

Position Offered: PREDOCTORAL RESEARCHER

Project: *Active Inference Neuromorphic Control for Wearable Robots*

Technological and scientific fields: Artificial intelligence, Spiking Neural Networks, Control, Neuromorphic, Wearable robots.

Location: Alcalá de Henares, Madrid, Cajal International Neuroscience Center (CINC), <https://www.cinc.csic.es/>

Research Group/PI: Neuro AI and Robotics (NAIR) (neuro-ai-robotics.github.io) / Pablo Lanillos

PROJECT SUMMARY

This project focuses on the development of artificial intelligence (AI) algorithms, inspired by how the brain processes information, that can be implemented in low-power neuromorphic hardware. These new algorithms are based on the results obtained during the Spikeference project, within the European Human Brain Project, for the efficient estimation and control of dynamic systems.

From an interdisciplinary approach this project delves into three essential axes: i) the development of a new generation of bio-inspired algorithms, ii) providing high-performance and low-power computing and iii) the improvement of human-machine systems, such as wearable robots. To this end, this project builds on recent advances on Computational Neuroscience to combine the computational efficiency of event-based neural networks with the adaptive capacity of active inference algorithms. The selected candidate will join a young, highly active, interdisciplinary research group in the fields of AI, robotics, and neuroscience.

PROFESSIONAL PROFILE

Minimum requirements:

Required academic qualifications:

- Master's in Computer Science, Physics, Computational Neuroscience, or related field

Language proficiency: Professional English and basic Spanish

Background in neuro-inspired artificial intelligence

Merits to be considered:

Experience in spiking neural networks

Experience in active inference (probabilistic inference) or predictive coding

Knowledge of programming in Python

Knowledge of computational neuroscience

Experience in writing scientific publications

WHAT IS OFFERED

Training in state-of-the-art brain-inspired AI models

Training in robotics (e.g., wearables)

International training stays in academia

Collaboration with other national and international research centers

Continuous training for a successful scientific career

Contract conditions:

Predoctoral Researcher contract of 3 years' duration. Gross annual salary of 23,871.33 €.

Start of contract: before 31 December 2024

PRINCIPAL INVESTIGATOR CONTACT

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