TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO **ID CODE 6198**

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at Dipartimento di Informatica Giovanni Degli Antoni dell'Università degli Studi di Milano. Scientist- in – charge: Giorgio Valentini.

Marco Nicolini - CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Nicolini
Name	Marco

EDUCATION AND TRAINING

Degree	Course of studies	University	Final grade	Period
Master	Computer Science	Università degli Studi di Milano	110L/110	Sep 2021 – Dec 2023
Master Exchange	Exchange program In Computer Science Engineer department	Albert-Ludwigs-Universität Freiburg	GPA: 27/30	Oct 2022 – Mar 2023
Bachelor	Music Information Science	Università degli Studi di Milano	110/110	Oct 2018 – Dec 2021
Bachelor Exchange	Exchange program In Computer Science Engineer department	Universidad Carlos III de Madrid	GPA: 27.5/30	Feb 2021 – Jul 2021

EXPERIENCE

Appointment	Structure	Period
Resident Assistant	IES Abroad - Assisted american students adjusting to Italian culture through teaching them cultural differences, worked at the IES Abroad Milan office, handled emergency situations.	Jan 2022 – May 2022

LANGUAGES

Language	level of knowledge
Italian	Mothertongue
English	C1 (IELTS academic certificate obtained in March 2023)

THESIS AND PROJECT ACTIVITY

Year	Project
2023	Master thesis: Language models for the generation of functionally characterized biomolecules.
2023	Natural interaction project: combined top-down visual saliency maps guided by captions (Convolutional and recurrent neural network-generated) and gaze shift sampling in videos.
2022	Bioinformatics project: developed neural networks models that try to predict whether specific non-coding regulatory regions (e.g. a promoter or an enhancer) are active or not in a specific cell, using the nucleotide sequences of DNA and the epigenetic data associated with each regulatory region.

2021	Bachelor thesis: Audio-based human activity classification using transfer learning.

CONGRESSES AND SEMINARS

Date	Title	Place
20/12/2023	Delivered a classroom presentation on my master thesis talking about large language models for the generation of proteins as part of the 'New Generation Data Models and DBMSs' master course.	Università degli Studi di Milano.
23/02/2023	Proposed a speech emotion recognition algorithm for multilingual audio gender-based classification.	12th International Conference on Pattern Recognition Applications and Methods.
23/02/2023	Proposed a Deep Neural Network framework using transfer learning to classify human activities.	12th International Conference on Pattern Recognition Applications and Methods.

PUBLICATIONS

Nicolini, Marco, and Stavros Ntalampiras. "A Hierarchical Approach for Multilingual Speech Emotion Recognition." Proceedings of the 12th International Conference on Pattern Recognition Applications and Methods. ScitePress, 2023. DOI: https://doi.org/10.5220/0011714800003411.

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

Nicolini, Marco, Federico Simonetta, and Stavros Ntalampiras. "Lightweight Audio-Based Human Activity Classification Using Transfer Learning." Proceedings of the 12th International Conference on Pattern Recognition Applications and Methods. ScitePress, 2023. DOI: https://doi.org/10.5220/0011647900003411.

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

PUBLICATIONS IN-PRESS

Nicolini, Marco, Giorgio Valentini et al. "Fine-tuning of Conditional Transformers Improves the Generation of Functionally Characterized Proteins." Proceedings of the 17th International Joint Conference on Biomedical Engineering Systems and Technologies, Volume BIOINFORMATICS. ScitePress, 2024.

Shown that fine tuning conditional tranformers, pre-trained on large corpora of proteins, on specific protein families can significantly enhance the prediction accuracy of the pre-trained models and can also generate new potentially functional proteins that could enlarge the protein space explored by the natural evolution.

Nicolini, Marco, and Stavros Ntalampiras. "Gender-aware speech emotion recognition in multiple languages" In Pattern Recognition Applications and Methods. Springer, 2024.

Presented a solution for Speech Emotion Recognition in multilingual setting using a hierarchical approach.

OTHER INFORMATION

Research fields: Bioinformatics, Machine Learning, Deep Learning, Audio Pattern Recognition.

Programming languages: Python, Go, SQL, MATLAB(Simulink),C, C++, XML, QML, JavaScript, Java, CSS, PHP, Apache Spark(framework).

Known applications: LaTeX, Git, GitHub.

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Please note that CV WILL BE PUBLISHED on the University website and It is recommended that personal and sensitive data should not be included. This template is realized to satisfy the need of publication without personal and sensitive data.

Please DO NOT SIGN this form.

Place and date: Milano, 10/01/2024

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