

# Telmo Cunha

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## EDUCATION

- **University of Lisbon - Instituto Superior Técnico (IST)** Lisbon, Portugal  
*Master's in Applied Mathematics and Computation (working on the master's thesis) - GPA: 17/20* 2023  
*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, Machine Learning and Kernel Methods.*
- **École Polytechnique Fédérale de Lausanne (EPFL)** Lausanne, Switzerland  
*Swiss-European Mobility Programme in Theoretical Physics* 2017
- **University of Lisbon - Instituto Superior Técnico (IST)** Lisbon, Portugal  
*Bachelor's in Engineering Physics - GPA: 15/20* 2019

## EXPERIENCE

- **Research Assistant at Aalto University** Helsinki, Finland  
*Theoretical aspects of Graph Neural Networks* April 2023 - September 2023
- **Altice Foundation** 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

- **PyTorch for Deep Learning (ZTM) (In Progress)** MOOC, Udemy  
*Course on the deep learning Pytorch framework* 2023
- **LxMLS22** Lisbon, Portugal  
*Lisbon Machine Learning Summer School* 2022
- **DeepLearning.AI Course** MOOC, Coursera  
*Neural Networks and Deep Learning* 2022
- **MIT Course** MOOC, edX  
*Introduction to Computer Science and Programming Using Python* 2021
- **University of Würzburg Summer School** Würzburg, Germany  
*Aerospace Information Technology* 2015
- **Author at PULSAR Magazine** Lisbon, Portugal  
*Writer for the physics student magazine at IST* 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;  $\text{\LaTeX}$ .

## 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 learning and nonlinear optimization on manifold learning, see [manifold learning].
- **Feature Selection:** A project for the course in mathematics for machine learning on feature selection via information theoretic considerations, see [feature selection].
- **Collaborative Filtering:** A project for the course in mathematics for machine learning on collaborative filtering for a movie recommendation system based on matrix factorization methods, see [collaborative filtering].
- **Geometric Quantization:** A research project, part of the master's in mathematics, exploring the basic mathematical setup for geometric quantization, see [geometric quantization].