Artificial Intelligence Senior Scientist within the framework of the Recovery, Transformation and Resilience Plan – Funded by the European Union – Next Generation

Port d'Informació Científica (PIC) is a scientific-technological center specialized in developing advanced tools and methods for scientific data analysis. We participate in research projects from multiple disciplines with challenging data environments, including particle physics, astrophysics, biology, materials science and others. Our main objective is to accelerate research by making data analysis more effective through the use of Machine Learning, High-Throughput Computing and Big Data techniques and using distributed computing to support collaborative research.

PIC is looking for a highly motivated scientist with strong technical skills in advanced data analysis methodologies and genuine interest in multidisciplinary research to lead the Applied AI group at PIC, focused on the application of Artificial Intelligence techniques to scientific data analysis.
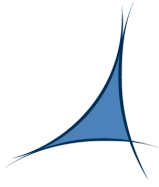
PIC is building a platform to provide data analysis and processing services for a new unique correlative facility for in-situ material science experiments at the ALBA Synchrotron in the frame of the In-CAEM project (Instalación Correlativa In-situ para Materiales Avanzados para Energía). The objective of these experiments is to characterize advanced materials with application in strategic areas such as energy or environment, providing simultaneous information on their nanostructure and their physical/chemical properties. The facility will combine different instruments such as (S)TEM (Scanning Transmission Electron Microscopy), EELS (Energy Loss Electron Microscopy) and AFM / STM (Atomic Force Microscopy / Scanning Tunnel Microscopy) with synchrotron techniques on the very same nanostructures.

The successful candidate will lead the Applied AI group at PIC and will work in close collaboration with discipline scientists to develop advanced data analysis methodologies for cutting-edge scientific instruments such as electron microscopes, synchrotrons as well as telescopes or particle detectors. Synergies between the different fields will be actively pursued.

Job Description

You will work as a lead researcher within the Applied AI group at PIC. Your job will consist in:

- Interacting with materials scientists in the context of the In-CAEM project to analyze their data analysis needs, computing model and technological environment.
- Interacting with the computer engineers at PIC to design interfaces for using PIC computing resources efficiently to address the different data analysis needs.
- Interacting with scientists from different disciplines that use or require AI technologies for data analysis with the goal to explore synergies and exploit common methodologies.
- Developing AI/ML models for tackling different scientific data analysis tasks.
- Identifying new projects and synergetic collaboration opportunities.

- Building and leading a team of data scientists at PIC focused on applying AI methodologies to advanced scientific data analysis.

Required Skills

You will have the support of the Operations and Services teams at PIC and access to their expert knowledge in production services and systems administration. In turn, we expect from you:

- Ability to effectively communicate and collaborate with team members, supervisors, and researchers.
- Capacity to understand complex experimental environments, to identify gaps in existing data analysis workflows and to develop specific solutions to address them.
- Being proactive. Having the ability to manage independently project implementation and delivery within a multidisciplinary team environment.
- Ability to implement an agile approach for solving complex problems. Fast prototyping.
- Ability to work with tight deadlines. Results-driven.
- Experience supervising people in scientific environments.
- Passion for keeping up to date with state of the art in AI/ML.
- Experience with publishing scientific results.

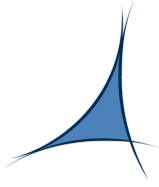**Degree and area of specialization**

- PhD in Science (preferable, but not exclusively, in Physics, Mathematics, Computer Science).
- At least six years of scientific programming experience.
- Experience with deep learning and AI, including frameworks as PyTorch, Jax or Tensorflow.
- Experience in Python and data science libraries, such as Numpy and Pandas.
- Advanced level of written and spoken English.

Contract characteristics

The recruiting center will be the Institut de Física d'Altes Energies (IFAE). The place of work will be the headquarters of PIC at Universitat Autònoma de Barcelona.

At least 1 position. Full-time position (40h/week). There will be a trial period of 6 months. Flexible schedule.

The position will correspond to Researcher Level1 within the IFAE professional categories. Salary will be commensurate with experience and qualifications within the corresponding category range. The successful candidate would start working at PIC no later than September 2022.

In compliance with article 121 of the Spanish Public Sector Legal Regime Act, staff with a pre-existing relationship with the Consortium administration (Generalitat de Catalunya and Universitat Autònoma de Barcelona) will have priority in the awarding of the position.

Applications

Applicants must be nationals of the European Union, or of countries in the European Economic Area or Switzerland, or have a valid Spanish work permit.

All documentation will be handled electronically and exclusively in pdf format. Applications should be sent to pic.jobs@pic.es indicating reference number PIC2022-AI-2 attaching a Curriculum Vitae and any other relevant documentation. Sending CVs to the above address implies consent to the legal warning at the bottom of IFAE's Home Page.

Deadline: August 20, 2022

IFAE is an equal opportunity employer committed to diversity in the workplace and social integration of people with a disability. We welcome applications from all qualified candidates. People from groups that are typically underrepresented in the labour market in general and in Science and Engineering in particular, such as women, minorities, or people with a disability, are particularly encouraged to apply.

You may contact Mari Carmen Porto (mporto@pic,es) for any questions related to this job opening.

Funding

This contract is part of the project Materials with advanced functionalities for the new technological transformation, of the area of Advanced Materials, within the frame of the R&D&I Complementary Plans of the Spanish Government that are part component 17 of the Recovery and Resilience Mechanism. The contract will be funded by the European Union – NextGenerationEU and by the Department of Research and Universities of the Catalan Government.

Bellaterra, July 20, 2022