

# Raffaele Martone

AI Engineer | Machine Learning Specialist

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Web-Site:martons00.github.io/portfolioMartons| github.com/Martons00

## Summary

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Computer Engineering MSc student specializing in Artificial Intelligence and Data Analytics. Analytical engineer with a dancer's creative edge, blending rigorous technical skills in Python, PyTorch, and ML frameworks with innovative problem-solving from Apple Developer Academy and hackathon wins. Driven by the pursuit of what's beyond the horizon—seeking dynamic environments to experiment with emerging AI technologies and redefine possibilities.

## Education

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| <b>Politecnico di Torino</b> , MSc in Computer Engineering<br>Artificial Intelligence and Data Analytics   | 2023-09 – 2026-03 |
| <b>Apple Developer Academy @Unina Federico II</b> , Diploma<br>The Apple Developer Academy is an intense and highly selective training program offered by Apple. | 2022-09 – 2023-06 |
| <b>Università Federico II di Napoli</b> , BSc in Computer Engineering<br>Computer Engineering  | 2019-09 – 2023-03 |
| • Awards and Honors: Winner of a Scholarship for Outstanding Candidates  |                   |

## Experience

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| <b>Intern (Research Laboratory)</b> , Inria - Université Cote D'Azur<br>Research Engineer - Institut national de recherche en sciences et technologies du numérique.<br>Organoids Image Classification using Vision Transformers.   | 2025-09 – 2026-02 |
| <b>Undergraduate Research Opportunities Programme</b> , UROP@PoliTo<br>Research experience working under the direct supervision of PoliTo.<br>Trained Deep Learning Models for Keyword Spotting and optimization.   | 2025-03 – 2025-09 |
| <b>Student Tech Clash 2025</b><br>Winner Student Tech Clash - Reply x Politecnico di Torino.<br>The Hackathon for University Students about AI Agents is coming to University of Manchester, Politecnico di Torino, Centrale Supelec (DSVH), RWTH Aachen, Politecnico di Milano, Bocconi and Sapienza.    | 2024-10 – 2024-10 |
| <b>The Big Hack 2023</b><br>Winner of "STMicroelectronics – OneStepAhead: Il tuo coach personale per il benessere!"<br>Hackathon provided by Regione Campania, Maker Faire Rome - The European Edition con Sviluppo Campania, Università degli studi di Napoli "Federico II" and Apple Developer Academy. | 2023-06 – 2023-06 |
| <b>B-Future Challenge</b><br>Top 3.<br>Hackathon provided by BOOM Knowledge Hub by CRIF, Regione Emilia-Romagna.  | 2024-11 – 2024-11 |
| <b>Italian Tech Week</b> , Torino, IT<br>Volunteer, Backstage Assistant.  | 2024-09 – 2024-09 |

## Personal Projects

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### Semi-Supervised Learning for Mesothelioma Classification

Implemented semi-supervised learning techniques for mesothelioma disease classification using medical imaging data. Addresses the challenge of limited labeled data in medical diagnosis through advanced machine learning methodologies

- Tools Used: Python, PyTorch, Semi-Supervised Learning, Medical Image Analysis

## **Organoid Image Classification Using Deep Learning**

Comprehensive deep learning framework for 3D medical image classification of organoids using state-of-the-art transformer and CNN architectures

- Tools Used: Python, Machine Learning, Deep Learning, Transformers, PyTorch, Medical Imaging

## **PolitoSbobinatore**

An AI model chain designed to simplify note taking at university by automating transcription and organization processes

- Tools Used: Python, Jupyter Notebook, PyTorch, Selenium Web-Scraper, OpenAI-Whisper, Hugging Face

## **Real-Time Domain Adaptation for Semantic Segmentation**

Investigated domain adaptation techniques for semantic segmentation using state-of-the-art models like DeepLabv3, PIDNet, and MSNet on the LostAndFound dataset. Explored methods such as data augmentation, adversarial learning, DACS, PEM, and CycleGAN to tackle domain shifts between urban and rural environments

- Tools Used: Python, Jupyter Notebook, PyTorch, Google Colab

## **Model Depth Conversion for Autonomous Vehicles**

Developed a model to convert depth heatmaps to depth values in meters for MAN TruckScenes dataset. Implements processing pipeline for autonomous vehicle perception systems

- Tools Used: Python, PyTorch, Computer Vision, 3D Data Processing

## **Nostos: Excursion Navigation Application**

An application designed to help excursionists get back to their starting point when lost during hiking or outdoor sessions. Implements navigation algorithms to compute optimal return routes

- Tools Used: Python, Location Services, Algorithm Design

## **Context-Aware GUI Testing for Mobile Applications using LLMs**

Developed a framework leveraging Large Language Models for intelligent GUI testing of mobile applications. Utilizes context awareness to improve test case generation and automated testing of user interfaces

- Tools Used: Python, LLMs, Mobile Testing, Natural Language Processing

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## **Technical Skills**

**Programming Languages:** Python, C, C++, JavaScript, Java, Swift, Rust

**Frameworks and Technologies:** PyTorch, Hugging Face, Transformers, NumPy, Jupyter Notebook, Git/GitHub, Matplotlib, Linux, Selenium, React, Node.js, TypeScript, HTML/CSS, Figma, MySQL, Android Studio, Apache Hadoop, FreeRTOS, Raspberry Pi, Arduino, STM32, Jest, Oracle

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## **Languages**

**Italian:** Native speaker

**English:** IELTS B2 (Upper Intermediate) – 6.5 (2023)

**French:** B1 level (no formal certification)

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## **Personal Qualities & Interests**

### **Professional Strengths:**

- Analytical engineer with dancer's creative intuition
- Thrives in international teams, bridging cultural gaps
- Delivers innovative solutions under pressure
- Continuous learner, always chasing the next challenge

### **Life Outside Code:**

- 15+ years professional ballet dancer & fire performer
- Formula 1 strategist & motorsport technology enthusiast
- Anime scholar (Hunter x Hunter foremost), football tactician
- Italian cooking artisan, crochet craftsman, gym regular