Rodrigo Antonio Aliaga Velez

Industrial IoT & Automation Engineer | Lean Six Sigma Black Belt

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Expert in designing and deploying end-to-end automation systems across manufacturing, experienced in integrating hardware, software, and cloud solutions to optimize performance and reliability. International project delivery experience in the UK, UAE, LATAM.

Work Experience

IOT Engineer and Automation Engineer
Fogsphere | United Kingdom (Remote Work)

Jun 2023 - Present

Business or Sector.- Start up, IIOT, Technology development

- Designed and deployed Industrial IoT systems integrating **Siemens, Mitsubishi, and Allen Bradley PLCs**.
- Configured and implemented Teltonika IoT gateways and **MQTT (EMQX broker),** using industrial protocols (PCCC, OPC-UA, Profinet) with InfluxDB, MongoDB, PostgreSQL backends.
- Developed real-time **Python acquisition scripts for edge device and server execution**.
- Built HTML/CSS/JavaScript visualization interfaces and dashboards in Grafana, containerized with Docker on Linux environments.
- **Designed and executed QA test plans for APIs**, ensuring data accuracy and system reliability across IIoT platforms.
- Coordinate development **for IIOT visualization solution** with **PWC** designers for KSA water plants (Kingdom of South Arabic). Installation of **IIOT solution** for Sea Water Reverse Osmosis in UAE – Dubai.

Part time Professor Internet of Things & Fast Prototyping
Escuela Militar de Ingeniera University | La Paz Bolivia (On site Work)

Jan 2023 – Dec 2023

Business or Sector.- University Education

- Designed and delivered courses on Industrial IoT covering wireless communication, electronic boards, IoT architecture, **MQTT protocol, broker configuration**, and security in data transmission.
- Trained engineering students in tools and platforms such as **Node-RED**, **Grafana**, and **time-series databases** for real-time monitoring.
- Instructed advanced courses on **fast prototyping**, applying CAD, **industrial design**, and design for manufacturing to develop functional prototypes.
- Guided final projects integrating hardware, software, and cloud solutions to address real-world industrial challenges.

Maintenance Planner
ABInBev | Santa Cruz

Nov 2020 – Sept 2022

Business or Sector.- Food manufacturing

- Led cross-functional teams of up to 41 people, managing preventive, predictive, and corrective maintenance using RCM principles and Lean Six Sigma methodologies.
- Designed and implemented IIoT dashboards for real-time monitoring, integrating PLC systems with Modbus RTU for energy and production data acquisition.
- Directed automation and control projects in packaging lines, delivering a 31% increase in production capacity over two years.
- Developed a 3D-printed safety device to reduce surface contact during COVID-19, replicated across 3 plants (~400 units).Managed annual maintenance budgets up to 0.5M USD using Zero-Based Budgeting and data-driven optimization.

- Led Determination Line automation project, reducing stoppages from 30/month to 4 and increasing MTBF from 18h to 165h while reducing MTTR from 6h to 42min.Delivered calibration optimization project achieving 80% cost reduction in instrumentation.

Maintenance Planner
ABInBev | Santa Cruz
Ago 2019 - Oct 2020

Business or Sector.- Food manufacturing

- Led automation and control modernization projects, replacing obsolete PLCs and increasing panel operational readiness from 12% to 85%.
- Implemented IIoT solutions for monitoring electrical, steam, CO_2, and ammonia systems.
- Improved Electrical Safety Management from 16% to 70% in 8 months through training, equipment upgrades, and risk management systems.
- Enhanced Steam Safety Management from 70% to 96% via system upgrades, predictive maintenance, and condensate recovery optimization.

Project Engineer
Rugged Controls SRL| La Paz – El Alto
Aug 2016 – Sept 2017

Business or Sector.- Food manufacturing

- Designed, planned, and delivered industrial automation projects for mining, fertilizer, and food industries using Allen-Bradley, Siemens, and Omron PLCs.
- Produced electrical drawings and assembled control panels for production lines, ensuring compliance with industrial standards.
- Executed panel migration projects in dairy and milling plants, improving system reliability and reducing downtime.
- Developed web applications for automatic quotation systems and corporate websites using HTML, CSS, JavaScript, and PHP.

