

Romeo Silvestri

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Summary

Applied Machine Learning Engineer with **2+ years of work experience** and a strong foundation in statistics and data science. Specializing in AI research, MLOps workflows, reinforcement learning and Generative AI, I design and deploy robust, scalable models. Eager to apply my technical expertise, passion, and research experience to build solutions that deliver real-world impact.

Skills

Programming Languages & Libraries: Python, R, SQL, FastAPI, Numpy, Optuna, Pandas, PySpark, PyTorch, Scikit-learn, TensorFlow

Tools & Databases: Airflow, Docker, Excel, Git, LangChain, MLflow, Power BI, Prefect, Spark, MongoDB, MySQL, PostgreSQL

Techniques: A/B Testing, Classification, Clustering, Regression, Statistics, Machine Learning, Deep Learning, Model Monitoring, Generative AI, Neural Networks, Natural Language Processing (NLP), Reinforcement Learning, Spatial Interpolation, Time Series

Work Experience

ML Engineer | Fondazione Bruno Kessler (FBK), Trento 12/2023 - Present

- Optimized ML pipelines in an advanced AI research and production environment using **Python, FastAPI, GitLab, LangGraph**, and **MLflow**, while collaborating closely with domain experts to address complex problems and streamline processes.
- Designed, tested, and deployed a Decision Support System (DSS) for irrigation, integrating heterogeneous data sources, including IoT sensors and weather data, to combine expert knowledge with field observations. The system is adopted by several companies and has enabled estimated annual savings of **€30,000** per area in terms of productivity, water, and electricity costs.
- Developed a multi-agent LLM-based chatbot for the European AI Factories project, leveraging pre-trained models and Retrieval-Augmented Generation (RAG) to support decision-making. The system provides real-time, data-driven advice on agriculture, integrating legal guidelines and technical best practices, with support for global and region-specific recommendation models.
- Built state-of-the-art time series forecasting models for sensor trends using ARIMA, XGBoost, and LSTM neural networks, achieving around **5%** prediction error through advanced feature engineering, hyperparameter tuning, and rigorous validation.

Data Scientist | Youbidata, Bologna 10/2023 - 11/2023

- Utilized **Python, PostgreSQL**, and **Power BI** for analytics and developed a centralized dashboard for financial monitoring.
- Managed an end-to-end consulting project to optimize financial operations of a company and design meaningful KPIs.

Statistician (Internship) | ISTAT, Rome 03/2023 - 08/2023

- Processed and analyzed national demographic data using **Excel, R**, and **SQL** to uncover socio-economic trends. The analysis outcomes were leveraged to create periodic reports, offering valuable insights to support strategic decisions.
- Evaluated the Austrian quality framework's suitability for the Italian Census, achieving statistically significant results.

University and Private Tutor | Sapienza University, Rome 09/2020 - 06/2022

- Supported the study of statistics-related subjects and managed IT services.

Education

M.Sc. in Statistics & Data Science | Sapienza University of Rome 11/2020 - 03/2023

Thesis: *Analyzing Forecasting Models for Real Estate Markets with a Case Study of Madrid Prices* Graduation Grade: 107/110

B.Sc. in Statistics | University of Padua 10/2017 - 11/2020

Thesis: *The Impact of Migration on Population Dynamics in Italian Provinces* Graduation Grade: 102/110

Publications

Smart Irrigation with Fuzzy Decision Support Systems in Trentino Vineyards MDPI Sensors

A Fuzzy Decision Support System to Optimize Irrigation Practices in Trentino Region CoDIT 2025

Comparative Analysis of Soil Moisture Interpolation Techniques in Apple Orchards of Trentino Region IEEE MetroAgriFor 2024

Additional Information

Certifications: Deep Learning (DeepLearning.AI), Google Data Analytics, IBM Data Science

Organizations: Italian Volunteers Blood Donation (AVIS), Mensa High IQ Society

Interests: Art, Chess, Mixed Martial Arts, Music, Poetry, Technology, Traveling

I authorize the processing of personal data contained in my curriculum vitae based on art. 13 GDPR 679/16.