

MBA. Eng. Juan Marcelo Barreto Rodríguez

Data Analytics & Engineering | Python & Machine Learning | GIS/PostGIS | IoT | Software Architecture

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CONTACT

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PROFESSIONAL PROFILE

Materials Engineer and MBA with more than 15 years of experience integrating engineering, software and data analytics to solve complex problems and turn dispersed information into decisions, automation and operational systems. I have five years of experience as a Project Manager / Project Engineer at CONUAR-FAE, working on the production of nuclear fuel components for the Atucha and Embalse nuclear power plants in a highly demanding technical and regulatory environment. Specialist in Python, Machine Learning, GeoDjango/PostGIS, IoT and software architecture. My key strength is combining engineering reasoning, process understanding and technology to identify patterns, causes and opportunities that are not always evident from a superficial reading of the data.

KEY CAPABILITIES FOR DATA & ANALYTICS

- Python 3 for analytics, automation and data processing.
- Machine Learning and neural networks: training, application and knowledge transfer.
- PostgreSQL/PostGIS, GeoDjango and geospatial data analytics.
- Problem modeling, identification of relevant variables and causal analysis.
- Integration of data from software, IoT, sensors and distributed systems.
- Decision-oriented visualization and web applications using Leaflet.js and APIs.
- Lean / OEE / FMEA / 8D / 5 Whys for structured performance and failure analysis.
- Architecture, deployment and operations: Linux, Docker, VPS, Git/GitHub, SSH and TLS.

PROFESSIONAL EXPERIENCE

Director - Center for Intelligent Integration Technologies | UTN Buenos Aires | 2024 - Present

- Leadership of research, development and integration initiatives involving IoT, home automation, software and intelligent systems.
- Definition of modular architectures and coordination of technical teams focused on technology transfer and practical implementation.

Technology Consultant and Training Provider | Coca-Cola | Late 2025 - Present

- Design and delivery of advanced Python training applied to process automation, data structures and optimization of corporate workflows.

Software Engineer (Remote) | Klagan - Barcelona, Spain | Pandemic period

- Software development and architecture integration for European projects using agile methodologies and international technical collaboration.

General Consultant and Solutions / Training Provider | ANSES | 2018

- Development of modernization solutions and technical training programs in software and technology management tools.

General Coordinator and Academic Specialist | UTN FRBA / FRH | 2011 - Present

- Curriculum design, technical direction and delivery of highly specialized programs in Python, Machine Learning, neural networks, Django/GeoDjango, Home Assistant and IoT with Arduino.
- Coordination of more than 10 simultaneous laboratories and technology training programs.

Project Manager / Project Engineer | CONUAR - FAE (Combustibles Nucleares Argentinos) | 2006 - 2011

- Five years of experience in the nuclear industry, managing engineering projects related to the production of nuclear fuel components for the Atucha and Embalse nuclear power plants.
- Application of process improvement and analysis methodologies - OEE, FMEA, 5S, 8D and contingency planning - under strict nuclear-industry and international standards.

FEATURED PROJECT - GEOSPATIAL DATA & DECISION-MAKING

Integrated Road Management & Rural Reporting Platform - GeoDjango / PostGIS

Software Architect & DevOps - Independent project / portfolio

- Design and deployment of a spatial web application for agricultural route mapping, geolocated incident management and data exploitation using GeoDjango and PostGIS.
- Modeling of LineStringField and PointField geometries, interactive visualization with Leaflet.js, and automated processing of logistics and maintenance costs per kilometer.
- Production architecture on Linux/VPS using Django, Docker, PostgreSQL/PostGIS, Git/GitHub, SSH, Traefik and TLS certificates.
- The project demonstrates end-to-end capability: modeling the problem, designing the data, building and deploying the application, and turning results into actionable information.

EDUCATION

- MBA - Master of Business Administration, UTN FRBA. Outstanding thesis; GPA 9/10.
- Materials Engineering - Instituto Sábató, Comisión Nacional de Energía Atómica (CNEA).
- Advanced studies in Physical Sciences and Industrial Engineering - Universidad de la República, Uruguay.

TECHNOLOGIES

Data / Backend: Python 3, Django, GeoDjango, PostgreSQL, PostGIS, MySQL, APIs, automation.

Machine Learning: Machine Learning, neural networks, data analysis and structuring.

GIS / Visualization: Leaflet.js, spatial geometries, geolocated data, JavaScript.

IoT / Embedded: ESP32, Arduino, Home Assistant, Node-RED, sensor and systems integration.

Infrastructure / DevOps: Linux, Docker, VPS, Traefik, SSH, TLS, Git, GitHub.

Management / Engineering: Project Management, Lean, OEE, FMEA, 8D, 5S, 5 Whys, FEA.

VALUE PROPOSITION

I seek to contribute in roles where data must be transformed into concrete decisions: operations, maintenance, production, reliability, logistics, assets, geolocation or digital transformation. I can work both on the analysis itself and on building the tools required to capture, process, integrate and present the information.

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