

FEDERICO FIORIO

Data & Machine Learning Engineer

Milan, Italy

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[GitHub](#) | [LinkedIn](#) | [Portfolio](#) | [Leetcode](#)

Results-driven **Data & Machine Learning Engineer** with expertise in **cloud-based data engineering, AI, and big data**. Proven track record in designing and optimizing **high-performance data architectures** at scale. Passionate about **building resilient, scalable data solutions and deploying ML models** to drive business impact.

EXPERIENCE

Data & Machine Learning Engineer | Data Reply, Milan, Italy

May 2024 – Present

- **Enterprise-Scale Data Pipelines & Historical Data Optimization:** Designed **high-volume data ingestion pipelines** in Databricks, implementing **Medallion Architecture** for a fashion **luxury brand**. Replaced inefficient **JOIN-heavy historical tracking** with **SCD Type 2**, reducing query complexity and processing time by 80%, improving scalability, performance, and maintainability
- **Optimized Data Orchestration:** Migrated **Airflow DAGs** from legacy composer to **GCP Composer 2.x**, boosting **scheduling efficiency** by **10x** for a global manufacturing client
- **AI-Driven Document Retrieval:** Developed **RAG** pipelines for a leading bank, leveraging **vectorDB** and **OpenAI** embeddings, and custom document techniques
- **RAG-powered CloudFormation Template Generator:** Developed a UI-driven tool to generate AWS CloudFormation templates from natural language. The engine retrieves AWS formatting documentation to guarantee a well written YAML output
- **Real-Time Edge Detection System:** Engineered a car bonnet detection solution using fine-tuned **YOLO v11** on edge devices. Automated car wash safety protocols and customer compliance monitoring to mitigate improper usage

Data Engineer | Management Solutions, Milan, Italy

October 2023 - April 2024

- **IBM DataStage ETL optimization:** Developed ETL workflows with **IBM DataStage** and **SQL** for banking data warehouses, improving legacy **SQL**
- **Data Governance & Compliance:** Enforced **data governance** policies in cross-functional teams

Software Engineer Intern | Dilium, Milan, Italy

February 2021 - May 2021

- **GANs Research:** Conducted research on GANs for deepfake generation, emphasizing ethical considerations
- **Training & Awareness:** Led training sessions for employees on the emerging risks of these technologies, especially audio forgery

EDUCATION

- **MSc in Computer Science | University of Milan, Erasmus+ | University of Copenhagen** Grade: 108 / 110
- **BSc in Computer Science | University of Milan**

CERTIFICATIONS

- [All certifications](#): Databricks x2, Neo4j, GCP ML, AWS ML

PROJECTS

- [BoardGames RAG](#) | [Repo](#)
- [AlphaEvolve Mini – A simple copy of AlphaEvolve](#) | [Repo](#)
- [Thesis: Membership inference attacks on text-to-image models](#) | [Repo](#)
- [Competitive programming](#) | [training & contests](#)

SKILLS

- **Programming & Versioning:** Python, Java, C, SQL, Pyspark, GitHub, Bitbucket
- **Cloud & Deployment:** Google Cloud (Composer, BigQuery, IAM, Airflow, GCS), Microsoft Azure (Databricks, Azure Blobs, DevOps), Amazon Web Services (S3, Lambda, Step Functions, DynamoDB)
- **Data Engineering:** Databricks, Apache Spark, SQL, NoSQL (mongoDb), RDBMS (postgres, SQL server), IBM DataStage, Airflow
- **Operations:** Azure DevOps, Terraform, Docker
- **Machine Learning & AI:** Scikit-learn, Vector Databases (Qdrant), Langchain, OpenAI API
- **Agile & Scrum:** Jira
- **Others:** Streamlit, Unity