

Postdoctoral Researcher in Scientific Computing within the framework of the Recovery, Transformation and Resilience Plan – Funded by the European Union – Next Generation

Port d'Informació Científica is a scientific data center maintained through the collaboration of CIEMAT and IFAE. PIC was created in 2003 with the main mission to fulfill Spain's commitment of providing a first level (Tier-1) data processing center for CERN's Large Hadron Collider (LHC). Since then, it has expanded into Astroparticle Physics and Cosmology: it is the main data center for the MAGIC and PAU Survey collaborations and is one of the 10 Science Data Centers of Euclid, specializing in the provision of large-scale cosmological and image simulations. It has been recently included in the Red Española de Supercomputación (RES) as a science data center.

IFAE is collaborating in research projects in gamma-ray astronomy (MAGIC, CTA), optical galaxy surveys (DES, PAU, Euclid, DESI) and gravitational wave astronomy (LIGO, Virgo). Multi-Messenger astronomy is based on the simultaneous recording and interpretation of various signals from space. Therefore IFAE is in a unique position to enable synergies by combining the information coming from the different instruments and has also scientific interest to address Multi-Messenger (MM) analysis.

The IFAE/PIC expertise in dealing with massive data sets for multiple disciplines on a variety of platforms ranging from distributed grid resources, clouds, GPU clusters to scalable databases and big data infrastructures is a key asset for building a next-generation MM analysis platform.

The post-doctoral researcher is expected to interact with the different group members to compile and understand each task requirements. She/He will play a fundamental role in the maintenance and operation of a Hadoop distribution on top of a physical cluster. She/He will also be responsible for developing or adapting algorithms to be able to scale and handle large amounts of data.

Job Description

You will work as a researcher within the group that collaborates with Astrophysics and Cosmology projects at PIC. Your job will consist in

- Designing, developing, integrating and improving a custom Hadoop distribution for the PIC Big Data Common Service.
- Managing and operating a Hadoop cluster for the analysis and distribution of massive amounts of structured data.
- Designing, implementing and optimizing algorithms for the analysis of large datasets.
- Designing, developing, testing and deployment of web applications as interfaces to the analysis and distribution of cosmological catalogs.
- Publish original research in journals or conferences.



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:

- Experience in working with Linux/Unix operating systems and system administration.
- Excellent communication and interpersonal skills.
- Being proactive. Having the ability to manage independently project implementation and delivery within a multidisciplinary team environment.
- Experience with publishing scientific results.

Degree and area of specialization

- PhD in Computer Science, Engineering, Physics or any other science related field on the date of the contract start.
- Experience in programming in Java, software management, git.
- Experience in Hadoop and its ecosystem of components.
- Experience in Docker, CI/CD and Kubernetes.
- Fluent knowledge of English, both written and spoken.

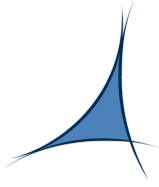
Contract characteristics

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). The contract will be for 2 years, including a 6 months trial period, renewable up to an additional year depending on mutual satisfaction and availability of funds.

The position will correspond to Postdoctoral Researcher junior 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 February 2023.

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.



PIC
port d'informació
científica

Helping to turn information into knowledge

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 PIC2023-PCMM-1 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: February 1, 2023

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 Jorge Carretero (carretero@pic.es) or Christian Neissner (neissner@pic.es) for any questions related to this job opening.

Funding

This position is part of the project Advances technologies for the exploration of the Universe and its components, of the area of Astrophysics and High Energy Physics, 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, January 17, 2023

Funded by



Campus UAB Edifici D - 08193 Bellaterra - Barcelona – Spain - Tel +34 93 581 41 09 - <http://www.pic.es>

Institut de Física
d'Altes Energies



Centro de Investigaciones
Energéticas, Medioambiental
y Tecnológicas