

# Position Offered: POSTDOCTORAL RESEARCHER

Project: *Artificial Intelligence for high-performance processing and analysis of massive data in natural sciences*

**Technological and scientific fields:** Artificial Intelligence, Image Analysis and Computer Vision, Mass Data and Information Processing Technologies, Advanced data analytics/edge computing; Remote sensing, Climate change and biodiversity, Data analysis and integration, Sensorization.

**Location:** Madrid, Museo Nacional de Ciencias Naturales, <https://www.mncn.csic.es/>

**Research Group/PI:** MNCN research centre joint project. IP: Luis Pertierra, Dept. Biogeography & Global Change; Co-IP: Asunción de los Ríos, Dept. Biogeochemistry & Microbial Ecology

## PROJECT SUMMARY

The processing, storage, analysis, and exchange of massive biological data faces significant operational challenges, creating a bottleneck between the collection of information and the generation of scientific outcomes. This centre project aims to lay the foundations for the creation of an Artificial Intelligence Laboratory (LIA) that transversally combines the processing needs of massive digital biodiversity and geodiversity data collected by MNCN research groups, scientific-technical services and natural history collections. The LIA-MNCN will develop protocols to process data resulting from various digital monitoring tools (soundscapes, computer vision, phototrapping, remote sensing), multi-scalar imaging techniques, and/or automated digitization of collections. A high focus will be set in developing guided protocols and workflows for assisting MNCN end-users in their natural science research endeavours.

## PROFESSIONAL PROFILE

### Minimum requirements:

- Academic qualifications: PhD in Biological Sciences, Ecology, Imagery Technologies or similar
- Proficiency in Spanish and English

### Merits to be considered:

- Experience with Artificial Intelligence training for species recognition with assisted / unassisted classification trees. Knowledge of computer vision and/or soundscapes depuration.
- Proficiency in automated digitalization, virtual modelling, and/or morphometrics.
- Processing of digital imagery at various ecological scales, from microscopy to remote sensing.
- Programming skills (R, python). Advanced skills in web scraping and data mining.

## WHAT IS OFFERED

Experience and expertise in the development and application of AI methodologies for the digitization, management and analysis of different sources of ecological data. As a result of these scientific activities, the hired person will also receive complementary training skills, which will include improving their scientific leadership, writing and presentation skills, supervision of early career students and knowledge transfer capacities, publications in research journals and communications to scientific events or the general public. Additionally, the candidate will gain experience in project management and increase their internationalization.

### Contract conditions:

Indefinite contract for a Postdoctoral Researcher associated to the Momentum Project of 4 years' duration according to Spanish science law. Gross annual salary (41.000 € - 52.000 €).

**Start of contract: before 31 December 2024**

## PRINCIPAL INVESTIGATOR CONTACT

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