Filippo Salmoiraghi
Plant Software & System Analysis Manager
Monza, Italy | filippo.salmoiraghi@gmail.com | fsalmoir.github.io

Professional Summary

Engineering leader with over **8 years of experience** in **software development**, **system analysis**, and **digital innovation** for **industrial automation**. Currently driving **software strategy** and **plant-level integration** at Salmoiraghi S.p.A., with expertise in **automation systems**, **AI applications**, and **industrial platform integration**. Thanks to combination of strong **technical insight** with **strategic thinking**, I am able to engage directly with stakeholders—including customers—to align solutions with operational needs. Skilled in **API design**, **network architecture**, and **dashboarding** for real-time data analytics.

Core Competencies

- Technical Leadership & Team Management
- Plant Software Architecture & System Integration
- Industrial Automation & AGV Fleet Management
- AI Applications: Computer Vision & Deep Learning
- API Development & Network Design
- Grafana Dashboarding & Data Visualization
- Software Development: Python, Simulation, Open Source
- Agile Project Execution & Strategic Planning
- ERP/MES Interface Development
- Customer Interaction & Solution Definition
- Digital Transformation & IoT Ecosystems

Professional Experience

Plant Software & System Analysis Manager

Salmoiraghi Automatic Handling S.p.A. | 2016 – Present

- Lead software development and system integration for industrial automation systems deployed globally.
- Direct supervision of technical teams in development, testing, and on-site commissioning.
- Manage both internal developers and external software houses, coordinating efforts of up to several dozen professionals working on integrated solutions.
- Serve as a first-line technical contact for customers, collaborating closely to define functionalities, recommend optimal solutions, and ensure alignment with business goals.
- Designed system-level network architectures and developed robust RESTful APIs to enable seamless communication across distributed industrial platforms.
- Developed and evolved AGV Fleet Manager platform, coordinating fleet supervision, traffic control, and ERP/MES system integration.
- Built advanced monitoring and analytics dashboards using Grafana for real-time plant data visualization and KPI tracking.
- Introduced AI-powered automation capabilities including people detection and quality control using deep learning and computer vision.

- Interface with plant systems (PLCs, safety controllers) and manage large-scale technical project timelines, budgets, and execution.

Research Fellow
SISSA (International School for Advanced Studies) | *2014 – 2016*

- Contributed to European research projects in shape design, model order reduction, and computational fluid dynamics.
- Designed and co-developed open source libraries **PyGeM** (geometric morphing) and **EZyRB** (model reduction).
- Performed simulations integrating OpenFOAM, Matlab, and custom solvers for industrial applications.

Internship (M.Sc. Thesis)
SISSA mathLab | *2013 – 2014*

- Focus on CFD, shape parametrization, reduced models, and isogeometric analysis.

Education

Master in Digital Innovation Management – 108/110
MIP, Politecnico di Milano Business School | 2017 – 2019

M.Sc. in Aeronautical Engineering – 110/110
Politecnico di Milano | 2011 – 2014

B.Sc. in Aerospace Engineering – 110/110
Politecnico di Milano | 2008 – 2011

Master in High Performance Computing (Pilot Program)
ICTP, Trieste | 2013

Certifications

- OT Networking and Security (2021)
- Deep Learning Fundamentals with Keras (2020)
- Computer Vision with Watson & OpenCV (2020)
- TOEIC C1 English (2013)

Key Projects

AGV Fleet Manager
Supervision and control platform for vehicle/machine fleets integrated with plant-level systems (PLCs) and business tools (ERP, MES).

AI-Powered Automation
Deep learning applications in people detection, quality control, and autonomous alignment.

Network & API Design
Architected plant-level network structures and developed API layers for seamless system-to-system communication and remote monitoring.

Grafana-Based Dashboards
Designed and implemented advanced Grafana dashboards for real-time system status, analytics, and operational insights.

PyGeM
Open source Python library for complex geometry morphing and FFD-based shape parametrization.

EZyRB
Library for reduced-order modeling using POD and barycentric interpolation; interacts with multiple simulation formats.

Publications & Speaking

- Multiple publications on geometric modeling, CFD, and reduced-order methods (2014–2018)
- Speaker at SIMAI Biannual Congress & MoRePaS 2015
- Co-advisor, M.Sc. theses in Automation Engineering (2018–2020)
- Mentor, SISSA PHD4INNOVATING (2020)

Professional Engagement

- Member, MindSphere World Italia (2018–present)
- Course in Automatic Machine Safety and Standards, Sick AG (2022–2023)