

Position Offered: POSTDOCTORAL RESEARCHER

Project: *Integration of -omics and data mining for the study of multiple interactions in Mediterranean agricultural systems in the face of climate change*

Technological and scientific fields: Data analysis and integration. Image analysis and computer vision. Artificial intelligence. Climate change and biodiversity.

Location: Granada, Andalucía, Estación Experimental del Zaidín (EEZ), www.eez.csic.es/

Research Group/PI: BReMAP, Dr. Juan de Dios Alché Ramírez

PROJECT SUMMARY

The project will implement an institutional structure of computational biology at the EEZ-CSIC that enhances existing lines of research in areas such as plant biology, soil, stress, environment and food, amplifying its capacity to address high-impact global problems, such as climate change. Strategies will be designed that integrate a vast amount of data generated (-omics, biochemical, molecular, imaging and positioning studies), from a holistic perspective and using advanced technologies of Artificial Intelligence (AI), machine learning and deep data analysis (deep data). A technical support infrastructure will be created to store, organize, manage and analyze large volumes of data from diverse experimental sources, adhering to the EU FAIR principles. On the other hand, databases and platforms that integrate machine learning (ML) and predictive analysis tools will be developed. These will facilitate advanced functions to organize, expand, compare and predict interactions from ongoing projects, using intuitive interfaces and visualizations that simplify the interpretation of complex datasets. Finally, tools based on ML and AI will be implemented for the holistic analysis of the datasets, allowing advanced comparisons.

PROFESSIONAL PROFILE

Minimum requirements:

The candidate must have a doctorate in Biology, Biochemistry and Molecular Biology, Biotechnology, Mathematics, Statistics, Bioinformatics, Engineering or related subjects, with competencies in English and Spanish.

Merits to be considered:

Multidisciplinary training will be valued. For bio training, prior knowledge in data analysis, programming, completed projects or additional training will be valued. In engineering or mathematics profiles, training in the biological field, participation in similar projects, etc. will be valued. In both cases, work experience and related publications will be valued.

WHAT IS OFFERED

The project will allow the candidate to integrate into a newly created unit, in which its marked multidisciplinary aspect will stand out, since it will interact with various groups of the institute that will provide data of both the -omic type (transcriptomic, (meta)genomic, proteomic, metabolomic...), as well as biochemical, molecular data, image banks, positioning...) for analysis and integration. The training plan includes a total of 264 ECTS, with numerous activities such as participation in highly prestigious courses on programming languages, specific analysis, etc. It will also include 3 stays (3 months each) in prestigious international laboratories for specific learning, participation in conferences, direction of works in various associated master's degrees and others.

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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