



UNIVERSITY OF NAIROBI

EXTERNAL JOB VACANCIES (PROJECT POSITION)

Applications are invited for the following position:

SENIOR RESEARCH FELLOW (SOFTWARE ENGINEERING & AI) - CENTER FOR EPIDEMIOLOGICAL MODELLING AND ANALYSIS (CEMA) – AD/4/226/2026, 1 POST

The Position Description

The Center for Epidemiological Modelling and Analysis (CEMA) at the University of Nairobi is looking to appoint an experienced Senior Research Fellow (Software Engineering & Artificial Intelligence Lead) to provide strategic and technical leadership across CEMA's digital, software engineering, and AI portfolio.

This role is designed for a senior researcher who combines hands-on software engineering excellence, AI/ML expertise, and research leadership, with demonstrated experience delivering robust, scalable digital platforms that support epidemiological modelling, health analytics, and data-driven decision-making.

The successful candidate will lead the design, development, deployment, and governance of CEMA's software and AI systems, working closely with clinical specialists, data scientists, economists, epidemiologists, modelers, policy experts, and international collaborators. The candidate will be involved in leading training and mentorship of graduate students and scientists in early- to mid-level career stages in the technical area, and will be expected to provide research direction, contribute to growing the program including in resource mobilization.

About CEMA

CEMA is a multidisciplinary Centre of Excellence at the University of Nairobi, bringing together epidemiologists, mathematicians, statisticians, computer scientists, software engineers, health economists, clinicians, and data scientists to advance data-driven public health solutions across Africa.

Since its establishment in 2020, CEMA has played a pivotal role in informing responses to disease outbreaks, advancing the control and elimination of neglected tropical diseases, strengthening health systems, supporting evidence-based policy and as a training hub for use of data analytics and modelling for health decision-making. CEMA is supported through research grants including from the Gates Foundation, the Wellcome Trust, among others.

Duty Station: Center for Epidemiological Modelling and Analysis (CEMA), located at the University of Nairobi Institute of Tropical and Infectious Diseases, Nairobi, Kenya.

Reporting to: CEMA Co-Directors

Duties and Responsibilities:

A. Technical & Strategic Leadership

1. Provide overall technical leadership for CEMA's software engineering and AI strategy, ensuring alignment with research priorities, funder requirements, and national and regional health agendas.
2. Lead the architecture, development, deployment, and maintenance of secure, scalable, and high-performance software platforms supporting epidemiological modelling, simulations, dashboards, and decision-support tools.
3. Define and enforce software engineering best practices, including code quality, testing, CI/CD, documentation, security, and sustainability.

B. AI, Data Science & Modelling Systems

1. Lead the design and implementation of AI and machine learning solutions for epidemiological analysis, forecasting, health systems modelling, and policy evaluation.
2. Oversee the integration of AI/ML workflows with modelling pipelines, data platforms, and visualization tools.
3. Promote responsible, explainable, and ethical AI practices within public health and policy contexts.

C. Data Platforms & Governance

1. Design and implement robust data architectures including data pipelines, APIs, and interoperable systems that support large-scale, multi-country datasets.
2. Lead the development and enforcement of data governance, privacy, security, and compliance frameworks aligned with international standards (e.g., GDPR or equivalent).
3. Ensure effective use of cloud and high-performance computing (HPC) environments to support complex modelling workloads.

D. Team Leadership & Capacity Strengthening

1. Lead, mentor, and coordinate multidisciplinary technical teams including software engineers, data scientists, and research staff.
2. Build internal capacity through training programs, technical workshops, and digital learning modules in software engineering, AI, and data science.
3. Contribute to talent development and succession planning within CEMA's digital and analytics functions.

E. Research, Partnerships & Dissemination

1. Contribute to applied research through co-authorship of peer-reviewed publications, technical reports, and policy briefs.
2. Represent CEMA in technical engagements with government agencies, academic partners, funders, and international collaborators.
3. Support proposal development by shaping the digital, AI, and software components of competitive research grants.

Job Specification

- a. PhD in any of the following fields; Computer Science, Software Engineering, Data Science, Computational Biology, or a closely related quantitative field.
- b. Minimum of 5 years progressive experience in software engineering, AI/ML, data science, or computational research, including leadership of complex technical programs.
- c. Demonstrated expertise in:
 - i. Full-stack software engineering (e.g., Python, R, JavaScript, modern web frameworks)
 - ii. System architecture and API design
 - iii. Cloud and/or high-performance computing environments
- d. Proven experience applying AI and machine learning to real-world, large-scale datasets, preferably in health, development, or policy settings.
- e. Strong experience designing and operationalizing data governance, privacy, and security frameworks.
- f. Track record of leading multi-institutional or regional technical initiatives.
- g. Excellent communication and writing skills, with the ability to engage both technical and non-technical stakeholders.
- h. Demonstrated ability to align advanced digital and AI solutions with public health priorities and policy needs.

Terms of Appointment

The appointment will be on a **one (1) year contract**, renewable subject to satisfactory performance and availability of funds. A competitive salary and benefits package will be offered, commensurate with qualifications and experience, including health insurance, leave allowance, and opportunities for professional development.

NOTES

1. Applicants should email their application letters, certified copies of certificates and curriculum vitae (CV) giving details of their qualifications, experience and three (3) referees, as well as indicating their telephone and e-mail contacts.
2. Applications and related documents should be addressed to the Director, Human Resource, University of Nairobi.
3. Applicants should indicate their current designations/immediate previous designation, salary, and benefits attached to those designations.
4. The application letter must bear the reference code indicated in the advertisement.
5. Late applications will not be considered.
6. Applications should be emailed as one file in PDF to: recruitswengai@uonbi.ac.ke

CLOSING DATE: MONDAY, MAY 11, 2026

**THE UNIVERSITY OF NAIROBI IS AN EQUAL OPPORTUNITY EMPLOYER
ONLY SHORTLISTED APPLICANTS WILL BE CONTACTED**