

Marçal Herraiz Bayó

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Personal website ↗

Paris, France

EDUCATION

	Université Paris Sciences et Lettres MSc in Mathematics	Paris, France
Present		
Sept. 2025	<ul style="list-style-type: none">Joint master's between École Normale Supérieure and Université Paris Dauphine.All expenses covered by the FSMP Master Scholarship 2025.	
	University of Barcelona BSc in Mathematics	Barcelona, Spain
June 2025		GPA: 9.02/10
Sept. 2020	<ul style="list-style-type: none">Excellent with honors in 12 subjects.Thesis on flat connections and principal bundles.	Grade: 10/10
	University of Barcelona BSc in Physics	Barcelona, Spain
June 2025		GPA: 8.79/10
Sept. 2020	<ul style="list-style-type: none">Excellent with honors in 10 subjects.Thesis on classical shadows in quantum information. ↗	Grade: 9.7/10

WORK EXPERIENCE

	Westinghouse Nuclear <i>Simulation Modeling Engineer</i>	Madrid, Spain
Present		
July 2025	<ul style="list-style-type: none">Developing software for nuclear power plant simulations.Improving thermal–hydraulics models for accuracy and performance.Contributing to validation and documentation workflows.	

RESEARCH EXPERIENCE

	Barcelona Supercomputing Center – BSC <i>Visiting Student</i>	Barcelona, Spain
June 2025		
Nov. 2024	<ul style="list-style-type: none">Developed a unified strategy to improve quantum measurement efficiency.Demonstrated significant performance gains in many-body quantum systems.Achieved high precision with fewer measurements than standard methods.Supervisors: Prof. Dr. Bruno Julià, Berta Casas, Sergi Masot.	
	Institute for Research in Biomedicine – IRB <i>Research Intern</i>	Barcelona, Spain
Feb. 2025		
July 2024	<ul style="list-style-type: none">Modeled DNA flexibility using a coarse-grained approach.Optimized the model to account for DNA damage.Devised and implemented new methods to calculate DNA geometric properties.Supervisor: Prof. Dr. Modesto Orozco.	
	Center for Mathematical Research – CRM <i>Research Intern</i>	Barcelona, Spain
Aug. 2023		
June 2023	<ul style="list-style-type: none">Studied transcendental dynamics within the complex exponential family.Supervisors: Prof. Dr. Núria Fagella, Prof. Dr. Xavier Jarque.	

HONORS AND AWARDS

	FSMP Master Scholarship	28,000 €
March 2025	• Awarded by the Fondation Sciences Mathématiques de Paris to fully fund my Master's studies at PSL.	
Feb. 2025 Sept. 2021	Excellent Performance <ul style="list-style-type: none">I was awarded “Excellent with Honors” in 16 subjects across the two Bachelor’s degrees at UB.	1,900 €
Nov. 2024	Collaboration Scholarship <ul style="list-style-type: none">Issued by the Spanish Ministry of Education, this scholarship is aimed at university students to conduct research in university departments.	2,000 €
Oct. 2024	CRM Internship Programme Award (declined) <ul style="list-style-type: none">Awarded to bachelor students who want to do their Bachelor’s thesis advised by a researcher affiliated with the CRM.	500 €
July 2024	Maths4Life Award <ul style="list-style-type: none">Awarded one of the five grants from IRB Barcelona’s Maths4Life programme to conduct research at the intersection of mathematics and biomedicine.	1,200 €
Sept. 2020	Honors in Baccalaureate <ul style="list-style-type: none">Awarded to students with an excellent academic record during their baccalaureate. Full coverage of tuition fees for the first year of university.	1,700 €
Oct. 2019 Jan. 2019	Mad for Science Programme <ul style="list-style-type: none">Catalunya La Pedrera Foundation 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.	

INVITED TALKS

June 2025	Research Seminar at BSC <ul style="list-style-type: none">Presented the outcomes of my research stay at BSC.
Sept. 2024	Extraordinary BioMed Seminar – Maths4Life 2024 <ul style="list-style-type: none">In this seminar organized by IRB, I presented my research work undertaken as a summer intern.
July 2023	Barcelona Introduction to Mathematical Research – BIMR 2023 <ul style="list-style-type: none">Presented the results of my summer internship at CRM to an expert audience.

LANGUAGES

Spanish	Native Speaker
Catalan	Native Speaker
English	C1 Level
French	A2 Level

CODING SKILLS

Languages: Python, C, Fortran, R, Bash, Mathematica.
Libraries: Pandas, SciPy, NumPy, Scikit-learn, Seaborn.
Other: Experience with Unix/Linux, computational modeling, and version control.

ADDITIONAL COURSES

- Python for Data Science and Machine Learning** – Udemy ↗
- Machine Learning with Python** – Coursera ↗
- 100 Days of Code: The Complete Phyton Pro Bootcamp** – Udemy ↗