

Alessandro Soccol

MSc Student in Artificial Intelligence

BIO

I am a second year **Master's student in Applied Artificial Intelligence** at the University of Cagliari, where I've also served as a **Research Fellow** under Prof. Ludovico Boratto, Dr. Mirko Marras, and Dr. Giacomo Medda. My research focuses on Information Retrieval, Recommender Systems, Explainability and Natural Language Processing.

I have **authored four research papers**, including two published in **top-tier international conferences (ACM CIKM '25, ACM RecSys '24)**. I am also **part of the Excellence Program**, an honors track reserved for only two top-performing students, and an **Lead the Future (LTF) Mentee**, a selective mentorship program for outstanding students with an acceptance rate of around 10%. I've also been recognized by **Forbes** as one of the top 100 graduate students in Italy.

WORK EXPERIENCE

Research Assistant @ University of Cagliari 08/2024 - 12/2025

Presented three research papers at the 18th ACM RecSys (1,100+ attendees, Bari, Italy), the 34th ACM CIKM (1,470+ attendees, Seoul, South Korea) and 2nd WAILS conferences.
Supervised one BSc student through completion of Bachelor's thesis

Research Intern @ University of Cagliari 09/2023 – 07/2024

Transformer-based recommendation models leveraging knowledge graphs.

Research Intern @ University of Cagliari 07/2023 – 09/2024

Fundamentals of Quantum Computation, Quantum Algorithms, and Quantum Machine Learning. Implemented Shor's Algorithm for semiprime factorization and explored basic Quantum Algorithms using Qiskit to reinforce theoretical understanding through practical simulation.

EDUCATION

2024 - present MSc Artificial Intelligence at **University of Cagliari**

2024 - 2024 BSc Computer Engineering at **University of Oviedo (Erasmus+ Program)** (GPA: 4.0/4.0)

2021 - 2024 BSc Computer Science and Data Analytics at **University of Cagliari** (GPA: 4.0/4.0, laude)

PUBLICATIONS

Soccol, Alessandro, Ludovico Boratto, Giacomo Balloccu, et al. (2024). "KGGLM: A Generative Language Model for Generalizable Knowledge Graph Representation Learning in Recommendation". In: *Proceedings of the 18th ACM Conference on Recommender Systems, RecSys 2024, Bari, Italy, October 14-18, 2024*.

Boratto, Ludovico et al. (2025). "hopwise: A Python Library for Explainable Recommendation based on Path Reasoning over Knowledge Graphs". In: *Proceedings of the 34th ACM Conference on Information and Knowledge Management, CIKM 2025, Seoul, South Korea, November 10-14, 2025*.

Soccol, Alessandro and Giacomo Medda and (2025). "Effective and Transparent Course Recommendation through Causal Reasoning with Language Models". In: *Proceedings of the 15th Italian Information Retrieval Workshop, IIR 2025, Cagliari, Italy, September 3-5, 2025*.

Soccol, Alessandro and Gianni Fenu and (2025). "Low-Resource Course Recommendation for Professional Training Associations". In: *Proceedings of the 2nd Workshop on Artificial Intelligence with and for Learning Sciences, WAILS 2025 Cagliari, Italy, December 10-12, 2025*.

Soccol, Alessandro et al. (2025). "Explainable Course Recommendation with Knowledge Graphs: A Comparative Audit of Diverse Modeling Paradigms". In: *Under Review, Journal Paper*.

PROJECTS

Frogger game in C with Process and Thread Parallelization [GitHub](#)

Built a game that implements the frogger game using processes, threads and network sockets.

Recommender System for a Local Organization [GitHub](#)

Built a recommender system that generated personalized course suggestions.

Maintainer of hopwise: A Python Library for State-of-the-art Recommender Systems [GitHub](#)

The most advanced open-source Python library providing cutting-edge implementations of state-of-the-art recommender system algorithms to support research and development in personalized recommendations.

A comparison of oversampling techniques using GAN and CycleGAN [GitHub](#)

Conducted a comparative study of GAN and CycleGAN, generating 1,500+ synthetic samples with Keras and TensorFlow to improve binary classifier accuracy.

Spam email machine learning binary classifier [GitHub](#)

Developed and evaluated multiple machine learning models for predictive tasks, including regression and classification, using Python and scikit-learn. Implemented feature selection, hyperparameter tuning, and performance comparison across algorithms to identify optimal model configurations.

Italian COVID '19 Tracker Dashboard [GitHub](#)

Developed a dashboard showing daily and monthly data on COVID19 in Italy, with login and logging features that use a MySQL database to record data. Hosted locally using XAMPP and presented in real time using ngrok.

CERTIFICATIONS

University of Cagliari, English B2 2023

University of Cagliari, Spanish A2 2023

CISCO, CCNAv7 Bridging 2021

CISCO, Cybersecurity Essentials 2020

CISCO, Introduction to Cybersecurity 2019

CISCO, CCNA1 v7 2019

SKILLS

Languages Python, C, R, SQL, LaTeX

Technical Skills Data Structures and Algorithms, Machine Learning, Deep Learning, Natural Language Processing, Information Retrieval, Graph Neural Networks, Data Mining, Statistics, Recommender Systems, Reinforcement Learning, Knowledge Graphs

Tools PyTorch, Tensorflow, Keras, Huggingface Transformers, Pandas, Polars, Git, PostgreSQL, Docker, AWS

Volunteer LeadTheFuture Mentee, Association for Computer Machinery Student Member (ACM), Forbes Next Leaders 2025