# UMBERTO DI LAUDO

## Data Scientist | PhD in AI & Data Science

umbertodilaudo@gmail.com | +39 3289173372 | Umberto Di Laudo | udilaudo | Website | 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. Comfortable working with large-scale geospatial datasets and deploying models on HPC systems.*

## TECHNICAL SKILLS

- **Languages & Frameworks:** Python (PyTorch, scikit-learn, pandas, numpy, Flask), C++, SQL, Bash
- **ML/AI:** Deep Learning, Computer Vision, Graph Neural Networks, Physics-Informed Neural Networks (PINNs)
- **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** — *Nov 2022 – Jan 2026*
  University of Trieste, Italy
- **Master's Degree in Theoretical Physics** — *Sep 2019 – Feb 2022*
  Alma Mater Studiorum – University of Bologna, Italy — Grade: 110/110 (avg 29.58/30)
- **Bachelor's Degree in Physics** — *Sep 2016 – Sep 2019*
  Alma Mater Studiorum – University of Bologna, Italy — 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