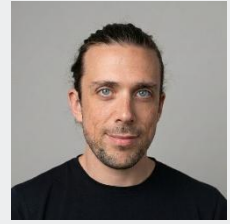


# Cattaneo Andrea

## Technical Manager Senior Software Engineer



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Capriolo BS, Italy

Italian nationality

### LANGUAGES

Native italian

Professional english B2

### LINKEDIN

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### SUMMARY

Technical Lead at Camozzi Digital & Mechatronics with over 12 years of experience in designing, developing, and coordinating complex software projects. My focus is on applying **SOLID principles** and key architectural **design patterns** to deliver scalable, maintainable, and extensible solutions. I manage the entire project lifecycle, from requirements analysis and specification definition to implementation, ensuring high software quality.

I have a strong background in **industrial automation**, with in-depth expertise in PLCs, drives, and integrating software with complex machinery. This allows me to understand the unique requirements of the sector and to develop high-performance, secure solutions by adopting cybersecurity best practices.

My technology stack includes **C#, .NET, REST APIs, Postgres, AMQP, and MQTT**, which I use to build modular systems based on microservices architectures. I leverage Docker and Kubernetes to create flexible and scalable application platforms, enhancing efficiency and enabling continuous deployment. On critical software components, I apply Test-Driven Development (TDD) with a pragmatic approach.

I am currently expanding my expertise in **Python**, exploring **Pandas, LangChain**, and **LangGraph** for developing advanced solutions in the field of Large Language Models (LLMs).

As a technical leader, I promote a collaborative and innovation-driven environment where knowledge sharing is crucial. I believe in continuous team training, adopting best development practices. I think that a robust software architecture is the foundation for a project success. I am highly problem-solving oriented and focused on process optimization. I'm fully committed to achieving the results in the defined deadlines, ensuring the high quality of the final product.

I structure the development process using the Agile methodology, leveraging Azure DevOps for its Kanban boards, backlog management, and sprint planning tools.

I act as the Technical Lead for certifications (**ISO 27001, ISO 42001**, and the **NIS2 Directive**) for the Camozzi Digital business unit, defining and adapting development processes to ensure the BU's technical regulatory compliance.

### TECHNICAL SKILLS

**Languages:** C#, Python

**Frameworks:** .NET Core, ASP.NET, WPF, Windows Forms

**Architectures:** Microservices, SOLID principles, Design Patterns, API RESTful

**Database:** Postgres, Microsoft SQL Server

**Caching:** Redis

**Messaging:** MQTT, AMQP

**DevOps, Tools:** GIT, Docker, Swagger, Azure DevOps

**Libraries:** Entity Framework, Dapper, AutoMapper

**Protocols:** Opc-UA, Opc-Xml-DA, Modbus, Profinet, Profibus

**Cloud services:** Microsoft Azure IoT Hub, Stream Analytics, SQL Server, Kubernetes cluster, Blob Storage.

**Industrial sector:** S7, TIA Portal, Siemens Simotion, WinCC Flexible

## PROFESSIONAL EXPERIENCE

### Camozzi Digital & Mechatronics - Brescia

2016 – present

- **Coordinate a team of 10 software developers**, providing technical guidance and managing project workflows.
- Designed and developed the **CyberMES Manufacturing Execution System (MES)**, now adopted group-wide by Camozzi. The system was built on **.NET Framework**, **WPF (MVVM)**, with a **Postgres** database and **RESTful APIs**.
- Designed and developed the **Digital Remote Maintenance (DRM) IIoT system** for collecting and processing data from industrial plants.
- Implemented a microservices architecture for data acquisition, featuring an abstraction layer that enabled simultaneous data consumption by both the MES and DRM systems.
- **Developed data collection drivers** for a wide range of machinery protocols and fieldbuses, including **Profinet**, **Modbus (RTU/TCP)**, **OPC UA**, **OPC-XML-DA**, **EtherCAT**, and **Ethernet/IP**.
- Designed and developed key modules and features for the MES, such as:
  - A product and raw material **traceability** system.
  - A **scheduling** module for managing production work phases.
  - A **ticketing** system to manage maintenance tasks and deadlines.
  - Integration with **SAP** and **Microsoft Dynamics ERP** systems.
- **Coordinated** the development activities of the **Camozzi Digital branch in Bosnia-Herzegovina** for the DRM web portal project.
- Led the **Dockerization** of all MES system services, containerizing the entire application suite for improved deployment and scalability.
- Integrated the **Astarte (by SECO) IoT platform** with the Camozzi DRM architecture.
- Defined the architecture and coordinated the development of the **Edge Data Orchestrator (EDO)**. This system extracts vibration data from **National Instruments** systems and **STMicroelectronics** sensors for processing directly on edge devices.
- Developed an **Angular web interface** for production data entry from textile machinery, integrating user input with real-time data collected via **MQTT**.
- Dockerized the MasterPrint thermal camera data acquisition system.
- Led the architectural design for the new **"Lumen" LLM portal**, introducing a **Kubernetes** cluster for running AI agents. This solution leverages **Python**, **LangChain**, and **LangGraph**.
- Migrated the entire DRM system from legacy Azure Web Service instances to a modern **Kubernetes cluster**, enhancing performance and reliability.

### Marzoli – Palazzolo S/O (BS)

2004 – 2016

- **PLC and Drive** Software Development for Textile Machinery
- Designed and developed "Yarnet," a textile machinery monitoring system, utilizing **C#**, **Postgres**, **WinForms**, **OPC XML-DA**, and **FTP**.
- Developed a vector drawing software in C# and the **.NET Compact Framework** to define speed profiles for spinning frames, including a feature to load the resulting recipe directly onto the machine.
- Created electrical schematics using **Eplan** software.
- Authored technical manuals and user documentation.

## FORMATION

**Bachelor's degree in Informatics – Università di Milano 2017-2021**

Cybersecurity specialization

Graduation 108/110

**Industrial technical diploma 1999-2004**

Electronics and telecommunications

## COURSES

- **Docker Mastery with Kubernetes**
- **Angular – The complete guide**
- **React – The complete guide**
- **Design patterns in C# and .NET**
- **ISO 27001**

## PATENTS

- **Apparatus for operating and programming a ring spinning frame**  
**EU 11743859.8 - 2314 · 5 jan 2012**  
**EU 11743859.8 - 2314**

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