ALEJANDRO RODRÍGUEZ GARCÍA

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ABOUT ME

[DOB: 08-05-2000] I am a highly motivated and driven individual with a passion for learning and professional growth. My background in Theoretical Physics has equipped me with strong analytical skills, which I now apply to the field of computational neuroscience. I am currently pursuing a PhD focused on developing more adaptive and intelligent AI systems. 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, Neural Circuits Laboratory, Biosciences Institute (NU).

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 Carballeda, 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*