

Felipe Operti

AI Architect | AI Engineer

Turin, Italy

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in felipeoperti

I am an AI Architect and AI Engineer with deep expertise in NLP, Generative AI and scalable machine-learning systems. My work focuses on multi-agent systems, and I am particularly interested in Local AI and open-source models. I design and deploy end-to-end AI solutions, lead engineering teams and turn complex business challenges into reliable products. My experience spans insurance, banking, technology, agriculture and academic research. Before working in industry, I earned a PhD in Physics of Complex Systems, researching computational methods for socio-economic sciences. I am fluent in Italian, Portuguese, and English.

EMPLOYMENT

AI Architect

Reale Mutua

Turin, Italy

Oct 2025 - Present

I design and develop end-to-end AI and machine learning solutions aligned with business goals, while coordinating and supporting engineering teams.

Focus and technologies: AI solution architecture, NLP, Generative AI, Computer Vision, Machine Learning, PyTorch, Unsloth, team coordination, Databricks, and Azure.

Data Science Specialist

Reale Mutua

Turin, Italy

Jul 2022 - Oct 2025

I designed, developed, and deployed AI solutions on Azure, focusing on unstructured data, NLP, and deep learning.

Technologies: Generative AI, Azure Machine Learning, Databricks, LangGraph, LangChain, Python, Docker, PyTorch, Hugging Face, and spaCy.

Data Science Specialist | Machine Learning Engineer

Self-employed (FrAleAnalitica)

Turin, Italy

Jan 2021 - Present

FrAleAnalitica began as a project with a friend to apply machine learning and deep learning to agriculture, particularly beekeeping. As a technology consultant, freelance data scientist, and machine learning engineer, I develop, deploy, and maintain AI services for agricultural applications.

HonAI project FrAleAnalitica

Technologies: Azure, MLOps, Machine Learning, Deep Learning, FastAPI, Docker, and Python.

Data Scientist | Machine Learning Engineer

Inda - Interviewweb S.r.l. - Zucchetti Group

Turin, Italy

Mar 2021 - Jul 2022

I developed, deployed, and maintained AI solutions at INDA, focusing on NLP and deep learning.

Technologies: AWS EKS, AWS ECS, AWS Lambda, Amazon SageMaker, Python, Docker, Kubernetes, FastAPI, Elasticsearch, and MongoDB.

Data Science Specialist

Samsung SDS

São Paulo, Brazil

Nov 2020 - Mar 2021

I developed and deployed propensity, churn, sentiment analysis, and RFV models for CRM.

Technologies: Data lakes, HDFS, Brightics, Adobe Campaign, Python, Scala, Docker, Spark, and PySpark.

Data Scientist, DataLab

Santander Bank

São Paulo, Brazil

Aug 2019 - Jul 2020

I developed machine learning models to support personal-loan pricing.

Technologies: Data lakes, Hadoop, Cloudera, Python, Scala, SQL, Hive, Impala, Spark, PySpark, and Oracle.

Data Scientist

Santander Bank

São Paulo, Brazil

Dec 2018 - Aug 2019

I developed CRM models for propensity and churn prediction, as well as customer segmentation. I used supervised methods, including random forests, gradient boosting, logistic regression, and neural networks, and unsupervised

methods such as hierarchical clustering, k-means, and DBSCAN.

Technologies: Data lakes, Hadoop, Cloudera, Python, R, Scala, SQL, Java, shell scripting, Hive, Impala, Spark, PySpark, and Oracle.

EDUCATION

PhD in Physics (Complex Systems)

Federal University of Ceará

Thesis: *Computational analysis for socio-economic sciences.*

Fortaleza, Brazil

Feb 2015 - Dec 2018

Visiting PhD Researcher in Complex Systems

City College of New York

New York City, United States

Apr 2018 - Jun 2018

Visiting PhD Researcher in Complex Systems

Sapienza University of Rome

Rome, Italy

Apr 2017 - Sep 2017

MSc in Physics (Complex Systems)

Federal University of Ceará

Thesis: *Interpolation strategy based on Dynamic Time Warping.*

Fortaleza, Brazil

Jul 2014 - Jan 2015

BSc in Physics

University of Turin

Thesis: *Monte Carlo simulation of radiation from a CT scanner for radiation protection.*

Turin, Italy

Sep 2009 - Oct 2012

SKILLS

Machine learning and deep learning: LangGraph, LangChain, PyTorch, Unsloth, Hugging Face, OpenAI, Azure AI services, MCP, A2A, and spaCy.

MLOps: FastAPI, Kubernetes, Docker, Git, Typer, Pydantic, Poetry, uv, GitHub Actions, and Azure Pipelines.

Cloud: Azure, Azure Machine Learning, Azure DevOps, Azure Container Apps, Databricks, AWS ECS, AWS EKS, AWS Elastic Beanstalk, and Amazon SageMaker.

Data analysis: Python (Jupyter, pandas, NumPy, statsmodels), Scala, SQL, Spark, PySpark, Hadoop, Hive, Impala, and Excel.

Data visualization: Matplotlib, Seaborn, Plotly, Streamlit, Grafana, Gephi, and QGIS.

Databases and storage: MySQL, PostgreSQL, HDFS, Elasticsearch, and MongoDB.

Other programming languages: Java, C++, Bash, and Rust (learning).

Operating systems: Linux (Arch Linux, Debian, and Ubuntu), macOS, and Windows.

Languages: Italian (native), Portuguese (fluent), and English (fluent).

PUBLICATIONS

- Felipe G. Operti et al. Dynamics of racial segregation and gentrification in New York City. *Frontiers in Physics*. 2022.
- Felipe G. Operti et al. Dynamics in the Fitness-Income plane: Brazilian states vs World countries. *PLOS ONE*. 2018.
- Felipe G. Operti et al. The light pollution as a surrogate for urban population of the US cities. *Physica A*. 2018.