

Sebastiano Monti

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Professional Experience

Ipazia spa

[Milan, Italy - Remote](#)

AI SCIENTIST INTERN

[Jul. 2024 - Jun. 2025](#)

- Developed and assessed a large language model (LLM)-based multi-agent debate architecture with diverse roles and sparse, dynamic communication structures for complex reasoning tasks.
- Achieved 85% accuracy on the MMLU moral scenarios subset using LLaMA 3.1-70B-based agents. The best-performing debate architecture.
- Investigated "wisdom of the crowd" phenomena across 50 independent LLM agents with diverse personas in different settings.

Publications and Workshops

27th European Conference on Artificial Intelligence (ECAI 2024)

[Santiago de Compostela, Spain](#)

SPEAKER AT 13TH INTERNATIONAL WORKSHOP ON AGENTS IN TRAFFIC AND TRANSPORTATION (ATT)

[Oct. 2024](#)

- Co-author of the research paper: *Deep Convolutional Q-Learning for Traffic Lights Optimization in Smart Cities*.

Education

University of Padua

[Padua, Italy](#)

M.Sc. IN PHYSICS OF DATA

[Sept. 2021 - Dec. 2024](#)

- GPA: 3.95/4
- Thesis: *Network Sparsity and Persona Diversity Drive Problem-Solving Capabilities of Agentic AI Systems*. Supervisors: Dr. Carlo Nicolini, Prof. Manlio de Domenico.

University of Padua

[Padua, Italy](#)

B.Sc. IN PHYSICS

[Sept. 2015 - Jul. 2021](#)

- GPA: 3.18/4
- Thesis: *Speech Envelope and EEG Signal Analysis as a Tool to Study Language Development*. Supervisors: Prof. Samir Suweis, Dr. Ramón Guevara.

Projects

BONE AGE PREDICTION USING CNNs AND VISUAL ATTENTION - Team Project

[GitHub Repo](#)

PYTHON, TENSORFLOW, KERAS

- Design and comparison of different convolutional neural network architectures for bone age prediction from X-ray images.
- Best performing model obtained an accuracy of 94% over the test set.

MULTI-TRACK MUSIC GENERATION USING GANs - Team Project

[GitHub Repo](#)

GOOGLE CLOUD PLATFORM, PYTHON, PYTORCH

- Realization of a GAN for realistic sounding single and multi-track music generation, both from scratch and conditioned on a previous sample.
- Implementation of metrics for a quantitative assessment of generated samples.

K-MEANS ALGORITHMS: DASK IMPLEMENTATION - Team Project

[GitHub Repo](#)

DASK, DOCKER, PYTHON

- Development of a parallel version of the k-means clustering algorithm using Dask on a cluster of 3 virtual machines.
- Test of the algorithm on an artificial dataset and benchmark of cluster's parameters.

Skills

Programming & Tools

Python, R, Shell Scripting, Git, Docker, MySQL.

Libraries & Platforms

NumPy, Pandas, Scikit-learn, PyTorch, TensorFlow, Dask, AWS.

Languages

Italian (Native), English (Proficient), French (Elementary).

Extracurricular Activity

University of Padua

[Venice, Italy](#)

CO-ORGANIZER OF 2023 SPRING WORKSHOP ON PHYSICS OF DATA

[Mar. 2023 - Apr. 2023](#)

- Scheduled the talks of 12 speakers and arranged their stay in Venice.

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