Data Analysis Software Developer for Elettra 2.0

Deadline: 12 March 2024
Ref: IA/24/6

Background

Elettra Sincrotrone Trieste is an international multidisciplinary research center operated as a user facility, featuring a 2.0/2.4 GeV, third-generation synchrotron light source (Elettra), a new free-electron laser light source (FERMI) and a variety of support laboratories. The extremely high quality of the machines and beamlines has set new performance records and has been producing results of great scientific and technological interest. In order to allow the laboratory to remain competitive in the next 20 years, an entirely new source - Elettra 2.0 - belonging to the new generation of storage rings (DLSR or Diffraction Limited Storage Ring) is being developed. The new source will exhibit a major increase in the brilliance and coherence fraction of the photon beams. The Elettra 2.0 optics is based on our enhanced symmetric six bend achromat structure (S6BA-E) with a 12-fold symmetry and an emittance of 200 pm-rad at 2.4 GeV. The new structure creates also straight sections in the arcs permitting the installation of additional insertion devices, thus increasing the number of beamlines. Existing beamlines will have to be upgraded and new beamlines developed to take full advantage of the characteristics of Elettra 2.0. The new machine is scheduled for commissioning in the second half of 2026. See http://www.elettra.eu for more information.

Beamline/Activity/Project description

The staff of the IT Group performs a wide range of tasks, from system administration and software acquisition to database management, algorithm development for data analysis, service support, as well as research and development.

The Scientific Computing team of the IT Group is focused on the complete lifecycle of scientific data, including database systems and novel analysis methods. They aim at providing relevant services to Elettra and FERMI beamlines while contributing to various aspects of the Elettra 2.0 upgrade.

Typical activities of the Scientific Computing team include data analysis, computational imaging, AI topics, data compression methods, code optimisation, mathematics and algorithm development to address the needs of the beamlines and laboratories of Elettra and FERMI.

Job description

The successful candidate will actively contribute to the activities of the Scientific Computing team of the IT Group. These include research and development for scientific data analysis software and methods.

He/she will be directly involved in software development for analysis and visualisation of scientific data and will assist both development and deployment in the HPC infrastructure of Elettra, in preparation for Elettra 2.0. The target technology is web-based applications and front-ends.

Qualifications

Are required

- Bachelor, Master or PhD in Computing, Physics, Engineering, or a related STEM field.

- Minimum 1 year of experience in software engineering.

- Demonstrated knowledge of web development.

- Proficiency in Python and familiarity with GNU/Linux.

Preferred

- Expertise in front-end web-dev and understanding of full-stack

CERTIFIED
MANAGEMENT SYSTEM

CQY
CERTIQUALITY

UNI EN ISO 9001:2015
UNI ISO 45001:2018
UNI CEI EN ISO 50001:2018

- Experience with data visualisation.

- Formal data analysis and AI foundations.

- Relational and NoSQL Database.

- Competence in server and back-end development and deployment.

Technical and Scientific Skills:

- Basic knowledge in computational imaging and data processing.

- Understanding of Data Analysis with focus on AI/ML.

Additional Asset(s):

- Knowledge of mobile app development.

- Numerical methods.

- JavaScript

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Good oral and written communication skills in English are essential.

Good time management skills together with the ability to interact with staff and facility users and to lead a multi-disciplinary team is expected.

General information

The appointment will be a fixed term contract with an initial duration of 12 months, renewable upon agreement by the parties.

The salary will be commensurate with the previous experience and qualifications of the candidates.

Applications should include a full curriculum vitae, the names and contact information (including electronic mail) of at least two references.

The interviews may be held via video conferencing

The deadline for the submission of the application is March 12, 2024.

In accordance with the provisions of article 21 of the Italian legislative decree no. 39/2013 and in conjunction with article 53 (subsection16ter) of Italian legislative decree no. 165/2001, employees or former employees of any Italian Public Entity who have exercised authority over Elettra Sincrotrone Trieste S.C.p.A. or have negotiated with Elettra - Sincrotrone Trieste S.C.p.A. within the last three years will be excluded from the present selection procedure.We thank all applicants in advance.
For more information, please contact Georgios Kourousias (email: george.kourousias@elettra.eu).

To apply for this position please visit the following link:
https://www.elettra.trieste.it/it/about/careers/working-withus.html?id=3801