

# 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.

Focused on AI research and development, specializing in advanced model design and deployment through MLOps workflows.

Currently seeking a **mid-level position** to apply my technical expertise and research experience in impactful projects.

## Skills

**Programming Languages & Libraries:** Python, R, SQL, Hugging Face, NumPy, 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, Data Mining, Data Visualization, Classification, Clustering, Regression, Statistics, Machine Learning, Deep Learning, Model Monitoring, Generative AI, Neural Networks, Natural Language Processing (NLP), 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, LangGraph, Prefect, MLflow, and GitLab**, while collaborating closely with experts to address agricultural challenges and the complex dynamics of the domain.
- Designed and tested a Decision Support System (DSS) for the IRRITRE project, integrating Internet of Things (IoT) and weather data with fuzzy logic to combine expert knowledge with field insights. Currently adopted by several agricultural consortia, the system has enabled estimated annual savings of **€30.000** per consortium in water and electricity costs.
- Developed a multi-agent LLM-based chatbot for the European IT4LIA AI Factory project, leveraging pre-trained models to assist farmers. The system provides real-time, data-driven advice on irrigation, integrating legal guidelines and technical practices, with support for global (AquaCrop) and region-specific recommendation models.
- Built multi-day 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 validation techniques.

### 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

CoDiT 2025

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

IEEE MetroAgriFor 2024

*Comparative Analysis of Soil Moisture Interpolation Techniques in Apple Orchards of Trentino Region*

## 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.