

# ALEJANDRO RODRÍGUEZ GARCÍA

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## ABOUT ME

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[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

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**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

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- **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 Cr<sup>3+</sup> sensing in water. *Journal of Luminescence*, 274, 120701.  
<https://doi.org/10.1016/j.jlumin.2024.120701>.

## RECOGNITIONS AND AWARDS

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**NUAcT PhD Studentship**, Newcastle University 2023

Scholarship to pursue a PhD in Bioscience at Newcastle University.

**Student Exchange Program Award**, US Department of Defense 2023

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

**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

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**Venture Scientist Fellow (Cohort 7)**

2024

Conception X

*London - Newcastle, UK*

**Basketball Coach**

2018-2023

Ábaco School

*Madrid, Spain*

## KNOWLEDGE AND SKILLS

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**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

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**Reinforcement Learning Onramp**, MathWorks

2022

Course Completion Certificate:100% - 4h.

**Cambridge Assessment English: CAE**, Cambridge

2023

Grade C - Score: 186 (C1).

## VOLUNTEERING

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**Teacher of children in social exclusion**

2015 - 2017

Cáritas

*Madrid, Spain*