MARTA LOVINO
CURRICULUM VITAE

Modena, 01/07/2025

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SUMMARY

This summary contains a synthesis of the relevant information from the curriculum vitae, which is reported in detail on the following pages. As of January 2025, I am a **fixed-term Researcher (pursuant to Law 240/10)** in the **Department of Life Sciences (former Department of Biomedical Sciences - DSV)** at the University of Modena and Reggio Emilia (UNIMORE)

My **research interests** concern **designing and developing bioinformatics algorithms and deep learning models** to interpret clinical and biological phenomena through analyzing molecular and histological data, clinical data, and metadata, such as molecular pathways and mutational signatures.

Such topics are addressed starting from the Master's Degree in Biomedical Engineering at the Politecnico di Torino (2017) and refined with the **PhD in Computer and Systems Engineering** obtained at the same university in **2021**. Subsequently, from **February 2021 to August 2023, I continued with a Post-doc** research fellowship at the DIEF, University of Modena and Reggio Emilia.

International activities involve various research groups and collaborations to European projects.

Regarding activities such as **invited speaker**, I have held seminars at prestigious European institutions on my research topics.

Among the **editorial activities**, since 2023 I have been **Associate Editor** for the journal **PeerJ Computer Science** and **Guest Editor for BMC Bioinformatics** (volume in preparation for 2024).

As for **publications**, in the last 5 years, I have produced 19 publications of which:

- 12 journal articles
- 7 articles published in the proceedings of peer-reviewed conferences, indexed on Scopus.

A detailed CV follows.

A. TITLES - PhD and other titles

- **PhD in Computer Science and Systems Engineering, Politecnico di Torino, June 22, 2021, with honors.**

  PhD Title: *Algorithms for complex systems in the life sciences: AI for gene fusion prioritization and multi-omics data integration.*
- Examination for the qualification to practice as an Information Engineer, in the first session of 2017
- Master's degree in Biomedical Engineering LM-21, Politecnico di Torino, March 31, 2017
- Bachelor's degree in Biomedical Engineering L-9, Politecnico di Torino, March 26, 2015

B. RESEARCH ACTIVITIES at qualified Italian or foreign institutions

- **Assistant Professor type A** at the Department of Engineering "Enzo Ferrari", University of Modena and Reggio Emilia, from **10/01/2023** to present.
  Title: *Design of machine/deep learning and explainable AI models for predicting chemotherapy response in cancer.*
- **Post-doctoral Research Fellowship, 15/01/2022-30/08/2023**, 1 year and 7 and a half months, **University of Modena and Reggio Emilia**.
  Topics: *Development and validation of deep learning methods for the analysis of histological images and omics data and for the prediction of therapy response in ovarian cancer, European project H2020 DECIDER.*
- **Post-doctoral Research Fellowship, 4/1/2021-1/14/2022,** 9 and a half months**, Politecnico di Torino.**
- **Internship at Institut Curie Research Center,** Paris, **03/01/2020-08/31/2020, 6 months** (Signaling in Development and brain tumors lab)

C. PROJECTS

1. DECIDER WP2: ***Integration of histopathology and genetics to predict chemotherapy response.***
2. DECIDER WP4: ***Longitudinal data and tumour evolution analysis.***
3. WITH CURIE – CEREBELLAR DEVELOPMENT UNIT: **Medulloblastoma Multi – Omics.**
4. WITH CURIE – COMPUTATIONAL BIOLOGY UNIT: **Integrated microRNA and proteome analysis of cancer datasets.**
5. WITH UNIVERSITE PICARDIE JULES VERNE: **Multi-omics data integration for patient stratification.**

6. WITH UNIVERSITE PICARDIE JULES VERNE: **Transformer architectures for SarS-Cov-2 variant identification.**

D. SUPERVISION OF PHD STUDENTS

I support the supervision **of 5 PhD students in the PhD program in Information and Communication Technologies (ICT) and the National PhD program in Artificial Intelligence for Society** on the development of deep learning models based on Transformers and GNNs, Multiple-Instance Learning models, Multimodal Learning models, and explainable AI.

E. ACTIVITIES SUCH AS LEADING OR PARTICIPATING IN EDITORIAL BOARDS OF SCIENTIFIC JOURNALS

- **Since 2023, Associate Editor at PeerJ Computer Science (Q1 Scimagojr in Computer Science, year 2023)** https://peerj.com/MLovino/
- **2024, Guest Editor for BMC Bioinformatics** (volume in preparation for 2024**, Q1 Scimagojr in Computer Science)**

F. TEACHING ACTIVITIES AT UNIVERSITY LEVEL IN ITALY OR ABROAD

List of teaching activities at **UNIMORE**:
https://personale.unimore.it/rubrica/insegnamenti/malovino
List of teaching activities at **Politecnico di Torino** includes various Bioinformatics courses held since 2018.

G. THESIS SUPERVISION ACTIVITIES FOR MASTER'S DEGREE

- Supervisor of **12 master's theses** in Computer Engineering and Biomedical Engineering at the Politecnico di Torino.
- Supervisor of **6 master's theses** in Computer Engineering at UNIMORE.

H. TUTORING ACTIVITIES FOR BACHELOR'S AND MASTER'S DEGREE STUDENTS AND RESEARCH FELLOWS

- Tutoring for undergraduate students in the Engineering Area, Informatics, Python, 2021/2022
- Tutoring for master's students in Biomedical Engineering and Computer Engineering, 2020/2021-2019/2020-2018/2019

I. LIST OF ALL SCIENTIFIC PUBLICATIONS

- The complete publication list is available here: https://iris.unimore.it/handle/11380/1059966/browse?filter_type=authority&authority=rp115412&filter_value=rp115412&filter_value_display=LOVINO%2c+MARTA&type=author&sort_by=ASC&order=&rpp=20