



● WORK EXPERIENCE

01/11/2023 – CURRENT Rome, Italy

POSTDOC SAPIENZA UNIVERSITY OF ROME

Main research activity:

- Computational Social Science
- Network Science
- Complex Systems
- Graph theory

11/2019 – 31/12/2023 Florence, Italy

TUTOR OF MATHEMATICS UNIVERSITY OF FLORENCE

Study assistance and support to students of degree courses in Mathematics, Chemistry, Biology, Physics, Geology and Computer Science.

08/2020 – 09/2020 Milan, Italy

DATA ANALYST FONDAZIONE DON GNOCCHI

Analysis of functional networks obtained through fMRI data.

● EDUCATION AND TRAINING

01/11/2020 – 08/11/2023 Italy

PHD IN MATHEMATICS University of Florence

Field of study Discrete Mathematics, Complex Networks, Computational Social Sciences |

Thesis Reconstruction problems on graphs and discrete sets: theoretical results and algorithms

2018 – 2020 Italy

MASTER DEGREE IN MATHEMATICS University of Florence

Final grade 110 cum Laude

10/2015 – 07/2018 Italy

BACHELOR DEGREE IN MATHEMATICS University of Siena

Final grade 110 cum Laude

2010 – 2015 Italy

HIGH-SCHOOL DIPLOMA Istituto di Istruzione Superiore Tito Sarrocchi

Website <https://www.sarrocchi.edu.it/wp/la-scuola/> | **Final grade** 100/100

25/09/2022 – 30/09/2022 Castasegna, Switzerland

NETHIKE 2022 Eidgenössische Technische Hochschule Zürich

The school focused on how to describe, interpret and test hypotheses on network data.

Website <https://sn.ethz.ch/nethike.html>

25/07/2022 – 05/08/2022 Italy

MATHEMATICS OF MACHINE LEARNING SUMMER SCHOOL Istituto Nazionale Alta Matematica "Francesco Severi"

During the school I attended the following courses on the theoretical aspects of Machine Learning and Deep Learning:

- Convex Optimization (Nicolas Flammarion, Ecole polytechnique fédérale de Lausanne);
- Statistical Learning Theory (Rob Schapire, Microsoft Research NYC lab);
- Deep Learning (Joan Bruna, Courant Institute and the Center for Data Science);
- Online Learning (Nicolò Cesa-Bianchi, Università degli Studi di Milano);
- Reinforcement Learning (Emma Brunskill, Stanford University).

Website <https://www.smi-math.unipr.it/past-courses/cortona/summer-graduate-school-mathematics-of-machine-learning/103/>

22/07/2019 – 16/08/2019 Italy

SCUOLA MATEMATICA UNIVERSITARIA 2019 University of Perugia

During the school, I attended these courses:

- Differential Geometry, held by Prof. Liviu Ornea (University of Bucharest). The program covered an introduction to modern Differential Geometry;
- Numerical Analysis, held by Michele Benzi (Scuola Normale Superiore). The program covered an introduction to Complex Networks using Numerical Analysis.

Website <https://www.smi-math.unipr.it/past-courses/perugia/summer-school-smi-2019/61/>

10/06/2019 – 14/06/2019 Spain

UCM XIII MODELLING WEEK Universidad Complutense de Madrid

During the week I participated in a project entitled "Deep Learning based Architectures for Real-Time Facial Analysis".

Website https://www.mat.ucm.es/congresos/mweek/XVI_Modelling_Week/index.htm

09/2014 – 10/2014 United Kingdom

LEONARDO PROJECT University of Bangor

During the period spent in the United Kingdom, I worked at Bangor University as a chemical analyst.

Website <https://www.bangor.ac.uk/>

● LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● DIGITAL SKILLS

Programming

Matlab | R | Python

Data Analysis and Visualization

iGraph (R) | data.table (R) | ggplot2 (R) | dplyr (R) | Seaborn (Python) | Matplotlib (Python) | Numpy (Python) | Pandas (Python)

Common Softwares

Latex | Microsoft Office package: Microsoft Word, Excel, PowerPoint, Access

● CONFERENCES AND SEMINARS

15/04/2024 – 18/04/2024 Florence

DGMM 2024

Member of the Organizing Committees.