Education

Master's Degree in Corporate Management in Industry 4.0
Lean Six Sigma Institute – Universidad Católica de Murcia
Jan 2024 – Present

- Training in strategic management, leadership, and process optimization, applying Lean Management and Six Sigma Black Belt (DMAIC, VSM, SMED) for continuous improvement and cost reduction. Focus on digital transformation and project management for industrial modernization. Lean Six Sigma Yellow, Green and Black belt certified.

Graduate Certificate in Agile Professional Project Management
Feb 2024 – Jun 2024

- Agile Project Management, Lean Methodology, Lean Startup, and Kanban Methodology. Experienced in SCRUM Methodology, including planning, sprints, review, retrospective, and scaling. Skilled in Technological Innovation Management, Design Thinking, and strategic project alignment for organizational success.

Bachelor's Degree in Mechatronics
Jan 2012 – Dec 2015

- Automatic control, Mechanisms, Mechatronics Systems, Communication protocols, Pneumatics, Electronics, Power electronics, Servo mechanical design, 3D Design, Computer Numerical Control, Artificial intelligence, Programming, Artificial Vision.

Diploma of Higher Education
"San Pablo" Bolivian Chatolic University (La Paz – Bolivia)
Mar 2016 – Dec 2016

- Learning Assessment, new teaching role, ethics, didactics, curricular design, approach by competences, new technologies in the classroom, Planning the Teaching-Learning Process

Graduate Certificate Automation on Mechatronic Process
"San Pablo" Bolivian Catholic University (La Paz – Bolivia)
Aug 2015 – Dec 2015

- Industrial sensors, Electropneumatic, Artificial vision, PLC's, Controller Networks, Smart control Process Validation

Certifications & Technical Training

- **Black Belt Lean Six Sigma** – Lean Six Sigma Institute
- **Scrum** Foundation Professional Certificate (Certiproff)
- **Hive MQ Certified** v3.1.1 **Professional** Hive MQ Associate
- OPC UA, MQTT, **Microsoft Azure IOT** e Industria 4.0
- **Industrial Instrumentation** + ABB PLCs – Gabriel Rene Moreno University (2021)
- **Deep Learning Fundamentals** – Bolivian Catholic University (2021)
- **Electrical Safety Management** (ESM) – Quilmes Brewery (2019)Process
- **Ammonia Safety Management** (PSM) – Quilmes Brewery (2018)
- **Industrial Services** – Quilmes Brewery (2018)

Professional Contributions

Technical Reviewer – "Practical IoT Handbook"
BPB Publications - 2025
BPB Publications / Amazon Kindle Direct Publishing (2023)Provided technical review and feedback on IoT architectures, MQTT, CoAP, Raspberry Pi, InfluxDB, and data visualization using Grafana. Ensured technical accuracy of content across hardware integration, protocol implementation, and end-to-end IoT solutions.
Available in Amazon

Core Skills

Technical Skills

- **Programming/ Web development:** Python, Javascript, HTML, CSS, Node Red, Grafana, Influx DB, PHP, PostgreSQL, Elastic Search. Used for real-time data and process optimization at PFM and ABinBev. Linux Ubuntu, OpenWRT, KaliLinux, Raspbian, Linux and Windows command line used on Fogsphere. Docker containers.
- **Network** MQTT EMQX Broker, Industrial protocols, OPC – UA , OPC – DA, Profibus, Profinet, PCCC, Modbus TCP, Modbus RTU. Teltonika gateway configuration, VPN Configuration.
- **PLC Programming.** Good command of Siemens, Tia portal, Intermadiate with Allen Bradlley, ABB and Omron.
- **Software** SAP R3 Production, Pawer BI management, Office Suite,
- **Mechanical Design**. Solidworks, Cura for 3D printing.

Soft Skills

- Adaptability, Lean Problem-Solving methodologies, Responsibility, Reliability Centered Maintenance, Avid Learner, Project Management, Teaching.
- Lean & Agile Principles: Applied Lean Six Sigma methodology and Agile Project Management in maintenance and IIOT projects. Maintenance and production KPIs and budgets, optimized processes using RCM principles, and supported agile project execution.

Languages

- Spanish (native) English (fluent), Portuguese (basic).