

## Personal Profile

Undergraduate student of Mathematics and Data Science, at Universitat Politècnica de Catalunya (UPC), with academical and professional experience on machine learning, Python development, pure mathematics, statistics and algorithmics. Currently pursuing my Bachelor's Final Thesis at Massachusetts Institute of Technology (MIT).

## Education

### Universitat Politècnica de Catalunya

Barcelona, Spain

BS in Mathematics and Data Science

Sept 2018 - Current

- Majoring in both degrees enrolled in an excellence national scholarship program
- Relevant Courses: Machine Learning, Reinforcement Learning, Image Processing, Probability Theory, Statistics, Differential Equations
- Current Grade: 8.1/10

### Massachusetts Institute of Technology (MIT)

Cambridge, MA, United States

BS Final thesis

Sept 2022 - Current

- Visiting student at MIT for a +6 months stay to develop the final degree thesis.
- Enrolled in the MechE department on a Machine Learning and Robotics related project.
- Working with descriptors for non-rigid/deformable objects, which can give a practical characterization of them and enable their robotic manipulation, from a task-agnostic point of view.

### Aula Escola Europea

Barcelona, Spain

National Baccalaureate

September 2016 – June 2018

- Awarded with a full tuition scholarship for academic excellence
- Final Grade: 8.2/10

### Aula Escola Europea

Barcelona, Spain

International Baccalaureate (IB)

September 2016 – June 2018

- Awarded with a full tuition scholarship for academic excellence
- Final Grade: 9.0/10

## Work Experience

### Starlab - Neuroscience

Barcelona, Spain

Machine Learning Intern

July 2021 – September 2021 ; January 2022 - March 2022

- Developed the Denoising LSTM Autoencoders for EEG artifact detection and removal project, under the supervision of Dr. Aureli Soria-Frisch.
- Performed signal processing through deep learning for rare events detection and correction.
- Presented the project in the 2022 INCF Assembly

### Informatics and Robotics Institute (IRI)

Barcelona, Spain

Machine Learning Intern

September 2020 – June 2021

- Developed the TASC: Topological Analysis of Simulated Cloth manipulations project, leaded by Dr. Fabio Strazzeri.
- Performed statistical analysis over a representation of deformable materials based on combinatorial topology
- Implemented Machine Learning approaches in order to achieve a stratification of cloth deformation for further robotic manipulation.

### Institute of Photonic Sciences (ICFO)

Barcelona, Spain

Research Intern

June 2017 – August 2017

- Collaboration in the Theoretical Quantum-Nano Photonics group, supervised by Prof. Darrick Chang.
- Project focused on the development of a Fourier-transformation-based algorithm for image compression.

## Projects

### GPS Telegram Bot

Barcelona, Spain

Universitat Politècnica de Catalunya (UPC)

April 2020 - June 2020

- Developed a Telegram bot (coded in Python) providing live-location guidance.
- The bot provides detailed instructions on the fastest route from the current location to a demanded destination.
- **Technical Skills:** Python, Algorithmics.

## Skills

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<b>Programming</b>	Python, R, C++, HTML/CSS, JavaScript, SQL, Matlab, Hadoop, Spark, Dart.
<b>Miscellaneous</b>	Linux, $\LaTeX$ , Microsoft Office, Firebase, Git.
<b>Machine Learning</b>	Deep Learning, Reinforcement Learning, Image Processing, NLP, Time Series.

## Achievements

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2022	Poster presentation at the 2022 INCF Assembly	<i>Stockholm, Sweden</i>
2021	First place in The Barcelona Challenge - FME datathon	<i>Barcelona, Spain</i>
2018	Academic scholarship for full tuition at CFIS-UPC (University)	<i>Barcelona, Spain</i>
2017	Finalist in the National Olympiad in Informatics	<i>Barcelona, Spain</i>
2017	Finalist in the National Olympiad in Physics	<i>Barcelona, Spain</i>
2016	Academic scholarship for full tuition at Aula Escola Europea (HS)	<i>Barcelona, Spain</i>

## Interests

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<b>Teaching</b>	Private individual teacher and University academy teacher.
<b>Programming</b>	Multiple participations in Datathons and Codeforces
<b>Sports</b>	Federated Basketball player; U-14, U-16 & U-18 Basketball Coach
<b>Volunteering</b>	Assistance on a local food bank

## Languages

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<b>Spanish</b>	Native
<b>English</b>	Professional proficiency
<b>Catalan</b>	Native

References available upon request.