

Elia Cunegatti

- 🌐 Personal Website
- 🐙 GitHub
- 👤 Google Scholar
- 🔗 LinkedIn

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📍 Trento, Italy

EDUCATION

- **University of Trento** Trento, Italy
Ph.D Student - Computer Science November 2022 - Ongoing
- **University of Trento** Trento, Italy
Master Degree in Computer Science Specialization Data Science September 2020 - October 2022
Final Grade: 110 cum Laude/110
- **University of Twente** Enschede, The Netherlands
Master Degree Computer in Science, Exchange Student, Program Erasmus+ August 2021 - February 2022
GPA: 3.9
- **University of Trento** Trento, Italy
Bachelor Degree in Information Engineering and Business Organization September 2017 - September 2020
Final Grade: 107/110

PUBLICATIONS

NETWORK PRUNING

- **2SSP: A Two-Stage Framework for Structured Pruning of LLMs**
Fabrizio Sandri*, **Elia Cunegatti***, Giovanni Iacca
Workshop on Sparsity in LLMs (SLLM) @ ICLR 2025 [paper] [code]
* Equal contribution
- **Zeroth-Order Adaptive Neuron Alignment Based Pruning without Retraining**
Elia Cunegatti, Leonardo Lucio Custode, Giovanni Iacca
Workshop on Sparsity in LLMs (SLLM) @ ICLR 2025 [paper] [code]
- **MULTIFLOW: Shifting Towards Task-Agnostic Vision-Language Pruning**
Matteo Farina, Massimiliano Mancini, **Elia Cunegatti**, Gaowen Liu, Giovanni Iacca, Elisa Ricci
The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2024), June 2024, [paper] [pre-print]
- **Understanding Sparse Neural Networks from their Topology via Multipartite Graph Representations**
Elia Cunegatti, Matteo Farina, Doina Bucur, Giovanni Iacca
Transactions on Machine Learning Research (TMLR), April 2024 [openreview] [paper]
- **Pruning at Initialization vs Random Pruning: Do they Produce Topologically Different Sparse Neural Networks?**
Elia Cunegatti, Doina Bucur, Giovanni Iacca
ICLR 2023 Workshop on Sparsity in Neural Networks, May 2023, [link] [poster]

EVOLUTIONARY COMPUTATION / NETWORK SCIENCE

- **Influence Maximization in Hypergraphs using Multi-Objective Evolutionary Algorithms**
Stefano Genetti, Eros Ribaga, **Elia Cunegatti**, Quintino Francesco Lotito, Giovanni Iacca
Parallel Problem Solving from Nature – PPSN XVIII, Springer International Publishing, Pages 217-235, Hagenberg (Austria), September 2024 [paper] [pre-print]
- **Neuron-centric Hebbian Learning**
Andrea Ferigo, **Elia Cunegatti**, Giovanni Iacca
The Genetic and Evolutionary Computation Conference (GECCO 2024), July 2024, (Oral), [paper] [pre-print]
- **Many-Objective Evolutionary Influence Maximization: Balancing Spread, Budget, Fairness, and Time**
Elia Cunegatti, Leonardo Lucio Custode, Giovanni Iacca
The Genetic and Evolutionary Computation Conference (GECCO 2024), July 2024, (Poster), [paper] [pre-print]
- **Large-scale Multi-objective Influence Maximization with Network Downscaling**
Elia Cunegatti, Giovanni Iacca, Doina Bucur
Parallel Problem Solving from Nature – PPSN XVII, Springer International Publishing, Pages 207–220, Dortmund, September 2022 [paper] [pre-print]

TEACHING EXPERIENCES

- **University of Trento** Trento, Italy
Teaching Assistant, Bio-Inspired Artificial Intelligence (MSc Course) September 2024 - Ongoing
- **University of Trento** Trento, Italy
Teaching Assistant, Optimization Techniques (MSc Course) February 2024 - July 2024
- **University of Trento** Trento, Italy
Teaching Assistant, Computer Architectures (BSc Course) February 2023 - Ongoing

RESEARCH EXPERIENCES

- **University of Twente** Enschede, The Netherlands
Research Internship, Exchange Student March 2022 - July 2022
 - **Project:** Research period within the EEMCS Department of the University of Twente. The focus of the research was on the application of AI to complex networks. In detail, we tried to link together two different fields of Computer Science: Network Science and Deep Learning. We strive our work to understand the correlation between Network Topologies and the performance of Sparse Neural Networks.

CONFERENCES

- GECCO 2024 - The Genetic and Evolutionary Computation Conference July 14 - 18, 2024, Melbourne, Australia
- Computer Vision Pattern Recognition (CVPR) 2024, Seattle, Washington (USA), 17-21 June 2024
- ICLR 2023 Workshop on Sparsity in Neural Networks: On practical limitations and tradeoffs between sustainability and efficiency, Rwanda, 5th May 2023 (Virtual Attendance)
- 17th International Conference on Parallel Problem Solving from Nature (PPSN XVII), Dortmund (Germany), 10-14 September 2022

REVIEWER

TMLR, ALIFE, Information Science, IEEE Transactions on Knowledge and Data Engineering (TKDE)

HONORS AND AWARDS

- Scholarship for attending ICLR 2023 Conference · May 2023
- Cisco Scholarship (awarded with Matteo Farina) · May 2023
- PhD Scholarship (funded by the *University of Trento*) · from November 2022 to November 2025
- Scholarship Research Abroad (funded by the *University of Trento*) · March 2022
- Scholarship Erasmus+ (funded by both *European Union* and the *University of Trento*) · March 2021
- Community Interest Degree Award · 2019, 2021
- University of Trento Merit Scholarship · 2019, 2020, 2021, 2022

STUDENT THESIS SUPERVISION

- Riccardo Lunelli (MSc Student) - Backpropagation meets contrastive neuron-centric Hebbian learning - July 2024
- Davide Guidolin (MSc Student) - Neuron-Centric Hebbian Learning for Convolutional Networks - March 2023
- Stefano Viel (BSc Student) - Exploring the Impact of Multiple Objectives on the IM Problem - October 2023

SKILLS SUMMARY

- **Languages:** Python, C++, Java, C#
- **Frameworks:** PyTorch, Networkx, igraph, Pandas, Inspyred, Matplotlib, DEAP, numpy, Scikit, Numba
- **Tools:** Git, Bash
- **Platforms:** Linux, MacOS
- **Soft Skills:** Group Work, Time Management, Writing, Organization

LANGUAGES

- Italian · Native Speaker
- English · C1 Level