

Personal Profile

Highly-motivated student with **excellent problem solving skills**, a **proven, outstanding capacity for teamwork** and a **rich academic and extracurricular record**.

Ability to **blend people and ideas**, **multi-task** and **thrive under-pressure** ; along with **remarkable organization and analysis skills**.

Education

2024-present	COSSE International MSc (TU Delft, KTH)
2019 - 2024	Mathematics & Physics Engineering Joint Bachelor's Programme (CFIS, UPC) (CFIS is a higher education centre that selects 40 students per year and allows them to complete two bachelor degrees in four and a half years via a highly demanding academic programme, partially financing their studies)
2017-2019	High School Diploma (IES Marco Fabio Quintiliano)
2013-2019	Técnico Enseñanzas Profesionales de Música (guitar speciality, Conservatorio Calahorra)

Academic Career

June 2024 - July 2024 **Research Intern - Modesto Orozco's Lab**

IRB

Role outline

Exploring the application of flow matching for efficient simulation of tetranucleotide dynamics. Contributing to ongoing projects combining reinforcement learning with statistical physics for improving molecular dynamics force fields.

September 2023 - May 2024 **Research Intern - Jorge Cortes' Lab**

UCSD

Role outline

Proving **stability & safety guarantees** for the '**Safe Gradient Flow**' and '**Safe Monotone Flow**' algorithms. Research on an extended framework to study **stability under disturbances** of dynamical systems.

June 2023 - July 2023 **Research Intern - AI Department**

Nostrum Biodiscovery (NBD)

Role outline

Developing a **guided diffusion model** to predict ligand **docking** poses in proteins. The result significantly improves previous models' performances and our paper was admitted to **ICLR '24**. Furthermore, an extension of the original paper was published in **Nature Machine Intelligence**.

July 2022 - September 2022 **Research Intern**

Institute for Energy Research of Catalonia (IREC)

Role outline

Designing a market structure for the P2P energy market through an approach based on energy communities and **game-theoretic fairness**; as part of the RECOMMIT project.

August 2018 **Research Intern**
Seville University

Role outline

Participated in an **introductory research programme** on **complex systems and robotics** financed by the "Beca Campus Científicos de Verano"

Honors, Awards and Accomplishments

- **2025**: Paper **Informed Protein–Ligand Docking via Geodesic Guidance in Translational, Rotational, and Torsional Spaces** published in **Nature Machine Intelligence**

- **2024**: Paper **GeoDirDock: Guiding Docking Along Geodesic Paths** accepted for GEM Bio Conference at ICLR 2024

- **2019-2023**: Obtained "**Honorable Mentions**" in **Quantum Physics** (2020/2021), **Biophysics II** (2022/2023) and **Solid State Physics** (2022/2023)

- **2019**: Received a "**Beca Ortega y Gasset**", awarded exclusively to the **Top 100 Students** with the best academic records in **Spain**

-**2019**: Graduated **Summa Cum Laude** with a **10/10 overall mark**, as the top Student in class (HS)

-**2018**: Awarded a "**Beca Campus Científicos de Verano**" to the **best STEM students** in **Spain** (HS)

-**2017**: **FLL Spain Award** to the **Nation's Best Scientific Project**, classifying for **FLL International Championship** held in Bath (UK) the same year; as **captain** of the IES Marco Fabio Quintiliano **robotics team**

-**2017**: **Winner** of **La Rioja's Philosophy Olympiad** in the **Dilemma's Modality**. Participant in **Spain's Philosophy Olympiad**

Sport Accomplishments:

-**2018-2019**: **Team Captain** of "Asociación Baloncesto Quintiliano", **Winner** of **La Rioja's Basketball League. Top30 team in Spain** (Spain's Basketball Clubs Tournament).

-**2017-2018** and **2016-2017**: **Team Captain** of "Asociación Baloncesto Quintiliano", **Winner** of **La Rioja's Basketball League. Top25 team in Spain** (Spain's Basketball Clubs Tournament).

Career Summary

2025 – present **International Master's Ambassador**
KTH

Role outline

Promoting the COSSE Master's programme, helping (potential) future students.

2021 – 2023 **President of the CMU Penyafort Montserrat Laboratory (non-remunerated)**
CMU Penyafort Montserrat

Role outline

Developing and coordinating various STEM projects related to 3D printing, electronics, programming, ...

2020 – 2023 **President of the CMU Penyafort Montserrat Debate Society (non-remunerated)**
CMU Penyafort Montserrat

Role outline

Organizing a weekly debate, expert **talks** and other activities addressed to the public. Participating in national-level **debate tournaments**.

2017-2020 **Summer Science & English Teacher (non-remunerated)**

Role outline

Giving **English speaking & popular science** classes to kids aged 6-16

Volunteering

-**2014-present**: Volunteer for Asociación Baloncesto Quintiliano helping with the **organization and development of the "Olimpiada Miguel Jiménez"**, a first-class basketball tournament in the U13 category in Spain

-**2015-2019**: Volunteer for IES Marco Fabio Quintiliano in a programme aiming to **popularize technology and robotics among kids**

-**2016-2017**: Volunteer for Asociación Baloncesto Quintiliano **cleaning the natural surroundings** of Calahorra and **collecting food for those in need** in collaboration with ADRA

-**2014-2016**: Volunteer for El Cubo de la Solana organizing **leisure activities for kids & sporting events**

-**2016**: Volunteer for **Caritas** during the summer

Languages

-**English**: Cambridge **Advanced** (C1 with level C2). Lived in the US for 9 months. Spent several summers in USA and Ireland, participated in a student exchange in London

-**Spanish**: **Native** -**Catalan**: **Fluent**, has lived in Catalonia for 4 years

-**French**: **4 years of study**, participated in student exchange with Aiguillon (France)