

Alessandro Lorenzi

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Education

Master Degree in Artificial Intelligence Systems Sept 2023 – current
University of Trento, Italy

Bachelor Degree in Computer Science *University of Trento, Italy* Sept 2020 – July 2023

Experience

IT Consultant and Developer Trento, Italy
Dream S.R.L. Sept 2022 – Sept 2024

- Supporting business consulting with a focus on digital transformation projects, creation of custom management solutions tailored to client needs and modernization of existing process.
- Work primarily on the development of software systems and customer applications.

Recent Projects

Robotic Planning in Health Care Scenario

- Model and solve planning problems in a healthcare scenario using PDDL (Planning Domain Definition Language) and HDDL (Hierarchical Domain Definition Language)
- Integrate a temporal planning model within a robotic framework leveraging the PlanSys2 infrastructure in ROS2 based on C++.

Motion Capturing ([GitHub](#) 🔗)

- Create dynamic 3D models of skeletons and rigid bodies from motion data.
- Mitigate flickering and inconsistencies in motion caused by marker loss.
- Tools used: Python, Unreal Engine 5, and Blender.

Improving Models with Test-Time Augmentation ([GitHub](#) 🔗)

- Implement and apply Test-Time Augmentation (TTA) techniques for enhancing model robustness and improving accuracy during inference.
- Evaluated model performance with and without TTA, demonstrating improved accuracy and stability.
- Tools used: Python, PyTorch, TensorFlow.

Job-shop scheduling (*Industrial AI Challenge. Client company: LeMur*)

- Optimize job scheduling and machine assignments, addressing constraints like machine compatibility, maintenance, operator shifts for real company scenario.
- Incorporate evolutionary algorithms for refining solutions, including handling overlapping operations.
- Tools used: Python, Google's OR-Tools, and advanced algorithmic frameworks.

CLIP on Low-Resource Vision ([GitHub](#) 🔗)

- Address class imbalance in low-resource datasets in context of few-shot learning.
- Evaluate and experiment advanced fine-tuning techniques to handle the long-tail data distribution issue, through complex metrics and visualization analysis.

Languages

Italian Native speaker
English Fluent