Clayton Lumwaya

Data Scientist, Geo-Informatics & Climate Change

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····················**Professional Summary**·······················

Articulate and tech-savvy Data Scientist and Geo-informatics with expertise in GIS, Climate Change, and Remote Sensing. Offers extensive and wide-ranging technical proficiency in research and surveys, data modelling, software development, mapping, advanced remote sensing, dashboards, and databases.

····························**Skill**······································

Expertise

- Data Modelling
- Remote Sensing
- GHG Inventory
- Research
- Software Development
- Climate Change Modelling
- Disaster Modelling
- UAV Pilot
- Geospatial Analysis
- Spatial Data Visualization
- Machine Learning
- Environmental Assessment
- Database Management
- Dashboard Creation
- Project Management

Programming

- JavaScript
- React Native
- Python
- PHP
- SQL

Software's and Tools

- SPSS /Stata
- Kobo/ODK
- Postgres
- Geoserver
- Google Earth Engine
- Arc/Pro GIS
- QGIS
- CAD
- Google Earth

···························**Experience**······································

Senior Inspector : Climate Change & GIS   *05/2023 to Present*

Zambia Environmental Management Authority

Work Description:

- ✓ Engage in climate change data modelling, including greenhouse gas (GHG) inventory analysis and reporting.
- ✓ Conducting and review Environmental Impact Assessments (EIA) using GIS and Remote Sensing
- ✓ Review Project and analyse the impact of the projects on the environment.
- ✓ Spearhead in Mapping of pollution hotspots and conduct land cover and change detection analysis.
- ✓ Conduct Geospatial Training for the staffs and provide technical support and assistance.
- ✓ Support and training stakeholders in geospatial mapping and analysis.

- ✓ Conduct forest and wetland inventory.
- ✓ Lead in the mapping of the invasive species.
- ✓ Utilize advanced climate modelling techniques to predict and analyse environmental changes and their impacts.
- ✓ Perform remote sensing activities using UAVs.
- ✓ Develop and manage databases for remote sensing and geospatial datasets.
- ✓ Conduct research and surveys to gather data on environmental and climate change indicators.
- ✓ Collaborate with stakeholders to develop and refine strategies for climate resilience and sustainability.
- ✓ Develop dashboards and systems for visualizing and communicating climate data to decision-makers.
- ✓ Implement machine learning algorithms to enhance the accuracy of environmental assessments.
- ✓ Training the staffs in Geospatial mapping and spatial analysis.

Data and GIS Analyst *03/2020 to 05/2023*

Zambia Red-Cross Society

Work Description:
- ✓ Led the flood, drought and risk mapping initiatives utilizing advanced remote sensing techniques, enhancing disaster preparedness and response capabilities.
- ✓ Conducted comprehensive hydrological analyses to assess and mitigate flood and flood risks effectively, contributing to proactive disaster management strategies.
- ✓ Spearheaded training sessions for staff and stakeholders on proficient use of data collection tools such as Kobo and ODK, as well as data analysis software including QGIS, ArcGIS, Power BI, Microsoft Office, and SPSS.
- ✓ Managed and executed various assessments and surveys, including baseline, midterm, and endline evaluations, ensuring data accuracy and relevance for disaster risk reduction efforts.
- ✓ Developed intuitive dashboards and robust data systems to facilitate streamlined data management and visualization processes, supporting efficient disaster response and management operations.
- ✓ Conducted in-depth spatial data analyses to inform strategic decision-making and enhance disaster response capabilities, leveraging geospatial insights for effective resource allocation and coordination.
- ✓ Established and maintained databases critical for the Zambia Red-Cross Society's disaster preparedness and response initiatives, ensuring data integrity and accessibility in emergency situations.
- ✓ Provided expert technical support, fostering a data-driven culture and enabling informed decision-making for disaster preparedness, response, and management activities.

GIS and Project Officer *05/2018 to 03/2020*

CNS Urban Consultants

Work Description:
- ✓ Developed and maintain GIS databases, ensuring data accuracy and accessibility for informed decision-making.
- ✓ Conducted mapping activities, utilizing GIS technology to visualize spatial data.
- ✓ Managed Integrated Development Plan projects for various councils, facilitating sustainable development initiatives.
- ✓ Contributed to the development of strategic plans for various councils, aligning with organizational objectives and community needs.
- ✓ Handled Environmental Impact Assessment projects, assessing environmental implications and ensuring compliance with regulations.
- ✓ Conducted comprehensive data collection and analysis, providing valuable insights for project planning and implementation.

Project Name: *Information Management System Developer.*

> **Description:** Supported the development of Information Management System for Lusaka Provincial Planning Authority. My role was development and maintenance of Databases using Postgres. Further, I trained the staff on data collection using mobiles Apps, Spatial Data analysis using Qgis and system maintenance.
>
> **Client:** Lusaka Provincial Planning Authority
>
> **Role:** Developer

Project Name: *Development of Local Area Plan and Spatial Framework.*

> **Description:** Developing Local Area Plan and Spatial framework Analysis for Meheba refugee camp by mapping and analysis of environmental and social economic data needed for the development of Local Area Plan. This project also involved collection data and development of dashboards.
>
> **Client:** Japan International Cooperation Agency:
>
> **Role:** Lead GIS Specialist (Consultant)

Project Name: *Geolocating Unvaccinated Children in Mansa and Kabwe.*

> **Description:** Through the American Red Cross 5-Point Plan Project which evolved geolocate clusters of zero-dose and under-immunized children, identify the reasons these children were missed, and facilitate sustainable solutions. The data was collected using ODK and analyzed in real time using R.
>
> **Client:** American Red Cross
>
> **Role:** Lead Data Specialist (Consultant)

Project Name: *Remote Sensing: Inversive Plants Mapping.*

> **Description:** Was engaged to process and analyse the sentinel imagery by calculating the change in vegetation and distribution in Lochinvar Forest Reserve and Kazungula. The work was successfully completed using a scripted custom tool.
>
> **Client:** Meedem Zambia
>
> **Role:** Lead GIS & Data analyst

Project Name: *Dam Spirage Environmental Impact Assessemet.*

> **Description:** The project involved analysing the impact of flooding caused by dam spillage in Mumbwa using GIS and Remote Sensing, Data collection and Validation using Kobo and ODK.
>
> **Client:** IFRC Kenya, UN (OCHA)
>
> **Role:** GIS & Data analyst

Project Name: *Spatial framework Analysis for Masaiti District*

> **Description:** The project involved developing Spatial framework Analysis for entire district by mapping and analysis of environmental and social economic data needed for the Integrated Development Plan
>
> **Client:** Masaiti Council
>
> **Role:** Data & GIS Analyst

Project Name: *Spatial framework Analysis for Kafue District*

> **Description:** The project involved developing Spatial framework Analysis for entire district by mapping and analysis of environmental and social economic data needed for the Integrated Development Plan
>
> **Client:** Kafue Council
>
> **Role:** Data & GIS Analyst

1. [Development of an Integrated System to Enhance Spatial Data Processing & Management for Planning Authorities (scirp.org)](#)

Education		
MSc Geo-Informatics Science	University of Zambia (UNZA)	2021-2023
Monitoring & Evaluation & Data Analysis	University of Zambia (UNZA)	2020
BSc Urban and Regional Planning	Copperbelt university (CBU).	2014-2018
General Education	Chindwin Secondary	2010

Details	
Nationality	Zambian
Language	English
Affiliations	Zambia Institute of Planner, Engineering Institute of Zambia

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