

# Federico Mazzone

Pisa, Italy · mazzoni.federico1@gmail.com · [LinkedIn Profile](#) · [GitHub Portfolio](#)

**AI/ML Engineer.** Built my current company's first production-ready AI systems, including a customer-facing LLM chatbot serving 100+ daily users and internal automation tools, reducing information retrieval from days to hours. Experience in NLP, Machine Learning, and AWS. Strong research foundation (7 published papers).

## EXPERIENCE

### AI Engineer

May 2024 – Present

*Domotz*

*Pisa, Italy*

- **Built Domotz AI Stack:** Established AI roadmap and workflows, enabling rapid prototyping and deployment.
- **Chatbot:** Engineered a FastAPI RAG-based chatbot (with Qdrant, LangChain, PostgreSQL) deployed on AWS, driving +65% customer engagement and serving 100+ daily users. Implemented multiple knowledge bases and UIs.
- **Automation Tools:** Created prompt/model testing platforms and Slack-integrated assistants using LLMs and third-party APIs, reducing information retrieval time for the sales and marketing teams from days to hours.
- **Conversation Intelligence:** Implemented an LLM-powered analytics engine to extract actionable insights from customer conversations across Gong, Zendesk, and Salesforce, supporting revenue and customer success teams.
- **Classification:** Developed a zero-shot LLM classifier to identify common customer issues from unstructured text.
- **Anomaly Detection:** Combined traditional ML and LLM reasoning to detect network anomalies in time series.
- Coordinated with multiple stakeholders, and leveraged platforms such as AWS (deployment), BitBucket (codebase, code review), JIRA (Agile development), Zendesk (chatbot and classifier integration), and n8n (workflows).

### PhD Research Fellow in AI

Nov. 2022 – May 2024

*University of Pisa / National Research Council of Italy*

*Pisa, Italy*

- **Human-in-the-Loop:** Built a hybrid AI-human feedback loop system, boosting label accuracy up to 50%.
- **NLP:** Developed a library to quantify trust in social networks using embedding similarity and information density.
- **Algorithmic Fairness:** Designed algorithms to improve fairness in social networks and tabular ML models.
- Published 7 peer-reviewed articles ([Google Scholar](#)), managed multiple concurrent projects from concept to experimental validation, and gained expertise in analysing complex data.
- Conducted 1.5 years of PhD research, before transitioning to industry for practical applications of AI.

### Freelance Data Analyst

2022

*Self-Employed*

*Pisa, Italy*

- **Recommendation System:** Developed content-based and collaborative filtering recommendation systems.
- **Data Collection:** Created datasets by scraping Wikipedia and independent sites with Selenium/Beautiful Soup.
- **Bioinformatics:** Explored methods in *R* to identify potential biomarkers in Rett syndrome data.

## PERSONAL PROJECTS

**StockAgent:** Multi-agent AutoGen system for stock market analysis with a custom MCP yfinance server.

**HINTT:** Real-time OCR+translation tool sending screenshots to OpenAI/Ollama. Employed tkinter and mss.

**Simple Palette Maker:** An app to colorize black-and-white GameBoy palettes. Deployed on Streamlit. 1k+ users.

## SKILLS

**Languages:** Italian (Native), English (C1), German (A2)

**Programming Languages:** Python, JavaScript, SQL, R

**Tools/Platforms:** Git, Docker, JIRA, BitBucket, AWS (EC2, S3, CloudWatch), PostgreSQL, n8n, Zendesk, Salesforce

**Libraries:** FastAPI, LangChain, LangGraph, AutoGen, Scikit-Learn, PyTorch, HuggingFace, RiverML, Streamlit

## EDUCATION

### University of Southern Denmark

2023

*Summer School on Deep Learning*

*Odense, Denmark*

### University of Pisa

2020 – 2022

*Master's Degree in Digital Humanities (Data Science and NLP) — 110/110 with honours*

*Pisa, Italy*

- Relevant Exams: Data Mining, Social Network Analysis, Text Analytics, Distributed Data Analysis and Mining, Semantic Web, Laboratory of Data Science, Applied Linguistics, Computational Linguistics.

- Master's Thesis: *GenFair*. A synthetic data generation framework to reduce algorithmic bias.

### University of Pisa

2014 – 2017

*Bachelor's Degree in Philosophy — 110/110 with honours*

*Pisa, Italy*