Telmo Cunha

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Education

- **University of Lisbon - Instituto Superior Técnico (IST)** — Lisbon, Portugal
  Master's in Applied Mathematics and Computation - Current GPA: 17/20 — *2020 - 2024*

  Working on my master's thesis in the topics of Nonlinear Wave Equations and Mathematical Relativity with Profs. João Costa and Pedro Girão.

  Courses: Foundations of Topology and Real Analysis; Groups, Rings and Modules; Ordinary Differential Equations; Partial Differential Equations; Differential Topology; Riemannian Geometry; Geometric Mechanics; Mathematics for Machine Learning; Nonlinear Optimization; Reinforcement Learning; Research Project in Geometric Quantization; Seminar course in Statistical Learning Theory and the Neural Tangent Kernel.

- **École Polytechnique Fédérale de Lausanne (EPFL)** — Lausanne, Switzerland
  Swiss-European Mobility Programme in Theoretical Physics — *2016 - 2017*
- **University of Lisbon - Instituto Superior Técnico (IST)** — Lisbon, Portugal
  Bachelor's in Engineering Physics - GPA: 15/20 — *2012 - 2018*

Experience

- **Research Assistant at Aalto University** — Helsinki, Finland
  Studying equivariant properties of graph neural networks under the guidance of Prof. Vikas Garg. — *April 2023 - September 2023*
- **Altice Foundation - Khan Academy** — Lisbon, Portugal
  Translation of mathematical content on Khan Academy from English to Portuguese. — *December 2019 - April 2020*
- **Summer Research Internship at Instituto Gulbenkian de Ciência (IGC)** — Oeiras, Portugal
  Modeling the evolution of cells with varying centriole numbers in cancer. — *June 2016 - August 2016*

Extracurricular

- **Summer School - LxMLS22** — Lisbon, Portugal
  Lisbon Machine Learning Summer School. — *2022*
- **MOOC - DeepLearning.AI Course** — Coursera
  Neural Networks and Deep Learning. — *2022*
- **MOOC - MIT 6.0001 Course** — edX
  Introduction to Computer Science and Programming Using Python. — *2021*
- **Summer School - University of Würzburg** — Würzburg, Germany
  Aerospace Information Technology. — *2015*
- **Author at PULSAR Magazine** — Lisbon, Portugal
  Writer for the physics student magazine at IST. — *2014 - 2015*

Skills Summary

- **Languages**: Portuguese (Native); English (Fluent); French/Spanish (Basic reading).
- **Programming Languages**: Python (Pytorch/Numpy/Scikit-learn/Pandas); C/C++; R.
- **Tools**: Mathematica; LaTeX.

Academic Projects

- **Mathematical Foundations of Machine Learning**: Wrote a set of notes exploring the basics of Learning Theory, Machine Learning and Kernel Methods, see [mathematical foundations of deep learning].
- **Manifold Learning**: Two projects for the courses in mathematics for machine leaning and nonlinear optimization on manifold learning, see [manifold learning].
- **Feature Selection**: A project for the course in mathematics for machine leaning on feature selection via information theoretic considerations, see [feature selection].
- **Collaborative Filtering**: A project for the course in mathematics for machine leaning on collaborative filtering for a movie recommendation system based on matrix factorization methods, see [collaborative filtering].
- **Geometric Quantization**: A research project exploring the basic mathematical setup for geometric quantization, see [geometric quantization].