

Marco Nicolini

PhD Student in Computer Science
Università degli studi di Milano

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LinkedIn

Google Scholar

EXPERIENCE

• Università degli studi di Milano

PhD Student

Milan

October 2024 - Present

- Conduct research on machine-learning frameworks for DNA, RNA, and protein sequence modeling.
- Teach lectures and conduct examination activities for the MSc Bioinformatics course.
- International collaboration with BIH Berlin Charité on computational genomics projects.
- Presented work at international conferences and workshops in Berlin, La Coruña, Turin, Rome, Milan and Lipari.

Research Scientist

February 2024 - October 2024

- Develop and evaluate language models for biomolecular engineering; design model architectures, perform fine-tuning and benchmark studies.

• Universidad de Granada

Granada

Visiting Researcher

October 2025

- Led integration of RNA interaction prediction models and coordinated cross-group experimental planning.

• Fundação Getulio Vargas

Rio de Janeiro

Visiting Researcher

September 2025

- Advanced joint RNA interaction prediction workflows and exchanged methodological updates across groups.

• IES Abroad

Milan

Italian Student Companion

January 2022 - May 2022, and September 2024 - December 2024

- Assisted american students adjusting to Italian culture, worked at the IES Abroad Milan office.

EDUCATION

• Università degli studi di Milano

Milano

MSc "Computer Science"

September 2021 - December 2023

- Thesis: "Language models for the generation of functionally characterized biomolecules".
- Final Grade: 110/110 Cum Laude

BSc "Music Information Science"

October 2018 - December 2021

- Thesis: "Audio-based Human Activity Classification using Transfer Learning".
- Final Grade: 110/110

• Albert-Ludwigs-Universität Freiburg

Freiburg

Master exchange program in Computer Science Engineer department - GPA: 27/30

October 2022 - March 2023

• Universidad Carlos III de Madrid

Madrid

Bachelor exchange program in Computer Science Engineer department - GPA: 27.5/30

February 2021 - July 2021

PUBLICATIONS

• Computational Understanding of Pairwise Interactions in ncRNA Data.

CIBB proceedings, 2025

Developed a transformer-based framework for predicting ncRNA interactions.

• Modular Networks for Predicting the Pathogenicity of Genetic Variants.

IWANN proceedings, 2025

Proposed a model that shows improved detection of pathogenic non-coding SNVs.

• A transformer-based model to predict micro RNA interactions.

IWANN proceedings, 2025

Combined foundation-model embeddings with a feed-forward classifier to predict microRNA interactions from sequence.

• Fine-tuning of conditional transformers improves in silico enzyme prediction and generation. Specialization of pretrained conditional transformers for enzyme families.

CSBJ, 2025

Proposed a solution for Speech Emotion Recognition in multilingual settings.

Springer Nature, 2024

• Gender-aware speech emotion recognition in multiple languages.

Proposed a solution for Speech Emotion Recognition in multilingual settings.

ICPRAM proceedings, 2023

• A hierarchical approach for multilingual speech emotion recognition.

Proposed a gender-based emotion recognition classifier for multilingual audio.

ICPRAM proceedings, 2023

• Lightweight audio-based human activity classification using transfer learning.

Developed a framework using transfer learning to classify human activities.

LANGUAGES AND TECHNICAL SKILLS

Languages: Italian (Native), English (C1 IELTS certificate obtained in March 2023).

Tools and frameworks: Python, PyTorch, Hugging Face, NumPy, pandas, scikit-learn, Go, SQL, MATLAB, C, C++, Git, LaTeX, Microsoft Office.