Post-Doc ATLAS ITk, Machine-Learning

Contract type: Long Term Contract   Period of Contract: 3 years

Job Level: Skilled / Middle Management

Work Location: Johannesburg, Gauteng

The National Research Foundation (NRF) supports and promotes research and human capital development through funding, the provision of National Research Facilities and science outreach platforms and programmes to the broader community in all fields of science and technology, including natural sciences, engineering, social sciences and humanities.

iThemba LABS is Africa's leading research facility for accelerator-based science that is committed to advance knowledge, transform lives and inspire the nation. We do this through probing fundamental aspects of nuclear structure, investigating the origins of matter, and advancing humanity's understanding of condensed matter. In addition, we have a direct societal impact through the provision of radioisotopes for the health sector and a biophysics research program focusing on the impact of radiation on human health, as well as isotope analysis for the environmental sector.

A Post-Doctoral Fellow position is available at iThemba LABS, supported by the National Research Foundation (NRF). One of the activities of iThemba LABS (https://tlabs.ac.za/) is to support the SA-CERN programme whereby South African researchers and postgraduate students participate in research at the Large Hadron Collider (LHC) at CERN. This position is primarily dedicated to the Phase-II Upgrade of the ATLAS experiments specifically at the Inner Tracker (ITk). The upgrade projects represent the cutting edge of technological development. This position will primarily support the development and deployment of first-of-a-kind and innovative Fibre Optic Sensor (FOS) technology in the harsh radiation environment of the ATLAS experiment during the High-luminosity phase of data-taking to sensitively measure humidity, radiation dose and temperature in conditions of extreme dryness. The successful candidate will participate in R&D, production and QA processes in the integration of these FOS sensors into ATLAS.

There is an additional upgrade project related to the design and construction of the ATLAS ITk Polymoderator neutron shielding to which the post-doctoral fellow will contribute as the need arises.

Finally limited expert-level contributions to ongoing ATLAS operations are possible in areas including, but not limited to , Machine Learning, trigger, algorithm development, simulation, high performance computing and data preparation.

The work will be performed at the University of Johannesburg and the University of Cape Town, however the candidate will be officially based at iThemba LABS within the Technology and Innovation Platform (TIP).

Key Responsibilities:

*   Perform tasks in instrumentation according to the requirements of the Phase-II upgrade projects, primarily focused on FOS.

*   Liaise between colleagues in South Africa and CERN

*   Assist in the supervision of graduate students involved in the Phase-II upgrade

*   Deliver limited, expert-level contributions to ongoing ATLAS operations

Key Requirements:

Qualification:

PhD Engineering or Physics or Computer Science

Experience:

*   3 years' experience in any or combination of the following: Instrumentation, readout systems, electronics

*   Ability to work efficiently in international teams and travel internationally frequently

*   Ability to take initiative and work productively under pressure with minimum supervision

Knowledge:

Good interpersonal communication, teaching and training skills

Excellent analytical thinking and problem-solving abilities

Good communication and team working skills

Additional Notes:

Enquiries: careers@tlabs.ac.za

Information:

The website www.nrf.ac.za provides more details on the NRF initiatives and activities.

Applications:

Applicants should submit a comprehensive CV by logging to https://ess.nrf.ac.za/Account/Recruitment and apply online. Applications should be accompanied by a letter of motivation indicating the applicant's suitability for the position. The names and contact details of at least three referees should be provided.

Closing Date: 21 June 2023

The NRF offers a challenging career and competitive remuneration package which is commensurate with qualifications and experience. The NRF is committed to employment equity and redress and the appointment to the position will be made in line with the NRF Employment Equity Plan.

The NRF reserves the right not to make an appointment.

Correspondence will be sent to short-listed candidates only

PDF Converter

Only two pages were converted.

Please **Sign Up** to convert the full document.