Adrián Rodríguez-Muñoz
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Education

- **Massachusetts Institute of Technology (MIT)** — Cambridge, United States
  PhD Student - AI and Computer Vision for decision-making advised by Prof. Antonio Torralba — *September 2022 - Current*
- **Universitat Politecnica de Catalunya (UPC)** — Barcelona, Spain
  Bachelor in Mathematics; 9.53/10 (rank 3) — *2017 - 2022*
- **Universitat Politecnica de Catalunya (UPC)** — Barcelona, Spain
  Bachelor in Data Science and Engineering; 9.58/10 (rank 1) — *2017 - 2022*

Degrees done concurrently as part of the CFIS-UPC (Centre de Formació Interdisciplinaria Superior) program.

- **American School of Barcelona** — Barcelona, Spain
  International Baccalaurate (IB); 9.1/10 (41/45 points in the IB scale) — *2015 - 2017*

Publications

- **Characterizing Model Robustness via Natural Input Gradients** — ECCV 2024
  ***Adrián Rodríguez-Muñoz**, Tongzhou Wang, Antonio Torralba*
- **A Vision Check-up for Language Models** — CVPR 2024 (Spotlight)
  PS, TRS*, MB, SF, **ARM**, SD, PI, AT*
- **Aliasing is a Driver of Adversarial Attacks** — arXiv 2022
  ***Adrián Rodríguez-Muñoz**, Antonio Torralba*

Additionally, i'm currently working on a submission on using procedural data to solve vision tasks without training on real images, an approach that offers strong privacy and data governance benefits as well as interesting new insights on machine perception.

Work Experience

- **Quantitative Trading Intern at Susquehanna International Group** — Dublin, Ireland
  Trading intern in the peripheral index options desk — *June 2022-Aug 2022*
- **Research Intern at Aspect Capital** — London, England
  Development of Systematic Macro Relative Value investment strategies — *June 2021-Aug 2021*
- **Collaborating Student at ZeClinics** — Barcelona, Spain
  Development of specialized deep learning pipeline for zebrafish segmentation. — *January 2021-June 2021*
- **Co-founder and researcher at Vixnio Technologies** — Barcelona, Spain
  Development and backtesting of Deep Learning models for quantitative trading — *June 2020-May 2021*
- **Research Student at Barcelona Supercomputing Center** — Barcelona, Spain
  Using recurrent neural nets (LSTM+AdaptiveLogSoftmax) for synthetic memory trace generation — *July 2019-Sept 2019*

Technical Skills

- **Deep Learning and Computer Vision with the PyTorch Python library**
- **Data processing and Machine Learning with Numpy, Pandas, and Scikit Python libraries**
- **Algorithms and Data Structures in C++**
- **Distributed cluster computing with SLURM (e.g. multi-node distributed training)**
- **Scientific reviewing (TMLR, TPAMI, ECCV FoMo)**
- **Data analysis with the R Statistical Computing Language**: Familiarity with the R language and the R Studio environment, and its application to basic data processing, lm, glm, PCA, CA, and others.
- **Numerical processing with Matlab**
- **Data processing with Excel**

Awards

- **Aily Labs Best Academic Record Award**: Prize given to the top academic record in the Data Science and Engineering major, funded by Aily Labs
- **Esperanto Technologies Best Academic Record Award**: Prize given to the top three ex-aequo academic records in the CFIS-UPC program, funded by Esperanto Technologies
- **La Caixa Fellow 2022**: Awarded scholarship to pursue graduate studies in the US by the La Caixa foundation
- **Aspect Capital Algothon 2021**: 1st place at the 2021 Algothon, organized by the Imperial College Algorithmic Trading Society and Aspect Capital
- **2021 Spain G-Research Quant-Trading Challenge.**: 1st place at the 2021 Spain G-Research Quant-Trading Challenge
- **HackUPC2019**: 2nd place at the McKinsey Challenge at the HackUPC2019 hackathon
- **CFIS double scholarship**: Academic-based full scholarship given to around 6 freshmen every year at UPC
- **Mathematics Olympiad**: Bronze medal at the 2017 Spanish Mathematical Olympiad

Non-Technical Skills

- **English**: Proficiency level (Michigan Test C2) and 118/120 on the TOEFL. Extensive experience in written and oral communication: 7 years of schooling at the American School of Barcelona, high school during 1 year in Los Altos, California, and 2 years as a PhD student at MIT.
- **Strong analytical skills and creative and rigorous thinking**: Ability to think creatively and rigorously when solving problems; trained by proving many mathematical theorems and propositions.
- **Time management**: Strong time management and self-scheduling skills.
- **Spanish and Catalan**: Native level in speaking and writing.