

ALVARO RIBOT

Cambridge, MA ◊ (+34) 664 517 414 ◊ aribotbarrado@g.harvard.edu

EDUCATION

Harvard University Expected 2028

Ph.D. in Applied Mathematics

Advisor: Anna Seigal

Polytechnic University of Catalonia - UPC June 2023

Bachelor in Mathematics

GPA: 8.9/10

Polytechnic University of Catalonia - UPC June 2023

Bachelor in Data Science and Engineering

GPA: 8.7/10

I took part in **CFIS**, an excellence center that selects some of the best technical students from Spain allowing them to pursue two bachelor's degrees simultaneously.

WORK EXPERIENCE

Massachusetts Institute of Technology September 2022 - May 2023

Visiting Student

Cambridge, MA

Pursued my bachelor's thesis on Causal Representation Learning. Advised by Prof. Caroline Uhler. Working at MIT IDSS and at the Broad Institute of MIT and Harvard.

ICMAT – Institute of Mathematical Sciences June 2021 - October 2021

Research Fellow

Madrid, Spain

- Grant programme Severo Ochoa - ICMAT: Introduction to Research 2021.
- Project: Equivalence of solutions in non-linear elliptic PDEs.
- Advisor: Prof. Maria Medina de la Torre
- Studied the p -Laplace equation and how the weak solutions coincide with the viscosity solutions.

Barcelona Supercomputing Center July 2021 - September 2021

Research Intern

Barcelona, Spain

- I worked in the Computational Earth Sciences group.
- Project: AI for localization of methane emission sources.
- Advisor: Dr. Carlos Alberto Gomez Gonzalez
- Used CNNs for the segmentation of wastewater treatment plants using Sentinel-2 images.

HP July 2020 - September 2020

Data Science Intern

Barcelona, Spain

- I worked in the Large Format Printing Big Data and Analytics team.
- Analysed Covid-19 impact on the company using different data and providing interactive plots.
- Developed some clustering models and Time Series forecasts using Python.

RESEARCH INTERESTS

Applied algebra, tensor decomposition, algebraic statistics, causality, machine learning theory

TEACHING EXPERIENCE

CFIS – Interdisciplinary Higher Education Centre

September 2021 - June 2022

Student Mentor, Teaching Assistant

Barcelona, Spain

- I was the mentor of 8 first-grade Mathematics and Data Science students at CFIS.
- My goal was to answer their doubts and solve problems about the courses they are taking.
- I also was the teaching assistant of a course on Fourier Analysis.

Club Padua

September 2019 - January 2020

Programming Teacher

Barcelona, Spain

- Scholarship to teach C++ lessons at Club Pàdua, a high school students organization.

ACADEMIC ACHIEVEMENTS

”la Caixa” Foundation fellowship. Full funding for my PhD studies, starting Fall 2024.

Real Colegio Complutense fellowship. Partial funding for my PhD studies, AY 2023-2024.

CFIS program. Tuition scholarship for academic excellence that covers half of the college credits.

Professional Music Diploma, Violin Speciality (June 2022), at Trémolo Formació Musical.

Baccalaureate with Honours (May 2018). Best score out of 84 students. Full cover of the college credits during the first year of University.

Cangur Mathematical Competition. I came in second, both in 2016 (nine thousand participants) and 2018 (four thousand participants). I also received the ”Pin de plata” award from SCM.

RELEVANT COURSES

JAE School of Mathematics 2021, at ICMAT.

Introduction to Research, at Facultat de Matemàtiques i Estadística - UPC.

Machine Learning and Deep Learning, at CFIS.

Game Theory, at CFIS.

SKILLS

Programming C/C++, Python, R, SQL, MATLAB, Julia; TensorFlow, PyTorch

Software & Tools Unix/Linux, LaTeX, Github, AWS

Languages Spanish, Catalan (native); English (proficient); French (elementary)

ABOUT ME

Volunteer Experience: I volunteered at Hospital Sant Joan de Déu during 2017, helping doctors take care of children. I also helped as an instructor of a children club called Braval in 2018.

Sports: I played for my school football team all my childhood. Nowadays, I play in futsal leagues with my friends. I also love skiing at winter and doing mountain trips at summer.