



# Matteo

# Carpentieri

Computer Engineer-AI & Robotics

## MY CONTACT

- matteo.carpentieri22@gmail.com
- Padova, Italy

## LANGUAGES

- Italian (Mother language)
- English (B2)
- French (A2)

## SKILLS

- Team work
- Decision making
- Communication
- Adaptability

## EDUCATION

### Master Degree in Computer Engineering

#### ● Specialization : Artificial Intelligence and Robotics

University of Padua (IT)

2022-2025

Thesis: Deep Learning-based Defect Type Classification of Carbon Fiber Composites in Photometric Stereo Feature Modalities

#### ● Bachelor Degree in Computer Engineering

University of Padua (IT)

2019-2022

Thesis: Neural Networks: General Structure and Feed-Forward Models

#### ● High School Graduation in Computer Science and Telecommunications

ITI Francesco Severi (IT)

2014-2019

## ABOUT ME

I am a young computer engineer specializing in Artificial Intelligence and Robotics. I enjoy working in teams and tackling complex challenges, always looking for innovative solutions. My passions are football and fashion.

## WORK EXPERIENCE

### Database Development

1 February 2018 - 1 March 2018

Office Information Technologies, Montegrotto Terme (IT)

Creating relational tables, populating them and writing queries

### Web Development

17 March 2023 - 31 July 2023

Meteos Informatica, San Giorgio In Bosco (IT)

Web application for managing Transport Companies, Shipping, and Logistics using Visual Basic (VB.NET) with Visual Studio

### Machine Learning Development

1 October 2024 - 31 December 2024

Profactor, Steyr (AT)

Developed and trained Deep Learning models to classify defects in carbon fiber composites using photometric stereo

### Consultant - Generative AI and web development

9 September 2025 - Present

Laife Reply, Padova (IT)

Working on the Punto di Accoglienza project for IOV (Istituto Oncologico Veneto), developing a web application that integrates an AI-powered chatbot to support General Practitioners in clinical decision pathways.

## KNOWLEDGE

### Programming languages:

- Java
- C and C++
- Python

### Database

- SQL
- Conceptual model design

### Web development

- HTML
- CSS
- JavaScript
- PHP

### Big data computing

- MapReduce
- Apace Spark
- Clustering
- Streaming

### Artificial Intelligence

- Natural Language Processing
- Machine Learning
- Deep Learning
- Computer vision and 3d data
- Generative AI: LLMs, Prompt Engineering, Fine-Tuning
- RAG Systems & LangChain

### Robotics

- Basic principles of industrial robotics
- Autonomous robotics

# ACADEMIC PROJECTS

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## AI for Food Waste Reduction and Quality Control

Research paper

## Comparative Analysis Between ML Models and GCNN For Accident Severity Classification In London Intersections

Developed a comparative analysis of ML models (SVM, Random Forest, K-NN) and Graph Convolutional Networks for accident severity classification using road and accident data from London. Optimized dataset processing with BallTree for efficient proximity searches.

## SAGRONE

Web application for ordering dishes at local festivals

## Sport video analysis

computer vision systems to identify and track players on sports teams and generate semantic information about the game, such as understanding the boundaries of the playing field and the context of a game action

## 3D Computer Vision and Point Cloud Processing

Implemented algorithms for stereo matching, structure from motion, point cloud registration, and deep learning-based 3D descriptors

## Autonomous Robot Navigation and Obstacle Detection

Developed a ROS-based navigation system for the Tiago robot, implementing an Action Client/Server architecture to autonomously move in a dynamic environment while detecting and mapping obstacles using LiDAR sensors

## Robotic Manipulation and Object Delivery

Implemented a pick-and-place system for an assistive robot using ROS and Movelt, integrating AprilTag object detection and motion planning for autonomous fetching and placement of objects in a simulated environment