

# Marco Nicolini

Università degli studi di Milano

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🔗 NicoRota-0 (GitHub)

🌐 LinkedIn

## EXPERIENCE

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### •Università degli studi di Milano

February 2024 - October 2025

Research Scientist

Milan

- Designing, implementing and optimizing Large Language Models (LLMs) within the field of biomolecular engineering.

### •IES Abroad

January 2022 - May 2022

Resident Assistant

Milan

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

## EDUCATION

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### •Università degli studi di Milano, Milan (Italy)

September 2021 - December 2023

MSc “Computer Science”

Final Grade 110L/110

- Title of the final thesis: “Language models for the generation of functionally characterized biomolecules”.
- Main courses: Bioinformatics, Web Algorithmics, Architectures for Big Data, Artificial Intelligence, Audio Pattern Recognition, Intelligent Systems For Industry, Information Management.

### •Albert-Ludwigs-Universität Freiburg, Freiburg (Germany)

October 2022 - March 2023

Master Exchange Program In Computer Science Engineer department

GPA: 27/30

- Main courses: Information Retrieval, Computer Vision, RNA Bioinformatics.

### •Università degli studi di Milano, Milan (Italy)

October 2018 - December 2021

BSc “Music Information Science”

Final Grade: 110/110

- Title of the final thesis: “Audio-based Human Activity Classification using Transfer Learning”.
- Main courses: Computer Programming, Operating Systems, Databases, Web Programming, Computer Science Applied to Music, Algorithms and Data Structures.

### •Universidad Carlos III de Madrid, Madrid (Spain)

February 2021 - July 2021

Bachelor Exchange Program In Computer Science Engineer department

GPA: 27.5/30

- Main courses: Machine Learning, Computer Networks, Software Development.

### •Liceo Musicale Alessandro Manzoni, Varese (Italy)

September 2013 - June 2018

High school, Focus on music and classical studies

Final Grade: 83/100

## PUBLICATIONS

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### •Fine-tuning of conditional transformers improves the generation of functional proteins

BIOSTEC, 2024

Proposed a pre-trained model specialization approach on specific protein families

- Shown that fine tuning conditional transformers can enhance the prediction accuracy of the pre-trained models and can generate new potentially functional proteins.

### •Gender-aware speech emotion recognition in multiple languages

ICPRAM Springer, 2024

Proposed a solution for Speech Emotion Recognition in multilingual settings

- Demonstrated that a hierarchical approach that includes prior knowledge of the speaker’s gender can improve the overall classification performance.

### •A hierarchical approach for multilingual speech emotion recognition

ICPRAM proceedings, 2023

Proposed a Speech Emotion Recognition algorithm for multilingual audio gender-based classification

- Demonstrated that a gender-based emotion classifier can outperform a general emotion classifier.

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

ICPRAM proceedings, 2023

Developed a Deep Neural Network framework using transfer learning to classify human activities

- Shown that the proposed framework surpasses state-of-art performances while it can be executed on mobile devices.

## TECHNICAL SKILLS AND RESEARCH FIELD

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**Languages:** Italian (Mother tongue), English (C1 IELTS certificate obtained in March 2023).

**Applications:** Microsoft Excel, Word, and PowerPoint. LaTeX, Git, GitHub.

**Research Field:** Machine Learning, Deep Learning, Bioinformatics, Audio Pattern Recognition.