

ALEJANDRO RODRÍGUEZ GARCÍA

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ABOUT ME

[DOB: 08-05-2000] A highly motivated and enthusiastic individual with a passion for learning and professional development. I possess strong analytical skills, developed during my Physics degree, and a keen interest in applying them to the study of complex biological systems, particularly in the field of computational neuroscience. I am a quick learner, decisive, resilient, ambitious, dedicated, with a strong sense of responsibility, creativity and adaptability, which enables me to work effectively and efficiently in different situations.

EDUCATION

PhD in Biosciences, Newcastle University 2023 - 2026

- PhD thesis: The Role of Neuromodulation in Shaping Continual Learning within Artificial Neural Networks.
Supervisor: Dr. Srikanth Ramaswamy.

Master in Physics of Condensed Matter and Biological Systems, UAM 2022 - 2023

GPA: 8.33/10. Biophysics specialization: Neuroinformatics, Systems biology, Image analysis and processing.

Master's thesis project:

- Computational Neuroscience: *Dopamine, its role during learning and motivation* (2023).
Supervisor: Néstor Parga Carballada, Theoretical Physics Department (UAM).

Bachelor in Physics, Autonomous University of Madrid (UAM) 2018 - 2022

GPA: 7.16/10. Theoretical physics itinerary: Advanced Mathematical Methods, Classical electrodynamics, Particle Physics, Cosmology, Advanced Quantum Mechanics.

Bachelor's thesis projects:

- Paper-based sensors and luminescent nanoparticles for biomedical and environmental applications:
(PoC) Nanoparticles doped with Er and Yb as chromium(III) sensor (June 2022).
Supervisor: Emma Martín Rodríguez, Applied Physics Department (UAM).
- Metal-hydrogen systems:
Formation and decomposition of palladium hydride (December 2021).
Supervisor: Pablo Molina de Pablo, Materials Physics Department (UAM).

Member of the varsity basketball team.

Evaluation for University Access (EvAU): 9.425/10. 2018

PUBLICATIONS

- **Rodriguez-Garcia, A.**, Mei, J., & Ramaswamy, S. (2024). Enhancing learning in artificial neural networks through cellular heterogeneity and neuromodulatory signaling (Version 1). arXiv.
<https://doi.org/10.48550/ARXIV.2407.04525>.
- López-Peña, G., **Rodríguez García, A.**, García Solé, J., & Martín Rodríguez, E. (2024). Luminescent rare-earth-doped up-converting nanoparticles for Cr³⁺ sensing in water. *Journal of Luminescence*, 274, 120701.
<https://doi.org/10.1016/j.jlumin.2024.120701>.

RECOGNITIONS AND AWARDS

Student Exchange Program Award, US Department of Defense 2024

Scholarship to undertake research stays at Harvard University during the PhD.

NUAcT PhD Studentship, Newcastle University 2023

Scholarship to pursue a PhD in Bioscience at Newcastle University.

Vice-Chancellor's EU Scholarship, Newcastle University 2023

Scholarship to assist EU students in studying a postgraduate research degree at Newcastle University.

Excellence Grant, Community of Madrid and Council of Education and Research

2018-2019

Scholarship for excellent academic achievement - Course 2018-2019.

EXPERIENCE

Venture Scientist Fellow (Cohort 7)

2024

Conception X

London - Newcastle, UK

Basketball Coach

2018-2023

Ábaco School

Madrid, Spain

KNOWLEDGE AND SKILLS

Programming skills Python, R, C++, LaTeX, HTML/CSS, SQL.

Software Skills MatLab, Excel, OriginPro, RStudio, Fiji, ImageJ, Wolfram Mathematica.

Languages Spanish (native), English (advanced), French (beginner).

LICENSES AND CERTIFICATIONS

Reinforcement Learning Onramp, MathWorks

2022

Course Completion Certificate:100% - 4h.

Cambridge Assessment English: CAE, Cambridge

2023

Grade C - Score: 186 (C1).

VOLUNTEERING

Teacher of children in social exclusion

2015 - 2017

Cáritas

Madrid, Spain