# Simone Fassio

*Antibes, France*

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## Personal Profile

Data Scientist with 2 years of hands-on leadership experience as Head of Software for the PoliTOcean student team. Currently pursuing a competitive double MSc in Data Science from EURECOM and Polytechnic University of Turin. Proven ability to architect end-to-end solutions, spanning from integrating data-driven algorithms in robotics and real-time computer vision to deploying scalable cloud data pipelines and agentic LLM systems. Published researcher in the field of deep learning with a focus on data-driven model analysis.

## Experiences

**PoliTOcean Student Team** — *Turin, Italy*

Software Engineer - Head of Software Team — *Sept 2023 - Jul 2025*

- Coordinated a team of 7, created comprehensive workflow and software documentation to enhance team efficiency and organization.
- Engineered a modular C++ application to process and manage real-time sensor data from a ROV, increasing sensor read frequency by 200%, achieving 100Hz command updates for automatic motor control, and implementing data logging to enable offline analysis.
- Architected and optimized a real-time video data pipeline, reducing bandwidth usage by 50% and cutting latency by 30%.

**SmartData - Polytechnic of Turin** — *Turin, Italy*

Research Intern - Paper publication — *Feb 2024 - Jun 2024*

- Engineered a deep learning pipeline using PyTorch to process large-scale meteorological datasets, training and evaluating U-Net architectures for probabilistic precipitation forecasting, with particular focus on probability calibration of predictions.
- Co-authored and published the research paper *"Deep Probability Segmentation: Are segmentation models probability estimators?"*.

**Self-employed** — *Turin, Italy*

Freelance Software Engineer — *Sept 2024 - Present*

- Provided consultancy services for private clients to install and configure AgOpenGPS, an open-source autonomous guidance system.
- Developed custom features for AgOpenGPS and provided technical consulting to companies, leading to enhanced system functionality based on my open-source contributions.

## Personal Projects

**MCP Servers for Agentic Retrieval over Knowledge Graphs** — *Sophia-Antipolis, France*

Python, MCP, LLMs, RDF Graph, SPARQL, LangChain, Prompt Engineering — *Sept 2025 - Present*

- Developed a Python-based server to create a data access layer for a knowledge graph, exposing a SPARQL endpoint to enable querying and retrieval of structured RDF data by LLM agents.

**6D pose estimation (Deep Learning)** — *Turin, Italy*

Python, PyTorch, Bash, GitHub, YOLO, CNN, GNN — *Mar 2025 - Jun 2025*

- Built an end-to-end computer vision pipeline to improve 6D pose estimation. Engineered a workflow that included data ingestion, object detection with YOLO, feature extraction and a custom Graph Neural Network implementation, leading to a 12% improvement in accuracy.

**Contribution to AgOpenGPS (Open source project)** — *Turin, Italy*

C, Python, Sensor Fusion, Git — *Sept 2024 - Jul 2025*

- Developed and tested an algorithm from scratch to estimate the angle of the wheels of a moving tractor in rough environments. By fusing GNSS-based data with digital encoder, the solution eliminates the need for a dedicated sensor—simplifying installation and reducing the costs.
- Designed a new PCB for the tractor module, reducing its size by 50%, added support for new generation GNNS receiver.

## Education

**EURECOM** — *Sophia-Antipolis, France*

MSc Computer Science, Data Science track, Double degree program — *Sept 2025 - Sept 2026 (expected)*

- Relevant courses: Distributed architecture, Cloud computing, Optimization, Reinforment learning, Image processing.

**Polytechnic University of Turin** — *Turin, Italy*

Master's Degree in Data Science and Engineering - GPA 3.8/4 — *Sept 2024 - Sept 2025*

- Relevant courses: Machine learning and deep learning, Data management, Distributed architecture and cloud computing, Optimization , Computational linear algebra, Statistics in ML.

**Polytechnic University of Turin** — *Turin, Italy*

Bachelor's Degree in Computer Engineering - GPA 3.73/4 — *Sept 2021 - Jul 2024*

- Gained solid foundations in computer science, algorithms, data structures, software engineering, mathematics, statistics and electronics.
- Relevant courses: Algorithm and Data Structures, Computer Architecture, Databases, Operating Systems and Object-Oriented Programming.

## Skills

**Programming & ML** — Python, C/C++, Java, PyTorch, Scikit-learn

**Data & Big Data** — Spark, Hadoop, SQL, MongoDB, Pandas, NumPy, RDF, LangChain, Prompt Engineering

**Tools & DevOps** — Git, Docker, Linux, Shell (Bash/Zsh), GitHub Actions

**Languages** — English (C1), Italian (Native), French (Beginner)