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CONTACTS

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Firenze, Italy

ABOUT ME

I'm an engineer deeply passionate about AI, with a particular focus on Computer Vision, Neuromorphic Vision, and Reinforcement Learning.
Throughout my academic journey, I've worked on various projects in these fields that fueled my curiosity for their potential applications in real scenarios.

WORK INTERESTS

What excites me most is the potential to apply my learned skills in areas that can make a real difference in society. I'm particularly drawn to using AI for impactful contributions across fields with strong social, ethical, and human significance such as biomedicine, climate and environmental research, humanitarian aid, and the preservation of cultural heritage. I'm passionate about advancing digital safety and integrity, combating misinformation, online fraud, and cybersecurity threats. I'm excited by AI's broad transformative potential across diverse sectors and remain eager to explore new applications. My goal is to bring my enthusiasm and technical skills to projects and visions that create positive, tangible impact on the real world.

PERSONAL

Gender: male (he/him)
Birth: dec 3rd, 1996
Nationality: italian

OTHER INTERESTS

Documentary/Sports Photographer
Drone Operator
Content Creator and Video Editor
Hiker and Runner

GIOVANNI COLOMBO

MSC IN ARTIFICIAL INTELLIGENCE
UNIVERSITY OF FLORENCE, ITALY

DEGREES

Telecommunications Engineering 2015-2021
BSc. - University of Brescia (UniBS), Italy
Graduated: Feb 17th, 2021 (92/110)

Artificial Intelligence 2021-2025
MSc. - University of Florence (UniFI), Italy
Graduated: Apr 8th, 2025 (110/110)

PROJECTS

COVID-19 Detection through vocal analysis *(bachelor's thesis)*
Conducted during the pandemic, the thesis illustrates a rudimentary, yet rapid and promising method for COVID-19 detection using a simple device from the comfort of one's home, through audio analysis of patients' voices. Various Machine Learning algorithms were compared and evaluated. (*MATLAB, Classification Learner App*)

Protein Secondary Structure Prediction with Transformers
Development of a Transformer model for predicting protein Secondary Structure from Primary Structure, utilizing the CullPDB dataset. Relative Embeddings and other features and training techniques were employed and evaluated. (*Python, PyTorch, Weights&Biases*)

Autonomous Platoon Control with Reinforcement Learning
Development of a simplified automotive environment and implementation of a Deep Q-Learning algorithm to gain practical experience in applied Deep Reinforcement Learning. (*Python, PyTorch*)

CRATE: studying White-Box Transformers
Reproduction and validation of results achieved by a novel Transformer-based architecture characterized by its use of exclusively mathematically interpretable operations. Performances were evaluated on Image Classification, Image Completion via MAE, Self-Supervised Learning, and Pre-Training of Language Models. (*Python, PyTorch, Weights&Biases*)

Parallel Computing with OpenMP and CUDA
Development of two programs to explore fundamental concepts of Parallel Computing, such as speedup and efficiency, using the OpenMP and CUDA frameworks. A simplified Image Renderer and a Histogram Equalizer were implemented. (*C++, OpenMP, CUDA*)

Flying Object Detection with Event Cameras *(master's thesis)*
The thesis investigates the cutting-edge field of Neuromorphic Vision, focusing on the development of a model for classifying objects such as drones and flying animals. Potential applications extend to critical security domains, such as surveillance and monitoring of sensitive areas. Paper accepted to the CVPR 2025 Workshop on Event Cameras. (*Python, PyTorch, MetaVision SDK*)

LANGUAGES

Italian C2 *mother tongue*
English C1 *advanced*

SKILLS

Problem Solving
Critical Thinking
Creativity
Teamwork
Team Coordination
Emotional Intelligence
Work Autonomy
Flexibility
Detail Oriented
Proactivity