# Francesco Sannicola — Machine Learning Engineer | Data Scientist

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## Work Experience

**Data Scientist II**     *Agile Lab* — Sep 2025 – Present
**Machine Learning Engineer — Senior Consultant**     *Links M&T* — Jan 2025 – Aug 2025

- Built a multi-tenant IoT energy forecasting platform for 3 enterprise clients with genetic algorithm–optimized models, real-time dashboards, and **MLOps** (experiment tracking, model registry, versioned datasets, CI/CD, rollback); enabled per-tenant customization and reduced peak energy costs, overall consumption, and $CO_2$ emissions via demand forecasting.

**Machine Learning Engineer — Consultant**     *Links M&T* — Mar 2023 – Dec 2024

- Integrated browsing, crawling, and **GraphRAG** into a ReAct agent–powered **chatbot** to unify on-premise and online sources, accelerating reporting and reducing preparation time by 15–30 minutes per session.
- Designed an **ESG reporting** solution underpinned by RAG and GPT-4o for automated KPI extraction and contextual retrieval from fund reports, reducing compliance costs and improving decision-making efficiency.
- Developed an NLP web application powered by **encoder-only** transformer models for contextual content recommendations with sub-5s latency, including speech-to-text and text-to-speech.
- Engineered **predictive maintenance** and remaining useful life estimation for EV charging stations, reducing maintenance costs by 30% and preventing unexpected failures via degradation models.
- Built a loan **default prediction** model achieving 80% accuracy with <2% false positives, enabling proactive flagging of high-risk accounts 3–6 months before potential delays.
- **Lecturer** in software development, databases, and Python at *Associazione Formazione*, and in anomaly detection and time series analysis at *Links Academy – AI & ML*, resulting in 7+ student job placements; practical lab materials available on *GitHub*.

**Artificial Intelligence and Data — Analyst**     *Deloitte* — Oct 2022 – Feb 2023

- Developed an **ETL** workflow with automated visualization of employee KPIs from survey data, transforming static reports into real-time dashboards that enhanced engagement, retention, and satisfaction monitoring for leadership decisions.

**AI Engineer and System Administrator — Intern**     *Intesa Sanpaolo* — Dec 2021 – May 2022

- Implemented real-time **time series forecasting** and anomaly detection, evolving from statistical baselines to recurrent networks and autoencoders, reducing infrastructure failure response time from minutes to seconds.

## Education

**Master's Degree in Computer Science — AI**     *University of Turin* — Jan 2020 – Apr 2022     GPA: 3.71/4

- Thesis: real-time time series **anomaly detection** using stats, machine learning, and deep learning (*thesis link*).
- Coursework: Neural Networks; Machine Learning; Natural Language Technologies; Advanced Software Architectures.
- 200h collabs: web pages development for freshman orientation, notes making and study support for student with disability.

**Bachelor's Degree in Computer Science**     *University of Bari* — Oct 2016 – Dec 2019     GPA: 4.00/4

- Coursework: Computer Architecture; Operating Systems; Algorithms; Databases; Software Engineering.
- Thesis: full-stack development of an indoor positioning system integrating a content-based **recommender system**.

## Skills

**Programming:** Python, Java, SQL, Bash
**ML/AI:** TensorFlow, Keras, PyTorch, scikit-learn, RAG, ReAct agents, LangChain, LangGraph, Transformers
**Data & Analytics:** Pandas, MS Excel, Qlik Sense, Qlik NPrinting
**Databases:** PostgreSQL, MongoDB, Redis, Milvus
**Cloud & DevOps:** AWS (EC2, S3, Lambda, SageMaker, Transcribe, Polly, SQS, SNS, RDS, EventBridge), GCP, Docker, Kubernetes, Git, GitLab CI/CD
**Frameworks & Tools:** FastAPI, Spring Boot, Flask, Bokeh, Keycloak

## Certifications

**AWS Certified Machine Learning**     Apr 2024
Credentials: *Credly profile*
*Courses: AWS ML Certification Preparation (Mar 2024), GCP Big Data and ML Fundamentals (May 2022), GCP Fundamentals: Core Infrastructure (Apr 2022)*

## Languages

Italian: Native | English: Professional Working Proficiency