

UMBERTO DI LAUDO

Data Scientist | PhD in AI & Data Science

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[Umberto Di Laudo](#)

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Trieste, Italy

ABOUT ME

PhD in AI & Data Science with a background in theoretical physics. Experienced in developing deep learning models for computer vision tasks (image classification, semantic segmentation) and solving PDEs with Physics-Informed Neural Networks. Designed and trained deep learning models on SLURM-based HPC clusters, working with large-scale geospatial datasets and implementing reproducible training pipelines. Personally interested in LLMs and RAG pipelines, with hands-on experience building document Q&A systems for personal use.

TECHNICAL SKILLS

- **Languages & Frameworks:** Python (PyTorch, scikit-learn, pandas, numpy, Flask, Streamlit), C++, SQL, Bash
- **ML/AI:** Deep Learning, Computer Vision, Graph Neural Networks, Physics-Informed Neural Networks (PINNs), RAG
- **Tools:** Git, HPC (SLURM), Linux, Docker, Jupyter

PROFESSIONAL EXPERIENCE

PhD Researcher in AI & Data Science

University of Trieste, Italy

Nov 2022 – Jan 2026

Trieste, Italy

- Developed ML/DL models for automated marine seabed mapping using GIS data, applying image classification and semantic segmentation on multibeam bathymetric datasets.
- Built Physics-Informed Neural Networks (PINNs) and Neural ODEs to solve PDEs in a latent space via an autoencoder architecture.
- Investigated the expressive power of message-passing GNNs beyond the Weisfeiler-Leman theorem as visiting researcher at Adolfo Ibáñez University (Chile, Sep-Dec 2025).
- Technologies: Python, PyTorch, scikit-learn, Rasterio, Git, HPC.

Data Analyst

DecHit S.p.A., Italy

Mar – Jun 2022

Milano (remote)

- Analyzed structured business data using SQL.
- Collaborated remotely with technical and business stakeholders.

EDUCATION

- PhD in Data Science & Artificial Intelligence
University of Trieste, Italy

Nov 2022 – Jan 2026

- Master's Degree in Theoretical Physics
Alma Mater Studiorum – University of Bologna, Italy

Sep 2019 – Feb 2022

Grade: 110/110 (avg 29.58/30)

- Bachelor's Degree in Physics
Alma Mater Studiorum – University of Bologna, Italy

Sep 2016 – Sep 2019

Grade: 110/110 (avg 28.02/30)

PUBLICATIONS & CONFERENCES

- U. Di Laudo, et al., *Machine Learning for Automated Seabed Mapping*, in Ital-IA 2024 – Thematic Workshops, CEUR Workshop Proceedings, vol. 3762, 2024. URL: <https://hdl.handle.net/11368/3118040>
- U. Di Laudo, S. Ceramicola, L. Manzoni, *Artificial Intelligence and Machine Learning for the Automated Classification of the Seabed*, International Geological Congress 2024 - Oral presentation, 25–31 Aug 2024, Busan, Republic of Korea

LANGUAGES

- **Italian:** Native
- **English:** Professional working proficiency