



# Mateo Rodríguez

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## EXPERIENCE

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### MEMBER OF THE TECHNICAL COMMITTEE OF FYT 2025 CONGRESS

07/2025

I had the pleasure of helping organize the Fuerzas y Túnel Conference, a biennial event that brings together the Spanish and international scientific community to discuss the latest developments in scanning probe microscopy. Book of abstracts.

### RESEARCH INTERNSHIP: SURFACE SCIENCE

2024-2025

Working on Surface & Molecular Physics at SumoLab, a surface science research group which is part of the Nanomaterials and Nanotechnology Research Center (CINN).

Main experience: operating a Low Temperature Scanning Tunneling Microscope (LT STM) under conditions of low temperature ( $T \approx 4$  K) and ultra-high vacuum ( $P \sim 10^{-11}$  mbar).

### RESEARCH INTERNSHIP: MOLECULAR & COMPUTATIONAL PHYSICS

2025

Project IFF-01 at the Fundamental Physics Institute (IFF), thanks to a JAE Intro ICU competitive grant funded by the Spanish National Research Council (CSIC).

Molecular Dynamics (MD) with Fortran and LAMMPS. Contribution to the open software MD package LAMMPS with a new intermolecular force field lj/pirani: <https://doi.org/10.20350/digitalCSIC/17300>. Currently preparing a paper to be published soon.

### RESEARCH INTERNSHIP: DATA SCIENCE

09-12/2024

Project SV-24-GIJON-1-15 with a **competitive grant** funded by IUTA. We created a Machine Learning (ML) model able to predict faults and performance of a marine diesel engine. Public talk's presentation here.

### APPLICATIONS OF ML TO THE STUDY OF BRAIN METASTASES

04-06/2024

Python project developed inside the context of Saturdays AI Asturias. Github link Code link

## EDUCATION

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### MSC IN THEORETICAL PHYSICS

2025-

Utrecht University

### BACHELOR OF SCIENCE - PHYSICS (240 ECTS)

2025

University of Oviedo

Bachelor Thesis: *Connecting theory and experiment: study of molecules on surfaces trough STM and simulations.*

### VCQ SUMMER SCHOOL: INTERFACING GRAVITY AND QUANTUM PHYSICS

09/2024

25.5h course, organized by Vienna Center for Quantum Science and Technology. Certificate Link

1.5 ECTS course on Theoretical Physics.

Utrecht Summer School. [Certificate Link](#)

## XII GEFENOL SUMMER SCHOOL ON STATISTICAL PHYSICS OF COMPLEX SYSTEMS

07/2024

International 60h course on Complex Systems, applied Artificial Intelligence (AI) and Data Modeling. URJC Madrid. [Certificate Link](#)

## SATURDAYS AI ASTURIAS

02-06/2024

160h AI course with Python in which a project with social impact is developed. [Certificate Link](#)

## TECHNICAL SKILLS

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PYTHON      ★★★★☆

FORTRAN     ★★★☆☆

LINUX/BASH   ★★★☆☆

C++           ★☆☆☆☆

MOLECULAR DYNAMICS

COMPUTATIONAL PHYSICS

DATA SCIENCE/ANALYSIS

## LANGUAGES

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SPANISH ★★★★★

Native

ENGLISH ★★★★☆

Fluent (Level C2)

## ABOUT MYSELF

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I am passionate about science, I enjoy writing and I love football. Japanese art and culture fascinate me. I come from a family in which hard work and empathy are critical values. For more info about me, visit my website [mateo.github.io](#).

## CERTIFICATIONS

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### CAMBRIDGE ADVANCED

2025

Overall score of 203, Level C2. [Certificate](#)

### OXFORD JUNIOR PROGRAMMES

07/2018

45 Hour English Course, Edinburgh. [Certificate](#)