Massimo Perfetti

Machine Learning / Computer Vision Engineer

(+39) 3516811964 | m.perfetti@student.tudelft.nl | GitHub: MassimoPerfetti | in: mperfetti4

EDUCATION

TU Delft - Delft University of Technology   **Delft, Netherlands**
Master's in Mechanical Engineering, EFPT Track   Sep. 2024 - Sep. 2026
- **Relevant Coursework:** Deep Learning, Machine Learning for Systems and Control, Intelligent Vehicles/Machine Perception, Machine Learning Workflows for Digital Energy Systems, Bayesian Learning, Measurement Technology, Reinforcement Learning, Generative Modelling (starts in April), Machine Learning for Graph Data (starts in April).

EPFL - Swiss Federal Institute of Technology   **Lausanne, Switzerland**
Exchange Semester   Sep. 2023 - Feb. 2024
- **Relevant Coursework:** Introduction to Optimization & Operations Research, Product Development.

Politecnico di Torino   **Turin, Italy**
Bachelor in Mechanical Engineering   Sep. 2021 - Jul. 2024
- **Final GPA:** 28.1/30, top 3% of students.
- **Thesis:** "Impact of material change on thermo-structural behavior of F-class gas turbine discs".
- **Relevant Coursework:** Statistics and probability, Calculus, Linear Algebra, Computer Science, Applied Mechanics, Optimization for Problem Solving.

ACADEMIC PROJECTS

Pedestrian Classifier for Intelligent Vehicles   **Delft, Netherlands**
Academic Project in Deep Learning and Computer Vision   Oct. 2024 – Feb. 2025
- **Feature Engineering:** CNN based classifier for detection, Pattern Recognition, Filtering, Localization, Motion planning.
- **Skills:** Python, PyTorch, Numpy, Scifit, Pandas, Advanced Kalman Filters, Particle Filters, k3D, Features selection.

Enhancing Dubins dynamics with FNNs   **Delft, Netherlands**
Academic Project in Machine Learning and Deep Learning   Oct. 2024 – Feb. 2025
- **Research aim:** Improving trajectory predictions by augmenting the dataset through synthetic data generation..
- **Model**: Dataset generation and Residual Networks-based architecture (ResNets) to improve and predict trajectory modeling with neural networks.

Computer Vision for Gripper End Effector   **Lausanne, Switzerland**
Academic Project in Computer Vision   Sep. 2023 – Feb. 2024
- **Project aim:** Designed and built a end effector in an international team, integrating Fusion 360 for CAD, 3D printing, Arduino-based electronics, and YOLOv8-trained computer vision for object detection and adaptive grasping.

Challenge Sea and Green Transition   **Turin, Italy**
Academic Project in Machine Learning and Optimization research   Mar. 2023 – Jun. 2023
- **Research aim:** Optimized energy self-sufficiency for Giglio Island, Tuscany, by assessing the efficiency of renewable sources (photovoltaic, offshore wind, and wave energy converters) using predictive models such as linear regression and random forest to identify the optimal energy mix.

WORK EXPERIENCE

Ethos Energy SpA   **Turin, Italy**
Thesis Internship   Mar. 2024 – Jul. 2024
- **Project**: Simulated rotor assembly of an Fr-1500 turbine, focusing on material optimization.
- Conducted analyses of temperatures, deformations, and stresses to identify the optimal material for the turbine disc construction.

Honours & Awards

> **Percorso Intraprendenti - PoliTO Honours Program** (reserved to top 240 students)   Sep. 2021 - Jul. 2024
> **HPM - TU Delft Honours Program** (reserved to 100 MSc students every year)   Feb. 2025 - Present

SKILLS & INTERESTS

Languages: English (fluent), Italian (native), French (novice).
Technical Skills: Python (libraries: k3D, PyTorch, Pandas, YOLOv, Scikit Learn), LaTeX, Matlab, Microsoft 365.
Interests: NBA, Chess, Machine Learning, Logic games, Reading, Fluid dynamics, CFD, Leetcode, Kaggle.