

Introduction

The Florence unit of INFN invites applicants for a Junior Data Physicist role on numerical modeling technologies based on machine learning techniques. The appointment is initially for one year with a possible extension for a second one.

Please note that this job description is not legally binding and provides an informal translation of the INFN call number 26573, available at the link: https://jobs.dsi.infn.it/dettagli_job.php?id=3980

About

The Florence unit of the Italian Institute for Nuclear Physics (INFN) carries out research in the field of theoretical and experimental High Energy, Nuclear and Applied Physics. It contributes to development of numerical models and simulations for experiment design, data analysis and statistical interpretation as part of the European-funded Project to launch a novel National Research Centre for High Performance Computing, Big Data and Quantum Computing (ICSC).

Functions

The selected candidate will take part in the development of simulation techniques in the domain of High Energy Physics, based on machine learning technologies.

Part of the research activity will be devoted to the application of Physics Informed Machine Learning techniques to the simulation of physical systems, including semiconductor radiation detectors.

In parallel, the selected candidate will focus on the application of Generative Models (mainly Generative Adversarial Networks and Normalizing Flows) to simulate the digitized and reconstructed response of large experimental apparatus, taking the LHCb experiment at CERN and its future upgrades as paradigmatic examples.

Experience and Competencies

A master degree in Mathematics, Engineering, Informatics, Physics or Chemistry obtained during the last 9 years is required.

In addition at least 24 months of experience in processing or analyzing scientific or technological data, or in developing numerical models for physical systems are requested.

Basic understanding of particle physics and radiation-matter interaction mechanisms is expected.

Experience with the data ecosystem of Python, with machine learning and with cloud technologies is also appreciated.

Language skills

The research activity will be developed in an international context, making English the primary language for the work context.

The ability to understand and speak Italian, or the willingness to acquire it, is highly appreciated but not required.

Eligibility

Diversity has been an integral part of INFN mission since its foundation and is an established value of the Institute.

Candidates must hold or be able to obtain a valid working visa for the duration of the specified term.

Location:

Sesto Fiorentino, Firenze (Italy)

Salary (gross): EUR 25k/year

Corresponding to a net wage of 1850,04€ per month.

Application

Applications must be submitted through the web application <https://reclutamento.dsi.infn.it> by
May 10th, 2024, 23:59:59 CEST

During the application procedure, the following documents will be needed:

- the applicant's Curriculum Vitae
- a complete list of publications
- the applicant's passport (or identity card, if accepted in Italy)

In addition, the application may include:

- the email address of up to two professors or supervisors of the applicant that will be invited to submit a reference letter by the same deadline indicated above;
- any additional documentation the applicant considers relevant for the evaluation committee.

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