



Niccolò Di Marco

WORK EXPERIENCE

[11/2019 – Current]

Tutor of Mathematics

University of Florence

City: Florence

Country: Italy

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

[08/2020 – 09/2020]

Data analyst

Fondazione Don Gnocchi

City: Milan

Country: Italy

Analysis of functional networks obtained through fMRI data.

EDUCATION AND TRAINING

[01/11/2020 – 08/11/2023]

PhD in Mathematics

University of Florence

Country: Italy

Field(s) of study: Discrete Mathematics | Complex Networks | Computational Social Sciences

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

[2018 – 2020]

Master Degree in Mathematics

University of Florence

Country: Italy

Final grade: 110 cum Laude

[10/2015 – 07/2018]

Bachelor Degree In Mathematics

University of Siena

Country: Italy

Final grade: 110 cum Laude

[2010 – 2015]

High-School Diploma

Istituto di Istruzione Superiore Tito Sarrocchi

<https://www.sarrocchi.edu.it/wp/la-scuola/>

Country: Italy

Final grade: 100/100

[25/09/2022 – 30/09/2022]

NetHike 2022

Eidgenössische Technische Hochschule Zürich <https://sn.ethz.ch/nethike.html>

City: Castasegna

Country: Switzerland

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

[25/07/2022 – 05/08/2022]

Mathematics of Machine Learning Summer School

Istituto Nazionale Alta Matematica "Francesco Severi" <https://www.smi-math.unipr.it/past-courses/cortona/summer-graduate-school-mathematics-of-machine-learning/103/>

Country: Italy

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).

[22/07/2019 – 16/08/2019]

Scuola Matematica Universitaria 2019

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

Country: Italy

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.

[10/06/2019 – 14/06/2019]

UCM XIII Modelling Week

Universidad Complutense de Madrid https://www.mat.ucm.es/congresos/mweek/XVI_Modelling_Week/index.htm

Country: Spain

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

[09/2014 – 10/2014]

Leonardo Project

University of Bangor <https://www.bangor.ac.uk/>

Country: United Kingdom

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

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING C1 READING C1 WRITING C1

SPOKEN PRODUCTION C1 SPOKEN INTERACTION 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] **DGMM 2024** Florence

Member of the Organizing Committees.

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

[07/06/2023 – 10/06/2023] **IWOCA 2023** Tainan

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

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

[24/10/2022 – 27/10/2022] **DGMM 2022** Strasbourg

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] **IWCIA 2022** Messina

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

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

[02/05/2022 – 04/05/2022] **TAIR 2022** Milan

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] **WI-IAT 2021** Melbourne

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] **IWOCA 2021** Ottawa

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

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

PUBLICATIONS

- [2023] [Characterizing engagement dynamics across topics on Facebook](#)
- [2023] [MINIMUM SURGICAL PROBING with Convexity Constraints](#)
- [2022] [Structure and Complexity of 2-Intersection Graphs of 3-Hypergraphs](#)
- [2022] [Growing polarization around climate change on social media](#)
- [2022]
- [Properties of SAT Formulas Characterizing Convex Sets with Given Projections](#)
- [2023]
- [The Generalized Microscopic Image Reconstruction Problem for Hypergraphs](#)
- [2022] [Conspiracy theories and social media platforms](#)
- [2022]
- [Reliability of Content and Echo Chambers on YouTube during the COVID-19 Debate](#)
- [2021]
- [How Virtual Reality Influenced Emotional Well-being Worldwide During the Covid-19 Pandemics](#)
- [2021]
- [Virtual Reality for Enhancement of Emotional Mindset in the First Lockdown of United Kingdom for the Covid-19 Pandemics](#)
- [2021] [A Study on the Existence of Null Labelling for 3-Hypergraphs](#)
- [2023]
- [A study on the predictive strength of fractal dimension of white and grey matter on MRI images in Alzheimer's disease](#)

HONOURS AND AWARDS

- [2022] **Best Paper for PhD student Award** [profile.honour-award.edit-form.institution](#): IEEE/ACM/WIC Web Intelligence conference

NETWORKS AND MEMBERSHIPS

- [2022 – Current] **IRIS Accademic Research Group**
Link: <https://www.irisacademic.org/>