

Education

- 2023–present **PhD in Computer Science**, *Free University of Bozen Bolzano, Italy*, Supervisor: Prof. Giuseppe Di Fatta, Co-Supervisor: Prof. Giuseppe Nicosia.
Multi-Task Learning, Multi-objective Optimization, Machine Learning and Deep Learning
- 2021–2023 **Master's Degree in Computational Data Science**, *Free University of Bozen Bolzano, Italy*.
Grade: 110/110 cum laude
- 2020 **Bachelor's Degree in Statistical and Economic Science**, *Università degli Studi di Milano-Bicocca, Italy*.

Publications

In Conference Proceedings

- 2026 Andrea Rosani, Giorgio Jansen, Jole Costanza, Thomas Borsani, Giuseppe Di Fatta, and Giuseppe Nicosia. Multi-objective evolutionary optimisation for enhanced ethanol production under mixed carbon sources. In *IEEE Conference on Artificial Intelligence*, pages 556–563, 2026.
- 2026 Moritz Mock, Thomas Borsani, Giuseppe Di Fatta, and Barbara Russo. Beyond balance—addressing class imbalance in fine-tuning deep learners. *Science of Computer Programming*, volume 253, page 103474, 2026.
- 2026 Thomas Borsani, Andrea Rosani, Giuseppe Nicosia, and Giuseppe Di Fatta. Gradient similarity surgery in multi-task deep learning. In *Machine Learning and Knowledge Discovery in Databases. Research Track and Applied Data Science Track*, pages 95–111, 2026.
- 2026 Thomas Borsani, Andrea Rosani, and Giuseppe Di Fatta. High-quality data augmentation for code comment classification. In *IEEE/ACM International Workshop on Natural Language-Based Software Engineering (NLBSE)*, 2026.
- 2026 Thomas Borsani, Giuseppe Nicosia, and Giuseppe Di Fatta. Multi-task deep learning for the multi-label prediction of neurodegenerative diseases. In *IEEE Conference on Artificial Intelligence*, pages 159–166, 2026.
- 2025 Moritz Mock, Thomas Borsani, Giuseppe Di Fatta, and Barbara Russo. Optimizing deep learning models to address class imbalance in code comment classification. In *IEEE/ACM International Workshop on Natural Language-Based Software Engineering (NLBSE)*, pages 45–48, 2025.
- 2025 Hafiz Muhammad Ali Bhatti, Thomas Borsani, Andrea Rosani, and Giuseppe Di Fatta. Interpretable mri-based biomarkers for alzheimer's disease classification. In *International Conference on Brain Informatics*, 2025.

Accepted Conference

- 2026 Thomas Borsani, Andrea Rosani, and Giuseppe Di Fatta. From accuracy to understanding: Rashomon ensembles for alzheimer's disease classification. In *International conference on Advanced Machine Learning and Data Science*, 2026.
- 2026 Thomas Borsani and Giuseppe Di Fatta. Gradient surgery for physics-informed neural networks. In *Asian Conference on Machine Learning*, 2026.

Research Experience

Swiss Federal Research Institute WSL

2020 – 2021 **Temporary staff.**

Developed spatial statistical models for the analysis of lightning-caused wildfire ignition, incorporating georeferenced environmental datasets (weather, fuel moisture, topography). Designed and implemented automated data pipelines (Bash and R) for the acquisition, cleaning, and preprocessing of large-scale NetCDF climate and remote-sensing datasets. Performed geospatial statistical analysis and generated cartographic visualizations in R to identify spatial patterns in high-dimensional environmental data.

Advisor: **DR. Marco Conedera** (marco.conedera@wsl.ch)

Fellowships & Awards

2026 Receipt of **IEEE CIS Graduate Student Research Grant** for a visiting period abroad at the *London School of Economics and Political Science (LSE)*, under the supervision of Prof. Zoltán Szabó.

Computer skills

Programming Languages Python, (PyTorch, NumPy, SciPy), R, SQL

Language Skills

Italian Native proficiency
English C1 level (TOEFL 2026)

Position of Responsibility

2023 – 2024 **PhD Student Representative**, *Faculty of Engineering, PhD school in Computer Science, UNIBZ*, Represented PhD students in meetings with faculty and administration on academic and organizational matters..

2026 **Organising Committee Member**, *NLBSE Workshop @ ICSE*, Dublin, Comments Competition Organizer - coordinated logistics and reviewed submissions for the shared task track of the International Workshop on Natural Language-based Software Engineering, co-located with International Conference on Software Engineering (ICSE).

Teaching

Fall, 2025 : **42419: Artificial Intelligence and Machine Learning**, *Teaching Assistant*, Free University of Bozen-Bolzano.

Referees

Professor Giuseppe Di Fatta
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Bozen-Bolzano, Italy
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Professor Giuseppe Nicosia
Associate Professor, Department of
Computer Science & Engineering
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