



## ADVERTISEMENT

### Postdoctoral Fellow Theory

Contract type: Long Term Contract

Period of Contract: 3 years

Job Level: Skilled / Middle Management

Work Location: Cape Town, Western Cape

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.

The SA-CERN programme gives South African researchers and postgraduate students access to the largest open research facility in the world, namely the Large Hadron Collider (LHC) at CERN. South African researchers and postgraduate students participate in the SA-CERN Theory Group and in three experiments in LHC at CERN, namely ATLAS (a Toroidal LHC Apparatus); ALICE (a Large Ion Collider Experiment); and ISOLDE (Isotope mass Separator On-Line Facility).

The Theory Pillar of SA-CERN has close ties to the Theory Group at CERN. The activities of the SA-CERN Theory group focus on the theoretical understanding of the high energy nuclear and particle physics investigated by the experimental groups at CERN. The Group invites qualified applicants to apply for a Postdoctoral Fellow Theory position in the field of machine learning techniques and applications, especially where it aligns with one of the research interests of the group. These include applications of testing new physics models against experimental and simulated results from current and future possible colliders, testing possible machine learning architectures.

The successful candidate will be officially based at iThemba LABS (<https://tlabs.ac.za/>) within the Technology and Innovation Platform (TIP) in Cape Town and will work with researchers at the universities that are within the SA-CERN consortium.

The activities at CERN include technical projects whereby South African based researchers, engineers and technicians are involved in the instrumentation projects, and activities on the upgrade of accelerator and research facilities at CERN.

#### Key Responsibilities:

- \* Produce papers in high quality journals
- \* Present at high impact conferences and workshops
- \* Assist where possible with graduate student supervision
- \* Facilitate the transfer of technology and special skills to South Africa; e.g. collaboration with other members and pillars of SA-CERN, student supervision, teaching specialized courses
- \* Cooperation with private industry in SA associated with AI/ML/Big Data

## Key Requirements:

### Qualification:

PhD in Physics, Mathematics, Computer Science, or similar

### Experience:

- \* Artificial Intelligence and/or Machine Learning and/or Big Data Techniques
- \* Good interpersonal and communication skills
- \* Good teaching and training skills
- \* Good communication and team working skills
- \* Ability to work under pressure with minimum supervision
- \* Ability to work as an individual and as a member of a team

### Knowledge:

- \* Excellent analytical thinking skills
- \* Excellent problem-solving abilities
- \* Good software programming skills

## Information:

The website [www.nrf.ac.za](http://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: 25 November 2022

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