

I am a Physics and Mathematics student at the University of Barcelona, currently in my fifth —and last— year of study. My interests encompass a wide range, from quantum and fluid mechanics to differential geometry and dynamical systems. I am specially intrigued by the geometric description of modern physical theories and phenomena.

EDUCATION

(Expected) June 2025 Sep 2020	University of Barcelona	
	Bachelor of Science in Physics	Grade: 8.51/10
	Bachelor of Science in Mathematics	Grade: 9.0/10
	<ul style="list-style-type: none">- I am enrolled in the dual degree programme in Physics and Mathematics, which admits 20 students annually and allows them to pursue both bachelor's degrees concurrently.- Physics thesis title: How Classical Shadows Improve Quantum Learning.- Mathematics thesis title: Yang-Mills Equations and Gauge Theories.	
June 2020 Sep 2018	Mireia Centre of Studies	
	Technological Baccalaureate	
	<ul style="list-style-type: none">- GPA: 10/10. 1st-ranked student of the class.	

EXPERIENCE

(Expected) June 2025 Sep 2024	Barcelona Supercomputing Centre – BSC	
	<i>Visiting Student</i>	
	<ul style="list-style-type: none">- Pursuing my Physics bachelor's thesis on quantum computing, focusing on classical shadows.- Working in the Quantic group.- Supervisors: Prof. Bruno Julià, Sergi Masot, Berta Casas.	
Sep 2024 July 2024	Institute for Research in Biomedicine – IRB	
	<i>Research Intern</i>	
	<ul style="list-style-type: none">- Studied DNA flexibility under DNA damage using a Coarse-Grained model.- Optimised the current model to account for DNA sequential mismatches.- Devised and implemented new methods to calculate DNA geometric properties.- Worked in the Molecular Modelling and Bioinformatics group.- Supervisors: Prof. Modesto Orozco, David Farré Gil.	
Aug 2023 June 2023	Centre for Mathematical Research – CRM	
	<i>Research Intern</i>	
	<ul style="list-style-type: none">- Worked on a research project centred around transcendental dynamics within the complex exponential family.- Focused on the results obtained by Robert L. Devaney and Michal Krych for a specific parameter value of this family, giving a complete description of the dynamics in this set.- Supervisors: Prof. Núria Fagella, Prof. Xavier Jarque.	

GRANTS AND HONOURS

Sep 2024 July 2024	Maths4Life Awardee	1,200 €
	<ul style="list-style-type: none">- Awarded one of the five grants offered by IRB Barcelona's Maths4Life Programme to conduct research at the intersection of mathematics and biomedicine.	

<i>Present</i> Sep 2021	Excellent Performance 1,500 € - Recipient of the University of Barcelona's honour for exceptional academic performance during university studies.
Sep 2021 Sep 2020	Baccalaureate with Honours 1,700 € - Issued by Generalitat de Catalunya to those students with an excellent academic record during baccalaureate.
Oct 2019 Jan 2019	Mad for Science Programme - Catalunya La Pedrera Foundation has developed the Mad for Science Programme to open the doors of the leading research institutes to exceptional High School students. I participated in the physics course.

ADDITIONAL COURSES

July 2023 Apr 2023	Python for Data Science and Machine Learning – Udemy - Implemented various machine learning algorithms, including k-means clustering, linear and logistic regression, random forest and decision trees, SVMs, and neural networks. - Certificate of completion ↗
Jan 2023	Machine Learning with Python – Coursera - Learnt the fundamentals of machine learning and studied different algorithms, such as linear and logistic regression, SVM, KNN, and decision trees. - Certificate of completion ↗
Dec 2022 June 2022	100 Days of Code: The Complete Python Pro Bootcamp – Udemy - Developed proficiency in Python programming language through building 100 unique projects over 100 days, including automation scripts, web and app development, data science and machine learning models. - Certificate of completion ↗

INVITED TALKS

Sep 2024	Extraordinary BioMed Seminar - Maths4Life 2024 In this seminar organised by IRB, I presented my research work undertaken as a summer intern.
Aug 2023	Barcelona Introduction to Mathematical Research – BIMR 2024 Presented the results I obtained during the summer internship at CRM to an expert audience.

LANGUAGES

Spanish Native Speaker
Catalan Native Speaker
English Advanced Level C1

CODING SKILLS

Languages: Python, C, Mathematica, LaTeX, Bash, SageMath.
Libraries: Pandas, SciPy, NumPy, Scikit-learn, Seaborn, etc.
Other: Experience with Unix/Linux and computational modelling.

VOLUNTEERING AND ACTIVITIES

- **Science Fellows:** initiative of the Catalunya la Pedrera Foundation to develop science communication activities such as expositions in museums and talks in high schools.
- **Problem Solving:** via books and online resources, solving problems is an activity that I perform, enjoy, and continue to learn on a daily basis.