materials in video format in English and Spanish.
- Antenna design in CST Studio Suite.
- Soldering and testing of electronic components, cabinet design.
- Programming in MATLAB.
- Use of digital image processing techniques.
- Use of geographic information systems (GIS).
- Creation of spreadsheets in Excel.
- Advanced handling of office tools.
- Use of Windows and Linux operating systems.
- Image and video editing.
- PC technical support.

COMPETENCIES

- Team management and use of agile methodologies (Scrum, Kanban).
- Effective interaction with stakeholders.
- Training team members in data science and artificial intelligence.
- Writing technical texts in English and translations.
- Interpretation and communication in spoken English.
- Customer service and problem solving.

Academic Publications

- 2021 | **First author:** Design of 5G-oriented patch antennas, a comprehensive survey. EAI Endorsed Transactions on Mobile Communications and Applications. <http://dx.doi.org/10.4108/eai.16-3-2021.169031>
- 2020 | **Doctoral thesis review:** Communication, modeling, and optimal scheduling of loads in smart grids | Federico Aguirre
- 2019 | **First author:** Deep Learning applied to the handoff of cellular systems: a survey. TechRxiv. <https://doi.org/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.

RECOGNITIONS

- 2012 | Participation in the **Córdoba Mathematics Olympiad**, reaching the third level.
- 2004 – 2012 | Multiple nominations for "**Best Classmate**".
- 2011 | Achieved "**Seniors**" level in **English**, Steps Institute.
- 2004 | **Second Flag Bearer** of the National Flag.

Personal Projects

- Developed a **stock index prediction system** based on historical time series analysis and sentiment analysis, achieving 90% accuracy in the latter.
- Designed and implemented a **sensor and actuator** with Arduino for livestock applications, which turns heaters, lights, and fans on and off based on time and sensed temperature and humidity.
- Implemented a **local server** functioning as Network Attached Storage (NAS), video server, automatic content downloader, ad blocker, and home automation using Raspberry Pi.
- Designed an **add-on for a tablet** that allows it to be used with a joystick without losing charging and volume control functionalities.

Languages

- **Spanish**: Native
- **English**: B2 Level, Grade A (ESOL)

Additional Information

- **Driver's License**: Category B2
- Member of the **Networks Laboratory** (2018 – 2020)
- **Representative of the Telecommunications Engineering program** (2013)