

Davide D'Ascenzo

ITALIAN NATIONAL PHD STUDENT IN ARTIFICIAL INTELLIGENCE

Department of Computer Science
University of Milan

✉ davide.dascenzo@unimi.it | 🏠 kidara.github.io | 📄 github.com/Kidara

Research Interests

Theoretical Deep Learning Geometric Deep Learning Graph Neural Networks

Education

Télécom Paris

Palaiseau, France

VISITING PHD STUDENT

03/2025 - 08/2025

- Advisor: Prof. Stefano Zacchiroli

Massachusetts Institute of Technology

Cambridge, MA, USA

VISITING PHD STUDENT

08/2024 - 01/2025

- PI: Prof. Tomaso Poggio

University of Milan - Polytechnic University of Turin

Milan, MI, Italy

ITALIAN NATIONAL PHD PROGRAM IN ARTIFICIAL INTELLIGENCE

11/2022 - 11/2025

- Advisor: Prof. Sebastiano Vigna
- Co-advisor: Prof. Nicolò Cesa-Bianchi

University of Milan

Milan, MI, Italy

MS COMPUTER SCIENCE

2020 - 2022

- Thesis: Edge Message-Passing Neural Networks
- Grade: 110/110 cum laude
- Advisor: Prof. Sebastiano Vigna
- Co-advisor: Prof. Paolo Boldi

University of Milan

Milan, MI, Italy

BS COMPUTER SCIENCE

2017 - 2020

- Thesis: Quantification and analysis of ventricular repolarization times from multichannel ECG recordings acquired during angioplasty
- Advisor: Prof. Roberto Sassi
- Co-advisor: Prof. Massimo Walter Rivolta

Conference Publications

Danhofer, D. A.*, **D'Ascenzo, D.***, Dubach, R.*, & Poggio, T. A.* (2025). Position: A Theory of Deep Learning Must Include Compositional Sparsity. *Forty-Second International Conference on Machine Learning Position Paper Track*.

Boldi, P.*, **D'Ascenzo, D.***, Furia, F.*, & Vigna, S.* (2024). Score and Rank Semi-monotonicity for Closeness, Betweenness and Harmonic Centrality. In H. Cherifi, L. M. Rocha, C. Cherifi, & M. Donduran (Eds.), *Complex Networks & Their Applications XII* (pp. 102–113). Cham: Springer Nature Switzerland.

Journal Publications

Boldi, P.*, **D'Ascenzo, D.***, Furia, F.*, & Vigna, S.* (2024). Score and rank semi-monotonicity for closeness, betweenness, and distance-decay centralities. *Social Network Analysis and Mining*, 14(1), 183. doi:10.1007/s13278-024-01285-y

Preprints ---

D'Ascenzo, D., & Cultrera di Montesano, S. (2025). scDataset: Scalable Data Loading for Deep Learning on Large-Scale Single-Cell Omics. *arXiv [Cs.LG]*. doi:10.48550/arXiv.2506.01883

Cultrera di Montesano, S.* , **D'Ascenzo, D.***, Raghavan, S., Amini, A. P., Winter, P. S., & Crawford, L. (2025). Hierarchical cross-entropy loss improves atlas-scale single-cell annotation models. *bioRxiv*. doi:10.1101/2025.04.23.650210

Presentations ---

Invited Speaker, February 2025. *Research in the era of LLMs*. Center for Complexity & Biosystems, University of Milan.

Invited Speaker, December 2022. *Hands-on Graph Neural Networks with Pytorch*. Center for Complexity & Biosystems, University of Milan.

Teaching Experience ---

Spring
2024 **DeepLife - Deep-learning for life sciences**, Teaching Assistant *University of Milan*

Review Activity ---

Web Conference 2023, ICDCS 2023, WSDM 2024, Web Conference 2024, ACM Transactions on Internet Technology.

Open-source Contributions ---

scDataset, <https://github.com/Kidara/scDataset>.

Random trees and forests, NetworkX, <https://github.com/networkx/networkx/pull/6758>.