CONTACT ME AT

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SOFT SKILLS

Empathy

Enthusiasm

Problem Solving

Networking

Teamwork

HARD SKILLS

Italian, native proficiency

English, working proficiency

Multidisciplinary capabilities

Research

Machine learning

PROGRAMMING SKILLS

Python, Java, SQL, Numpy,

Pandas, Sklearn, Keras, Pytorch,

Data structures, NLP, Networkx

CERTIFICATIONS

Neural Networks and Deep Learning (link)

AWARDS

Winner of the "Enabling Sustainable Cities Through Blockchain Challenge" (2019, WomENcourage)

LORENZO MADEDDU

MACHINE LEARNING SCIENTIST

PERSONAL PROFILE

I am a machine learning scientist with experience in teaching, research, and multidisciplinary projects.

WORK EXPERIENCE

Senior Data Scientist (Knowledge Graph Insights)
AstraZeneca - Göteborg, Sweden — Sep 2022 - Current Postion|

- Developed graph-mining frameworks for large biomedical knowledge graphs to investigate novel pharmaceutical insights

Machine Learning Scientist (PhD experience - Harvard)
Harvard Medical School, Brigham and Women's Hospital, Loscalzo Lab — Jun 2021 - Sept 2021|

- Tested 6000+ drugs with network pharmacology and machine learning strategies to uncover effective treatments for the COVID-19 infection

Protein-Protein Interactions Prediction Challenge
Institute for Network Medicine Foundation — Nov 2020 - Sept 2021|

- Worked with an international team of academics from Harvard University and Sapienza University of Rome, to develop a competition for predicting new protein-protein interactions

Machine Learning Scientist in the AI task-force for COVID-19
Confederation of Laboratories for Artificial Intelligence Research in Europe — May 2020 - Dec 2020|

- Released a public bioinformatic dataset on COVID-19 for drug repurposing tasks (link)
- Developed a drug repurposing deep learning model for COVID-19 (submitted paper)

Data Scientist
Sapienza University of Rome — Sep 2017 - Dec 2017|

- Developed a Java-based framework for extraction and analysis of social temporal web data (link)

TEACHING

Machine Learning Teacher
UnitelmaSapienza University of Rome — Jun 2022 - Aug 2022|

- Recorded 17 Machine Learning lessons

Data Science Teacher
LUISS Guido Carli university — Feb 2022 - May 2022|

- Teaching assistant for the "Data Visualization" course at the LUISS Guido Carli university.

Machine Learning Scientist
Sapienza University of Rome — Dec 2020 - Feb 2021|

- Wrote the teaching material for a course of Machine Learning (link)

Computer Science Teacher
Sapienza University of Rome — Feb 2019 - May 2019|

- Teaching assistant for Python at the "Fundamentals of Programming"course (link)

EDUCATION

PhD in Innovative Biomedical Technologies in Clinical Medicine
Sapienza University of Rome — Nov 2018 - Jun 2022|

- Research Fields: Machine Learning, Graph-Mining, Data-Mining
- Areas of Application: Network Biology, Network Pharmacology

MSc, Computer Science (in English)
Sapienza University of Rome — Oct 2016 - Oct 2018|

- Grade: 110/110, with honors (GPA 4.00)
- Machine Learning, Deep Learning and Big Data analytics

BSc, Computer Science (in Italian)
Sapienza University of Rome — Sep 2013 - Oct 2016|

- Grade: 108/110 (GPA 4.00)
- Thesis in network analysis using Big Data technologies (Hadoop, MapReduce, Java)

JOURNAL ARTICLES

Assessment of community efforts to advance network-based computational prediction of protein-protein interactions
Xu-Wen Wang, Lorenzo Madeddu et al. Submitted - 2022|

- https://doi.org/10.1101/2021.09.22.461292

Deep Graph Networks for Drug Repurposing with Multi-Protein Targets
Davide Bacciu, Federico Errica, Alessio Gravina, Lorenzo Madeddu, Marco Podda, Giovanni Stilo Submitted - 2022|

A Network-Based Analysis of Disease Modules from a Taxonomic Perspective
Lorenzo Madeddu, Giorgio Grani, Paola Velardi JBHI - 2021|

- https://doi.org/10.1109/JBHI.2021.3106787

A Feature-Learning-Based Method for the Disease-Gene Prediction Problem
Lorenzo Madeddu, Giovanni Stilo, Paola Velardi IJDMB - 2020|

- https://doi.org/10.1504/IJDMB.2020.109502

CONFERENCE ARTICLES

Integrating Categorical and Structural Proximity in Disease Ontologies
Lorenzo Madeddu, Giorgio Grani, Paola Velardi EMBC - 2021|

- https://doi.org/10.1109/EMBC46164.2021.9630114

Challenges and Solutions to the Student Dropout Prediction Problem in Online Courses
Bardh Prenkaj, Giovanni Stilo, Lorenzo Madeddu CIKM - 2020|

- https://doi.org/10.1145/3340531.3412172

Predicting disease genes for complex diseases using random watcher-walker
Lorenzo Madeddu, Giovanni Stilo, Paola Velardi SAC - 2020|

- https://doi.org/10.1145/3341105.3373979

Predicting Disease Genes Using Connectivity and Functional Features
Lorenzo Madeddu, Giovanni Stilo, Paola Velardi BIBM - 2019|

- https://doi.org/10.1109/BIBM47256.2019.8982929

BOOK CHAPTERS

Deep Learning Methods in Network Biology
Lorenzo Madeddu, Giovanni Stilo World Scientific - 2021|

- https://doi.org/10.1142/q0322

Ontological and Connectivity Structure of Disease-Gene Modules in the Human Interactome
Lorenzo Madeddu, Giovanni Stilo Springer Nature - 2021|

- https://doi.org/10.1007/978-3-030-58080-3_76-1

FEATURED TALKS

AI for Health and Medicine Intelligent Information Mining - Research Group
OpenDI Mar 2022|

- A presentation of the current research projects of the lab at the Computer Science department.

AI for Health and Medicine Intelligent Information Mining - Research Group
Ital-IA Feb 2022|

- A presentation of the current research projects of the lab.

Deep Learning in Network Biology
Dido Workshop Nov 2021|

- A comprehensive overview of fundamental concepts, deep learning methods and critical challenges of Network Biology in Network Biology, Network Medicine, and Network Pharmacology.