Danilo **Numeroso**

PHD STUDENT · COMPUTER SCIENCE

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Education

PhD in Computer Science, UNIVERSITY OF PISA – ITALY   *Nov. 2020 – Ongoing*
- **Research area:** *Neural Algorithmic Reasoning; Learning for Graphs.*

MSc in Computer Science, UNIVERSITY OF PISA – ITALY   *Sep. 2018 – Oct. 2020*
- **Thesis:** *Explaining Deep Graph Networks with Structured Counterfactual Generation* (with honours).

BSc in Computer Science, UNIVERSITY OF PARMA – ITALY   *Sep. 2014 – Dec. 2017*
- **Thesis**: *A GPU implementation for the adjacency test in Chernikova's procedure* (with honours).

Experience

Visiting PhD, UNIVERSITY OF EINDHOVEN – NETHERLANDS   *May. 2022 - Sep. 2022*
- Co-organiser of EURO meets NeurIPS Vehicle Routing Competition 2022.
- Worked on neural models for Dynamic VRPs under the supervision of Prof. Yingqian Zhang.

Teaching Assistant, UNIVERSITY OF PISA – ITALY   *Feb. 2021 - Dec. 2021*
- Course: Principles of Programming.
- Organised and held lab sessions.

Full-Stack Developer, NOVEDGE LLC – SAN FRANCISCO [REMOTE WORK]   *Aug. 2016 - May. 2019*
- Designed and developed web applications in Typescript and React.js for supporting sales processes.

Publications

- D. Numeroso, D. Bacciu, P. Veličković, *Learning heuristics for A**. Workshop on Anchoring Machine Learning in Classical Algorithmic Theory, ICLR, 2022.
- D. Bacciu, D. Numeroso*****, *Explaining Deep Graph Networks via Input Perturbation*. Transactions on Neural Networks and Learning Systems (TNNLS), Journal, 2022. **(* First author – alphabetical order)**
- D. Numeroso, D. Bacciu, *MEG: Generating Molecular Counterfactual Explanations for Deep Graph Networks.*. International Joint Conference on Neural Networks (IJCNN), 2021.
- D. Numeroso, D. Bacciu, *Explaining Deep Graph Networks with Molecular Counterfactual*. Workshop on Machine Learning for Molecules, NeurIPS, 2020.

Projects

Role, *github.com/danilonumeroso/role*
- Implemented from scratch a Reinforcement Learning agent that learns to play chess from expert demonstrations (Imitation Learning). The learning setting exploits action-value function approximation (Deep Q Learning).

Awards

2021   **Special Mention**, *Best Master Thesis Award*, 20th International Conference of the Italian Association for   *Milan, Italy*
        Artificial Intelligence

Skills

Programming	Python, Javascript/Typescript, C++
Frameworks	PyTorch, PyTorch Geometric.
Languages	Italian (native), English (C1) – Cambridge Certificate ref. B2412347, Spanish (B1)