

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 Politècnica de Catalunya (UPC)** Barcelona, Spain
Bachelor in Mathematics; 9.53/10 (rank 3) 2017 - 2022
- **Universitat Politècnica 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 Interdisciplinària Superior) program.

- **American School of Barcelona** Barcelona, Spain
International Baccalaureate (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 fully in-context, without any descent training on real images and with ideal (k=1) data compartmentalization.

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 1 year 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.