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Koome Derrick

Web GIS Developer

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github.com/koome-dev
[My Portfolio website](#)

EDUCATION

The University of Nairobi, Kenya.

Bsc. Geospatial Engineering

Relevant Courses: Remote Sensing, Geographical Information Systems (GIS), Photogrammetry

SKILLS

Programming Languages: SQL, Python, HTML, CSS, Javascript (Jquery & AJAX), PHP

Web GIS Development: possess a solid foundation in both client-side and server-side technologies, specializing in building interactive, map-based applications. I am proficient in querying, inserting, and deleting spatial data in real time using GeoJSON formats, ensuring dynamic and responsive web mapping applications.

Software's: QGIS, ArcGIS Online, Visual Studio Code, ArcGIS Pro, Pycharm, Jupyter notebooks

Database: PostgreSQL, PostGIS

Geospatial Analysis: familiar with geopython libraries such as Geopandas, Geopy, Plotly, Folium, and can perform spatial operations with ArcGIS Pro such as suitability modeling, prediction modeling, object detection and hotspot and outlier analyses.

Core Competencies: Writing – Co-author of an industry book *“Project Design for Geomatic Surveyors and Engineers”* which is available for sale on **Amazon**.

PROJECT EXPERIENCE

March 2024

Global warming Geospatial Analysis

Analyzed over 200 years (1750–2020) of global average temperature data to uncover long-term trends. Leveraged Python and the Pandas library to efficiently process and extract relevant insights from the dataset. Created compelling visualizations, including line charts, choropleth maps, and geographic heat maps, to illustrate the clear correlation between rising global temperatures and industrialization. This analysis effectively communicated the impact of human activity on climate change, presenting complex data in an accessible and visually engaging manner.

April 2024

Covid 19 Geospatial Analysis

Analyzed global COVID-19 data from the pandemic's onset to February 2022, including confirmed, recovered, and death cases. Utilized animated choropleth maps and geographic scatter plots to visualize the spread and recovery rates over time. Additionally, employed markers and marker clusters to highlight cumulative deaths by country, effectively conveying critical trends and insights through diverse and engaging visualizations.

August 2024

Suitability Modelling of Carbon-Neutral Headquarters

With the use of ArcGIS Pro Spatial Analyst license, we chose a location for a corporate headquarters with minimal carbon footprint using the following criteria; a location that reduces construction cost and is easily accessible by employees; an optimal location to incorporate renewable energy devices; a location that is accessible to various amenities; and a location that will minimally disrupt critical environmental areas and corridors.

October 2024

Hotspot and Outlier Analysis

I applied hotspot and outlier analysis to uncover meaningful patterns in SNAP (Supplemental Nutrition Assistance Program) participation, identifying regions with high participation requiring sustained resources and low participation needing targeted outreach. Hotspot analysis revealed geographic clusters, while outlier analysis flagged anomalies that highlighted unique challenges or barriers. These insights enabled decision-makers to allocate resources more efficiently and equitably, ensuring better access to nutritious food for underserved communities.

January 2025

Web Map of Nairobi's bar density

I created a map showing Nairobi's bar density by generating a hexagonal grid and counting bar locations within each hexagon. Turf.js was used for grid creation and bar analysis while the data was obtained by querying the overpass AP1. Visualizations a construct of ArcGIS Maps SDK for Javascript.

February 2025

Animated Web Map of President Ruto's Foreign travel

Created an animated map showing Kenya's President extensive foreign travel in his first two years of office. You've got to visit my portfolio to see it.

June 2025

Work in progress to be launched in June

Currently working on a full-stack web-gis portal with both client-side and server-side technologies. I am merging data from Kenya's health and education facilities and analyzing their proximity to groundwater sources. The portal will have capabilities of real-time data insertion and deletion as well as querying the database and auto-zooming the result. Watch this space.

WORK EXPERIENCE

Nile Surveys and Geo-solutions LTD

April 2014-December 2015

Survey Party Chief

- Worked on the Kalobeyei Settlement Scheme in Kakuma. Was in the team that performed the topographical survey as well as the spatial planning of the scheme. A UNHCR project.
- Worked on the pipeline route survey for the provision of water in Bentiu refugee camp, Unity State, South Sudan. A UNICEF project.
- Worked on the cadastral survey of Konza Technopolis, a Kenyan Vision 2030 project funded by the Kenyan government.

Corsmap

September 2017-December 2021

Co-Founder

- Together with two others, we created a Web-GIS portal for all the Continuously Operating Reference Stations (CORS) for Africa. In total we web-mapped and created a system with data and metadata of more than 250 CORS across 28 African Countries.

Cheswick Surveys

January 2016-Present

Owner/Projects Lead

- Worked on drone/UAV mapping of 3km² for a run-of-the-water power project. Came up with an Orthomosaic and Digital Elevation model using Pix4D processing software. Digitized cadastral maps using ArcGIS software and then subsequently overlaying the two. Created a GIS database of the same by including attributes such as title number, acreage etc.
- Sold software and hardware products for Carlson Software, an American software company founded in 1983 with headquarters in Kentucky, USA. Their most famous offerings include Carlson Survey, SurvPC, SurvCE, Photo Capture etc.

GIS and Land Survey Consultant

- Carried out a topographical survey on canals, sub-canals and basins for the purpose of rehabilitating Aweil Rice Scheme in Aweil, Northern Bahr-el-Ghazal State, South Sudan. My drawings were used as the basis for the subsequent engineering designs. A Food and Agriculture Organization (FAO) project.
- Topographical survey of proposed UNICEF offices in Kismayo, Beledweyne and Lansalet UN camps in Somalia. A UNICEF project.
- Topographical survey of proposed extension of the Bosaso Coast Guard in Bosaso, Somalia. A European Union (EU) funded project

CERTIFICATES

- Kaggle: Geospatial Analysis
- Udemy: Spatial Analysis and Geospatial Data Science in Python
- Udemy: Google Earth Engine for Machine Learning and Change Detection
- Udemy: Web GIS: From Beginner to Advanced(Ongoing)
- Esri: Spatial Data Science; The New Frontier in Analytics
- Esri: Make an Impact with Modern GeoApps (ArcGIS Storymaps, Experience builder, Dashboards and InstantApps)
- Kenya Civil Aviation Authority: Remote Pilot's License

INTERESTS AND HOBBIES

- **Favorite books:** Virtuous Leadership (Alexander Havard), Zero to One (Peter Thiel), Linchpin (Seth Godin), Atomic Habits (James Clear).
- **Natural abilities:** I write well. I wrote dozens of articles in my previous industry which got published in leading industry magazines at the world stage.

REFERENCES

NB: Can be provided on request