

## 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

---

|                     |                                                                                                                                                                                                                                                                                                                     |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2024-present</b> | <b>COSSE International MSc</b> (TU Delft, KTH)                                                                                                                                                                                                                                                                      |
| <b>2019 - 2024</b>  | <b>Mathematics &amp; Physics Engineering Bachelor's Joint Programme</b> (CFIS, UPC)<br>(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) |
| <b>2017-2019</b>    | <b>High School Diploma</b> (IES Marco Fabio Quintiliano)                                                                                                                                                                                                                                                            |
| <b>2013-2019</b>    | <b>Técnico Enseñanzas Profesionales de Música</b> (guitar speciality, Conservatorio Calahorra)                                                                                                                                                                                                                      |

## Academic Career

---

**June 2024 - July 2024:**

**Research Intern - Modest 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 - 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 has been admitted to ICLR '24.

**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. A scientific article on the research I carried on is currently being written.

**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

---

- **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 **top Science & Technology students in Spain**
- 2018, 2016, 2015:** First Lego League (**FLL**) **La Rioja Award** to the **Best Scientific Project** ('16,'18) and to the **Best Robot** ('15); as **captain** of the **IES Marco Fabio Quintiliano robotics team**
- 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**
- 2017:** Received a **Secondary Award** to **La Rioja's Middle School Best Academic Records**
- 2012:** Received a **Secondary Award** in the "**Fermin Gurbindo**" Music Contest

### Sport Accomplishments:

- 2021-2022:** **Winner of Barcelona's University Basketball League** with the **CMU Penyafort-Montserrat's Basketball Team**.
- 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).
- 2016-2017, 2014-2015 and 2012-2013:** **Elected to play for La Rioja's Basketball Team** in Spain's Regional Basketball Tournament

## Career Summary

---

**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**, as well as choosing and researching about a new topic each week for the mentioned activity. **Organizing talks** (given by different experts in the discussed matter) and **other activities directed to the public**. **Participating in national-level debate tournaments**.

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

### *Role outline*

Gave kids aged 6-16 applied classes with the objective to **popularize science** and **introduce them to more advanced science & technology concepts**; as well as **fully conversational English classes** to **encourage & boost their English speaking and understanding abilities in close-to-real-life situations**.

## Volunteering

---

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

-**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). **Spent several summers in USA and Ireland**, participated in a **student interchange in London**. Currently **living in the US**

-**Spanish:** **Native**

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

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