Job Description

This form summarises the purpose of the job and lists its key tasks. It is not a definitive list of all the tasks to be undertaken as those can be varied from time to time at the discretion of the School, in consultation with the postholder.

Job title: Data Engineer (Zambia Evidence Lab)

Department/Division: International Growth Centre and Data Science Institute
Accountable to: IGC Zambia Country Manager

Job Summary:

The International Growth Centre (IGC) works with policymakers in developing countries to promote inclusive and sustainable growth through pathbreaking research. We are a global research centre with a network of world-leading researchers and in-country teams and initiatives working across Africa, South Asia, and the Middle East. Based at LSE and in partnership with the University of Oxford, we are majority funded by the UK Foreign, Commonwealth and Development Office (FCDO). We work to improve the productivity of people and firms as the key driver of sustainable economic development.

This Data Engineer will lead the development of the data architecture and key data products for a new economic policy-focused data lab in the Zambia Ministry of Finance, working with the International Growth Centre (IGC) and the Data Science Institute (DSI). The role, which will be based at LSE, is integral to IGC and DSI's efforts to leverage data science and engineering to address critical global challenges and foster sustainable development through cutting-edge research and technological innovation.

The principal responsibility will be supporting the delivery of the Zambia Evidence Lab (ZEL). ZEL is an embedded lab within the Zambia Ministry of Finance and National Planning that aims to help policy makers make more effective use of the government's administrative data to support key policy decisions and to build a stronger culture of evidence-based policy making.

Working in a cross-functional team of economists and data analysts based in Lusaka and London, the Data Engineer will lead the use of data engineering, data science, and computational approaches to support better public policy decisions. This includes translating complex data into actionable insights for policymakers, applying data collection, pipeline, storage, and visualisation tools, and improve ZEL's understanding of how data engineering can deliver real-world economic policy impact.

The key priorities will include:

— Leading the development of ZEL's data architecture which will use datasets of varying quality and type (from unstructured text to large-scale national surveys) to support key policy outputs, including live dashboards and economic analyses.
— Developing and applying practical knowledge of data engineering tools and techniques (i.e., data mining, visualisation, large language models, etc.) across the project lifecycle. Considering trade-offs between a large range of techniques and apply the most relevant to the task.
— Designing and developing interactive dashboards, using tools like Tableau and R, that provide real-time insights to policymakers, enabling them to visualize and monitor key economic indicators and policy outcomes effectively.

- Leveraging programming skills in R, SQL, Python, and other languages to manage, manipulate, and analyse data effectively.
- Utilising AI and machine learning approaches to improve data access, integration, and analysis for policy solutions.

Duties/Responsibilities or HERA Competencies

The role will provide data engineering research support for the Zambia Evidence Lab (ZEL), as a joint appointment of the International Growth Centre (IGC) and Data Science Institute (DSI).

Key Responsibilities:

1. **Lead Data Architecture Development:**
   - Lead the development of ZEL's data architecture, managing diverse datasets ranging from unstructured text to large-scale national surveys.
   - Build robust reporting and visualisation tools to link datasets to desired policy outputs, including real-time dashboards and economic analyses.
   - Work closely with cross-functional teams of economists and data analysts in Lusaka and London to create a robust infrastructure that supports data-driven decision-making at the highest levels of government.

2. **Apply Data Engineering Techniques Across Project Lifecycle:**
   - Develop and apply a broad array of data engineering tools and techniques, such as data mining, visualization, and large language models, to extract actionable insights from complex data.
   - Evaluate and balance trade-offs between different methodologies and approaches, selecting the most appropriate techniques to address specific policy questions and challenges.
   - Design and implement interactive dashboards that provide real-time insights to policymakers, enabling them to visualize and monitor key economic indicators and policy outcomes effectively.
   - Exploring how AI-enhanced approaches such as retrieval augmented generation (RAG) can facilitate data access and analysis, including through the creation of dynamic dashboards.

3. **Programming and Data Management:**
   - Utilize advanced programming skills in R, SQL, Python, and other relevant languages to effectively manage, manipulate, and analyse data.
   - Design and implement data pipelines that ensure the efficient collection, storage, and retrieval of large datasets, facilitating their integration into ongoing policy analysis efforts.

4. **Cross-functional Collaboration and Capacity Building:**
   - Collaborate with a diverse team of data scientists, economists, and policy analysts, both in Lusaka and London, to ensure that ZEL's outputs are aligned with the strategic goals of Zambia's Ministry of Finance.
   - Mentor junior researchers and data analysts, contributing to the capacity-building efforts within Zambia and fostering a culture of data-driven decision-making within government institutions.
   - Engage with external stakeholders, including international organizations, NGOs, and academic institutions, to share insights and best practices, and to ensure that ZEL's work is

informed by and contributes to global knowledge in data engineering, data science and public policy.

5. **Innovative Research and Development:**
   — Stay abreast of the latest developments in data science and engineering, particularly in areas relevant to public policy, and apply this knowledge to enhance ZEL's analytical capabilities.
   — Contribute to the development of new research projects that leverage data science to address emerging challenges in Zambia and other developing economies.
   — Actively participate in the dissemination of research findings through academic publications, conferences, and policy briefings, thereby contributing to the global discourse on data-driven development.

As part of the role, the Data Engineer will have the opportunity to have four days a month to focus on personal research and/or professional development objectives with prior agreement.

Flexibility
To deliver services effectively, a degree of flexibility may be required in the duties performed in order to meet the exigencies of service. Job roles may also naturally develop over time and ongoing substantial changes to a role will be discussed between line managers and their staff, with job descriptions updated as and when appropriate.

Equity, Diversity and Inclusion (EDI)
LSE is committed to building a diverse, equitable and truly inclusive university. All posts (and post holders) will seek to ensure diversity and inclusion, while opposing all forms of unlawful and unfair discrimination on the grounds of age, disability, gender identity, marriage and civil partnership, pregnancy and maternity, race, nationality, ethnic or national origin, religion or belief, sex and sexual orientation, or social and economic background.

Ethics Code
Posts (and post holders) are assumed to have a responsibility to act in accordance with the School's Ethics Code and to promote the principles and values that the Code enshrines. The Ethics Code clearly states that the whole LSE community, including all staff, students, and governors of LSE, are expected to act in accordance with the principles which are set out in the Code. As such you are required to read and familiarise yourself with it. The School's Effective Behaviours Framework is designed to support this Code. It sets out examples for the six behaviours that all staff are expected to demonstrate, these can be found on the following link: click here

Environmental Sustainability
The post holder is required to minimise environmental impact in the performance of the role, and actively contribute to the delivery of the LSE Environmental Policy.