

DevOps Engineer with Machine Learning Focus 2-year contract (Full Time)



BACKGROUND

H3D Foundation (www.h3dfoundation.org) is a non-profit company established in 2019 to work towards creating an absorptive capacity for securing, building, and retaining skilled African scientists within the field of innovative pharmaceutical research and development (R&D). This will help to ensure the skills that Africa will need to move into the next decade as it seeks to become more self-reliant and to become a global player in innovative pharmaceutical R&D. The H3D Foundation also seeks to be the convening platform and credible voice for evidence-based global health views aimed partly at countering misinformation particularly around research and science in Africa and partly at bridging the gap between laboratory and clinical activities as well as innovation and access in Africa.

The H3D Foundation is managed by the chairman of the board and CEO, Prof Kelly Chibale, and two additional founding directors, Dr Susan Winks and Mrs Ayesha Banderker. H3D Foundation has a full-time programme coordinator, Ms Elliott-Wong, who supports all the H3D Foundation projects and initiatives.

The H3D Foundation seeks to appoint a full-time DevOps Engineer with Machine Learning Focus on a 2-year contract to support Prof Chibale's [Schmidt Futures AI2050 Senior Fellowship](#). The project will be done in close collaboration with the University of Cape Town's H3D Drug Discovery and Development Centre (<https://h3d.uct.ac.za/>) and with Ersilia Open Source Initiative (<https://www.ersilia.io/>). Ersilia is a global initiative focused on open-source contributions in antimicrobial drug discovery, with a particular emphasis on the needs of the global south.

The position is renewable, pending additional funding for the project.

PURPOSE

H3D is on a mission to elevate the role of artificial intelligence (AI) in African biomedical research through the recently awarded AI2050 Senior Fellowship. H3D has formed a strategic partnership with Ersilia, a pioneer in open-source contributions for antimicrobial drug discovery. The appointed DevOps engineer will assume a pivotal role in this collaboration. Their primary responsibility will be leading, developing and maintaining the appropriate cloud infrastructure necessary for the project success. Their expertise will ensure that these tools are readily accessible and functional. Initially, the focus will be on catering to the scientists at the University of Cape Town's H3D Centre,. In the second stage, the aim is to share these advancements openly with the broader scientific community, in particular, the African Drug Discovery network.

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7.32PD Hahn,
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REQUIREMENTS:

1. Master's degree or higher in Computer Science, Engineering, or a related field.
2. A minimum of 2 years of professional experience in DevOps, particularly in MLOps.
3. Proficient in Python programming.
4. Prior experience with CI/CD automation, ideally with GitHub Actions.
5. Familiarity with deploying and maintaining applications in cloud environments, especially AWS.
6. Strong grasp on API design principles, focusing on performance and scalability.

Desired skills:

1. A proactive approach, capable of anticipating and mitigating challenges.
2. Knowledge in computational chemistry or biology is not necessary but interest or previous work in the field will be a plus
3. Experience with open source communities will be a plus
4. Experience with data science notebooks such as Jupyter and visualisation tools.
5. Concepts of database management, with a preference for expertise in NoSQL systems.
6. Demonstrated understanding of MLOps and the specific challenges linked with deploying and maintaining ML systems.
7. Familiarity with best practices in software development and deployment.
8. Excellent communication skills, both verbal and written.

WORK CULTURE AT THE H3D FOUNDATION

The H3D Foundation is a small, dynamic organization working in collaboration with several partners, including the H3D Centre and Ersilia. The DevOps Engineer will be reporting to the H3D Foundation program coordinator and work closely with Ersilia's Lead Scientist and the H3D Center AI Investigator. We are looking for someone motivated by the synergistic nature of the project, capable of working independently and providing feedback to a diverse team.

This is a hybrid role, with 2-3 days a week in the office (University of Cape Town). Final arrangements can be discussed on a one-on-one basis with selected candidates. The H3D Foundation is seeking for a Senior position, but junior applicants who meet the specified requirements are also encouraged to apply.

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Key Performance Areas

KPA	Objectives	Output
AI/ML (70%)	<ul style="list-style-type: none"> ● Take ownership of deploying AI/ML models for drug discovery and development, predominantly using frameworks like Scikit-Learn, PyTorch, and Tensorflow. ● Design, develop, and maintain API endpoints for these ML models, ensuring scalability, robustness, and efficient request handling. ● Automate CI/CD workflows, predominantly with GitHub Actions, facilitating seamless integration and deployment of new features, updates, or bug fixes. ● Regularly refine processes to optimise development and deployment workflows. 	<p>New AI/ML models deployed timeously</p> <p>AI/ML models working efficiently and meeting the end user requirements</p> <p>Workflows automated and bug fixing routinely applied.</p>
Visualisations (10%)	<ul style="list-style-type: none"> ● Work with data science notebooks (e.g., Jupyter) and emphasise visualisation for more coherent data representation and analysis. 	Data visualisations fit for purpose and robust
Communication (10%)	<ul style="list-style-type: none"> ● Coordinate closely with representatives from the Ersilia Open Source Initiative remotely to align on best practices and methodologies. ● Communicate closely with H3D Centre staff and the AI2050 Senior Fellowship project team ● Provide input into project reports 	Strong teamwork and clear written and verbal communication in meetings and reports
Management (10%)	<ul style="list-style-type: none"> ● Manage and optimise applications in cloud environments, especially AWS, to ensure performance, cost-effectiveness, and high availability. 	Cloud based applications managed cost-effectively

The annual remuneration package for 2024, including benefits is in the range R710 000 to R840 000 based on experience and qualifications.

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Qualified candidates are invited to forward their CV and a cover letter detailing their pertinent experience and explaining their suitability for this role in a **single pdf file** to Ms Nicola Elliott-Wong at nicola.elliott-wong@h3dfoundation.org by **2 August 2024**.

Only shortlisted candidates will be contacted and may be required to undergo a competency test.

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