

MSc Fellowship Advertisement
Ad No. 004/24

Two (2) MSc fellowships available for 2nd year MSc students registered at the Department of Computer Science – University of Nairobi

Two (2) MSc fellowships available for 2nd year MSc students registered for the MSc Data Science or MSc Public Health Data Science course at the Department of Mathematics – University of Nairobi

Position: MSc Fellow (4 Positions)

- Department of Computer Science – 2 Positions
- Department of Mathematics – 2 Positions

Duration: 6 months (non-renewable)

Reporting To: CEMA Data Scientist

Expected Start Date: October 1, 2024

Duty Station: Center for Epidemiological Modelling and Analysis, University of Nairobi

Are you registered for a Master's degree at the Department of Computing Sciences at the University of Nairobi OR are you registered for a Master of Science in Data Science or Public Health Data Science at the Department of Mathematics at the University of Nairobi? Are you passionate about making a positive impact on health? Look no further! The Center for Epidemiological Modelling and Analysis (CEMA) at the University of Nairobi is offering an exceptional opportunity to join our team as a CEMA MSc Fellow.

About CEMA

CEMA is a multidisciplinary Center of Excellence that uses data-driven approaches to guide the control of infectious diseases and improve public health in Kenya and the African continent. Established in 2020, CEMA boasts a collaborative and intellectually stimulating environment, attracting experts from various fields of study. Through insights from applied epidemiological modelling and analytics, CEMA has played a critical role in guiding responses to COVID-19 in Kenya and the continent, catalyzing the control and elimination of neglected tropical diseases, and guiding the delivery and maintenance of essential health services during health emergencies. CEMA provides training in quantitative skills required to manage and analyze health data to address priority public health questions in the region. CEMA currently focusses on the following health-related fields:

- Maternal and child health care
- Immunization
- Control of local endemic diseases including malaria and neglected tropical diseases
- Antimicrobial resistance
- Disease surveillance and response
- Primary health care
- Health facility accessibility and utilisation
- Health system building blocks – *leadership and governance, service delivery, health system financing, health workforce, medical products, vaccines and technologies, health management and information systems*

The Opportunity

Innovations in data science and data analysis have the capacity to improve health by utilising new techniques for analysis and extracting new insights from data. Despite the abundance of health datasets within our country and continent, they remain largely underutilised, and advances in computing and statistical methods are not commonly utilised within the health sector. However, as these methods evolve, it

is important that we harness and build local capacity to use new analytics techniques to address our health challenges. The power

of science and innovation can improve health outcomes and dramatically reduce inequities in health status among our population.

We are looking to identify 4 MSc students to complete a project that makes use of computing/mathematical and/or statistical techniques to address a health challenge/opportunity. These individuals will propose a project which they will complete as part of the learning experience of their postgraduate training at either the Department of Computing Science or the Department of Mathematics at the University of Nairobi. **The project undertaken will serve as the departmental MSc project, after discussion with the academic supervisor. Only students who have not yet presented their project proposal to the department are eligible to apply.**

The project undertaken is expected to meet one or more of the following conditions:

- Makes use of computing, mathematical and/or statistical methodologies that involve artificial intelligence, machine learning, deep learning, natural language processing, data mining, topological data analysis or probabilistic modelling using Bayesian networks or other probabilistic models
- Makes use of existing health and health related datasets e.g. demographic health surveys, national census, routinely collected surveillance data
- Provides predictions of disease outcome and/or survival, outcome forecasting, or anomaly detection

Successful fellows will receive technical support from CEMA to complete their projects. In addition, fellows will be provided with funding of up to KES 300,000.00 to be used within 6 months in order to complete their project. This funding can be used to compensate the student for their time, pay research assistants (if any), purchase computers or software, access pay to view on-line resources, purchase software, undertake travel to support their project, attend trainings or any other cost in line with their project goals etc.

Requirements:

- Currently registered for an MSc at the Department of Computer Science at the University of Nairobi OR currently registered for the MSc Data Science or Public Health Data Science course at the Department of Mathematics – University of Nairobi
- Have completed at least 6 months since their date of enrolment in the MSc program
- Have not yet submitted their project proposal to the department
- Completed application form found [HERE](#)

Application Form Requirements:

- Applicant's details including the student registration number
- Updated CV
- Concept note (maximum 2 pages)
- Budget with budget narrative

Concept Note Requirements:

Please include the following in your concept note: (suggested lengths in parentheses)

- **Introductory information (1/2 page):**
 - o A short description of the specific health problem your proposal addresses
 - o Indicate in one or two sentences in bold the essence of your idea for a solution
 - o Why your idea is unconventional or creative?
 - o Who /which structure/ organization is your solution targeted at?
- **Proposal information (1 page):**
 - o What is your big idea?
 - o A brief description of the work you will undertake
 - o What data do you require (if any)?
 - o What data do you expect to generate?
 - o Provide a timeline for completion of the work within 3-4 months
- **Path to impact (1/2 page):**
 - o What would your next steps be if you are successful with the proposed project?
 - o How are you thinking about scaling it up and/or applying your idea to other problems?

- **References:**

- Use Vancouver referencing style

Your concept note must be formatted as follows.

- No longer than 2 pages maximum
- 11-point font or larger
- At least 0.5" margins all around
- Single line spacing
- Standard character spacing (neither expanded nor condensed)
- Arial or Times New Roman font

Budget Requirements:

Please complete a high-level budget with the categories listed below:

- Personnel (including stipend or other direct compensation)
- Capital Assets/Equipment (any asset costed at more than KES 100,000)
- Travel
- Supplies
- Other Expenses

Budget Narrative: At the bottom of your budget, please provide one to two paragraphs explaining the costs to be covered under each budget line and how these costs relate to the activities proposed in your concept note and your planned outcomes.

Application Link:

Interested candidates who meet the above criteria are encouraged to fill out the application form on this [LINK](#). Only online applications will be accepted.

Application Deadline: August 14, 2024