Massimo Perfetti

Machine Learning / Computer Vision Engineer
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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, Reinforcement Learning, Generative Modelling, Machine Learning for Graph Data, Deep Reinforcement Learning.

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

GENESIS-Embodied-AI based Neural Networks for Flood Modelling **Delft, Netherlands**
Honours Programme Project in Deep Learning Apr. 2025 – Present

- **Research aim:** Fine-tuning of foundational AI models for physics-informed flood prediction under the supervision of Prof. Riccardo Taormina, with a focus on leveraging Genesis and similar multimodal architectures for spatio-temporal flood modelling.

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.

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

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

SKILLS & INTERESTS

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