

Nicola Rosetti

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SUMMARY

I am a hardworking, diligent and sociable person, always willing to cooperate, listen to others' opinion and ready to welcome new ideas. I am extremely organized and this allows me to accomplish all my duties and at the same time pursue my passions that run from sport to art: I am a second Dan black belt in taekwondo and twice third Italian champion, I had a career as a ballet dancer and I have been student representative both in high school and University. Determination is indeed my core quality, but what really identifies me is the eagerness and passion I put in my deed. I am extremely curious, always enthusiastic of learning and discovering. I believe in people as the most precious resource we have, for this reason I always encourage team working.

WORK EXPERIENCE

Teaching assistant for MA3K0 High-dimensional probability at University of Warwick, Jan-March 2024.

Teaching assistant for MA263 Multivariable Analysis at University of Warwick, Jan-March 2024.

Secondary school teacher Jan - June 2022.

PROJECTS

Master thesis: The geometry of the deep neural networks

Supervisor: Emanuele Latini, professor of geometry at University of Bologna.

Co-supervisor: Rita Fioresi, professor of geometry at University of Bologna.

The aim of the thesis is to study the geometric properties of deep neural networks with the goal to better understand their working and possibly improve their efficiency.

Grad-tensor algorithm

Reproduced the algorithm proposed in the article: S. Zubair and Wenwu Wang, "Tensor dictionary learning with sparse Tucker decomposition," 2013 18th International Conference on Digital Signal Processing (DSP), 2013, pp. 1-6, doi: 10.1109/ICDSP.2013.6622725.

Bachelor thesis on Rademacher's Theorem

Supervisor: Giovanni Cupini, professor of analysis at University of Bologna.

In the thesis it has been proven the theorem in two different ways: a more direct one by means of measure theory and a second one with the use of Sobolev spaces. In the end, an application to convex functions was proposed.

EDUCATION

2023 - present PhD at Warwick university, supervised by Dr. Stefan Adams.

2021 - 2023 master in Advanced mathematics for applications at **University of Bologna** Graduation mark 110/110 cum laude.

2023 Jan-Feb Phd course on deep neural networks by **Rita Fioresi, University of Bologna**.

2022 Nov seminar on Hopf monoids and polynomial invariants by **Marcelo Aguiar, Cornell University**.

2018 - 2021 Bachelor's Degree at **University of Bologna** Graduation mark 107/110.

2021 Apr seminar on mathematical methods for animation by **Gian Marco Todesco** owner of **Digital Video s.p.a.**

2020 -2021 Exchange year at **Cardiff university**.

2018 high school graduation, Liceo scientifico

Mark 100/100.

SKILLS

Technical skills Basic knowledge of Python, Matlab.

Languages Mother tongue Italian, Advanced knowledge of English (TOEFL 102/120, IELTS 7.0); basic knowledge of Spanish and French.

Transversal skills I am passionate about teaching and I can speak to large audiences; I enjoy working in group and thanks to my joyful personality I usually create a cooperative and more productive environment. I am good at sports and cooking.