Mateo Rodríguez

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EXPERIENCE

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 performace 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

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

DUTCH SUMMER SCHOOL OF THEORETICAL PHYSICS   08/2024

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

PYTHON ★★★★☆

FORTRAN ★★★☆☆

LINUX/BASH ★★★☆☆

C++ ★☆☆☆☆

MOLECULAR DYNAMICS

COMPUTATIONAL PHYSICS

DATA SCIENCE/ANALYSIS

LANGUAGES

SPANISH ★★★★★

Native

ENGLISH ★★★★☆

Fluent (Level C2)

ABOUT MYSELF

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

CAMBRIDGE ADVANCED   2025

Overall score of 203, Level C2. Certificate

OXFORD JUNIOR PROGRAMMES   07/2018

45 Hour English Course, Edinburgh. Certificate