Vito Antonio Pagone

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EXPERIENCE

UBS **March 2024 – Present**
Data Scientist *Zurich, Switzerland*

- Work in the AI team's Execution Hub Quant, developing ML models for execution analytics across fixed income and equities, and maintaining the supporting Airflow pipelines.

IBM Research **November 2023 – January 2024**
Machine Learning Intern *Zurich, Switzerland*

- Implemented Physics-Informed ML methods integrating physical losses into IBM's climate models.

ETH Zurich **October 2023 – January 2024**
Machine Learning Researcher *Zurich, Switzerland*

- Developed Graph Physics-Informed Neural Networks (GPINNs) for improved field reconstruction accuracy.

ETH Zurich **February 2023 – September 2023**
Python Software Developer Research Assistant *Zurich, Switzerland*

- Created interactive educational tools and data visualization solutions with Python and Jupyter.

MAN Energy Solutions **September 2022 – March 2023**
Internship Trainee *Zurich, Switzerland*

- Built data-driven models to analyze experimental two-phase turbomachinery data and validated CFD simulations against published benchmarks.

Politecnico di Bari **February 2020 – July 2020**
Internship Trainee *Bari, Italy*

- Enhanced numerical analysis skills and software development proficiency through practical engineering projects.

PUBLICATIONS

Flow Reconstruction in Time-varying Geometries using Graph Neural Networks **November 2024**
arXiv preprint: https://arxiv.org/abs/2411.08764

- Applied Geometric Deep Learning for fluid dynamics, demonstrating improvements in flow prediction accuracy and computational efficiency.

EDUCATION

ETH Zurich **March 2021 – September 2023**
M.Sc. in Mechanical Engineering *Zurich, Switzerland*

- **Thesis**: Flow Reconstruction using Physics-Informed and Geometric Deep Learning

Politecnico di Bari **September 2017 – July 2020**
B.Sc. in Mechanical Engineering (Grade: 110/110) *Bari, Italy*

PROJECTS

OstuniHelper – AI Tourism Assistant **February 2025 – Present**
ostunihelper.it

- Built a full-stack tourism assistant using a RAG-based multilingual AI model, with a JavaScript frontend, Flask backend, and MySQL database.

Numerical Investigation of Momentum Injection for High Lift Wing **March 2022 – July 2022**
Semester Project at ETH Zurich

- Developed and validated CFD-based numerical models under supervision of Prof. Patrick Jenny, resulting in enhanced aerodynamic lift performance.

TECHNICAL SKILLS

Languages: Python, C++, SQL, JavaScript
ML/AI: PyTorch, TensorFlow, Scikit-learn, Deep Learning (Transformers, GNNs), Statistics & Optimization
Data & HPC: NumPy, Pandas, Jupyter, CUDA, Multi-GPU (PyTorch DDP)
Software: Docker, Git, Flask, REST APIs, Nginx/Gunicorn, Full-Stack Development