



## ADVERTISEMENT

### Software Engineer

Contract type: Permanent

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.

The South African Radio Astronomy Observatory (SARAO) spearheads South Africa's activities in the Square Kilometre Array Radio Telescope, commonly known as the SKA, in engineering, science and construction. SARAO is a National Facility managed by the National Research Foundation and incorporates radio astronomy instruments and programmes such as the MeerKAT and KAT-7 telescopes in the Karoo, the Hartebeesthoek Radio Astronomy Observatory (HartRAO) in Gauteng, the African Very Long Baseline Interferometry (AVN) programme in nine African countries as well as the associated human capital development and commercialisation endeavours.

Software Engineers are part of a development team building the MeerKAT, MeerKAT Extension, African VLBI Network (AVN) and the Square Kilometre Array Observatory (SKAO) telescopes. They are responsible for writing the software that controls and monitors the telescope. Software Engineers research and evaluate requirements for the existing or new software applications, furthermore they develop, test and maintain software solutions to meet the requirements. They may be expected to guide and work with Junior software engineer to accomplish their tasks.

#### Key Responsibilities:

- \* Prototyping and software development of the telescope operational software (all stages of the full software development life-cycle may be encountered).
- \* Provide hands-on technical support in the system administration of the hardware platforms, deployment environments and processing, which may include site visits to the Karoo.
- \* Collaborate with departmental stakeholders to support engineering, commissioning, operations and early science activities.
- \* Assist in maturing of software development and quality assurance processes towards greater standardization and improved long term maintainability and robustness.
- \* Facilitate coding standard compliance and code reviews, which include mentoring junior engineers.
- \* Compile document sets.
- \* Provide project management and progress reporting input as required by the Functional Manager and for team communication.

#### Key Requirements:

##### Qualification:

- \* B.Tech/B.Sc (Comp Sci) with 5+ years; OR
- \* B.Eng/B.Sc Hons (Comp Sci) with 4+ years; OR
- \* M.Eng/M.Eng/M.Sc (Comp Sci) with 3+ years; OR
- \* PhD with 2+ years; OR
- \* Engineering (with a software focus) or related field

##### Experience:

- \* Experience in a software engineering environment, preferably in an engineering development project environment with a strong software focus.
- \* Python or C/C++ programming language and experience in development, testing, deployment, commissioning, release and support of large scale projects in Python or C/C++.
- \* Technical knowledge of development in Linux operating systems (experience in system administration of such will be beneficial).
- \* Technical experience in architecture design and development of large software projects (experience with control and monitoring will be beneficial).
- \* Experience in programming in the Python programming language.
- \* Experience in prototyping and development, including, testing, deployment, commissioning, release and support of large scale projects.
- \* Experience with test-driven development and integration testing techniques, methodologies and frameworks; and supporting systems like revision control and build systems.

- \* Experience with quality assurance processes and software development processes and willingness to participate in improving software development processes and software quality procedures.
- \* Experience in the implementation of project management and system engineering principles.

#### **Knowledge:**

- \* Modern software collaboration tools such as Github, Containers, Google Drive, JIRA etc.
- \* Python programming language.

#### **Additional Notes:**

- \* Participate and thrive in a collaborative environment.
- \* Both to work independently and be a good team player.
- \* Troubleshoot issues methodically.
- \* Ability and willingness to self-train and up-skill independently.
- \* Communicate effectively (written and verbal).
- \* Understanding and experience in implementation of project management and system engineering principles.
- \* Experience with test-driven development and integration testing techniques, methodologies and frameworks; and supporting systems like revision control and build systems.
- \* Experience with quality assurance processes and software development processes and willingness to participate in improving software development processes and software quality procedures.
- \* Willingness to play a leading role in mentoring juniors.
- \* Ability both to work independently and be a good team player.
- \* Ability to participate and thrive in a collaborative environment.
- \* Self-motivated and an ability and willingness to self-train and up-skill independently.
- \* Keen attention to detail.
- \* Strong oral and written communication 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: 15 September 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