GIORGIA CARBONI

Computer Vision Engineer

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EDUCATION

Master Degree in Computer Science and AI

Università degli Studi di Milano
2022 - 2026

Bachelor's Degree in Computer Science

Università degli Studi di Ferrara
2018 – 2021

SKILLS

AI
Pandas, Numpy, Sklearn, **PyTorch**, Hugging Face Transformers, Large Multimodal Models (LMMs), Distributed Training (**torchrun**), GPU Memory Optimization, OpenCV, MediaPipe

3D & VR
CUDA, open3D, Unity, VR systems,

Databases
PostgreSQL + PGVector

Web & APIs
AWS (basic concepts), FastAPI, Gradio, Docker, Unix Shell, Vim
Colab

Programming Languages

Proficient in
C, C#, Python

Familiar with
C++, Java, Bash

Languages Spoken

Italian (native)
English (C1 in reading, listening, speaking)

INTERESTS

Body Building
Gaming
Writing
Digital Art

PROFILE

Result-driven engineer passionate about Artificial Intelligence (AI) and Machine Learning (ML). Hands-on experience in signal noise reduction and classification, feature-based ML predictions, creation of autonomous AI agents and ingestion of multimodal data for responsive retrieval-augmented generation systems.

EXPERIENCE

Computer Vision R&D Engineer

Fifth Ingenium | Milan, May 2025 - December 2025

- **Fine-tuned** Llama-Mesh on custom datasets using a single NVIDIA RTX 4090, enhancing model efficiency.
- Containerized AI services with **Docker**; developed reproducible Gradio interfaces for text-to-mesh, image-to-mesh, and surface-modification apps.
- Implemented histogram-based compression with Open3D to optimize mesh workload and reduce GPU memory usage.
- Built a scalable **MLOps pipeline** for a mixed/virtual reality assistant using FastAPI, LangChain, and PGVector; ingested multimodal data (PDFs, images, 3D objects) into a **vector database** for low-latency **RAG** queries.
- Implemented 3D data processing workflows, including histogram-based mesh compression with **Open3D** and the extraction of camera intrinsics/extrinsics from .ply scenes for integration with **Meta Locate3D**

Engineer

DXC Technology | April 2022 - April 2023

- Deployed and manage services (e.g., Tomcat, JBoss) on Linux/Ubuntu virtual machines, ensuring efficient operation and hosting.
- Configured and maintained secure VPN connections, including certificate creation and patch management, to enable consistent service access.
- Handled incident management and resolving service issues to maintain operational continuity.
- Executed Windows Server migrations, ensuring minimal disruption to running

MAIN PROJECTS

Point cloud acquisition using sensor

C++ | 2021
Worked with the Occipital Structure Core sensor and implemented a custom application in C++ to acquire and process point cloud data.

Tree Predictor for binary classification

Python | github.com/Giorgia01carboni/decision-tree-for-binary-classification
I implemented a tree predictor from scratch, utilizing single-feature binary tests at each node, and applied splitting criteria such as the Gini index and scaled entropy. It was used as a binary classification system to identify poisonous mushrooms.

Ping Pong AI

C# | github.com/Giorgia01carboni/pAIngPong
I used Unity's ML-Agents toolkit to develop a project where an AI agent learns to play Ping Pong using reinforcement learning.

Atrial Fibrillation Detector

Python | github.com/Giorgia01carboni/atrial-fibrillation-detector
Implemented the algorithm described in the paper "Low-complexity detection of atrial fibrillation in continuous long-term monitoring". Applied signal preprocessing techniques to ECG data.