Link <https://dgmm2024.dimai.unifi.it/>

07/06/2023 – 10/06/2023 Tainan

IWOCA 2023

I presented a work entitled "Minimum surgical probing with convexity constraints".

Link <https://iwoca2023.csie.ncku.edu.tw/>

24/10/2022 – 27/10/2022 Strasbourg

DGMM 2022

I presented a work entitled "Properties of SAT formulas characterizing convex sets with given projection".

Link <https://dgmm2022.sciencesconf.org/>

13/06/2022 – 15/06/2022 Messina

IWCIA 2022

I presented a work entitled "The generalized microscopic image reconstruction problem for hypergraphs".

Link <https://www.iwcia2022.org/>

02/05/2022 – 04/05/2022 Milan

TAIR 2022

I was an invited speaker to the conference. I presented a work entitled "The null label problem and the reconstruction of the 2-intersection graph".

Link <https://www.mate.polimi.it/events/TAIR2022/?cn-reloaded=1>

14/12/2021 – 17/12/2021 Melbourne

WI-IAT 2021

I presented a work entitled "How virtual reality influenced emotional well-being worldwide during the Covid-19 pandemics".

Link <https://www.wi-iat.com/wi-iat2021/>

05/07/2021 – 07/07/2021 Ottawa

IWOCA 2021

I presented a work entitled "A study on the existence of null label for 3-hypergraphs".

Link <https://iwoca2021.eecs.uottawa.ca/>

● PUBLICATIONS

2024

[The complexity of 2-intersection graphs of 3-hypergraphs recognition for claw-free graphs and triangulated claw-free graphs](#)

Discrete Applied Mathematics

2024

[A Topology-Based Approach for Predicting Toxic Outcomes on Twitter and YouTube](#)

IEEE Transactions on Network Science and Engineering

2024

[User Volatility on Reddit and Voat](#)

IEEE Transactions on Computational Social Systems

2024

[Persistent interaction patterns across social media platforms and over time](#)

Nature

2024

[The drivers of global news spreading patterns](#)

Scientific Reports

2023

[Characterizing engagement dynamics across topics on Facebook](#)

Plos one

2023

[MINIMUM SURGICAL PROBING with Convexity Constraints](#)

International Workshop on Combinatorial Algorithms

2023

[A study on the predictive strength of fractal dimension of white and grey matter on MRI images in Alzheimer's disease](#)

Annals of Mathematics and Artificial Intelligence

2022

[Structure and Complexity of 2-Intersection Graphs of 3-Hypergraphs](#)

Algorithmica

2022

[Growing polarization around climate change on social media](#)

Nature Climate Change

2022

[Properties of SAT Formulas Characterizing Convex Sets with Given Projections](#)

International Conference on Discrete Geometry and Mathematical Morphology

2023

[The Generalized Microscopic Image Reconstruction Problem for Hypergraphs](#)

International Workshop on Combinatorial Image Analysis

2022

[Conspiracy theories and social media platforms](#)

Current Opinion in Psychology

2022

[Reliability of Content and Echo Chambers on YouTube during the COVID-19 Debate](#)

18th International AAAI Conference on Web and Social Media

2021

[How Virtual Reality Influenced Emotional Well-being Worldwide During the Covid-19 Pandemics](#)

IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology

2021

[Virtual Reality for Enhancement of Emotional Mindset in the First Lockdown of United Kingdom for the Covid-19 Pandemics](#)

International Conference on Brain Informatics

2021

[A Study on the Existence of Null Labelling for 3-Hypergraphs](#)

IWOCA 2021

● **HONOURS AND AWARDS**

2022

Best Paper for PhD student Award – IEEE/ACM/WIC Web Intelligence conference

● **NETWORKS AND MEMBERSHIPS**

2022 – CURRENT

IRIS Accademic Research Group

Link <https://www.irisacademic.org/>