

# Koome Derrick

## Personal details

 Koome Derrick

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 Kenyan

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## Skills

SQL

Python

HTML

CSS

Javascript

Jquery

AJAX

PHP

QGIS

ArcGIS Online

Visual Studio Code

ArcGIS Pro

Pycharm

Jupyter notebooks

PostgresSQL

PostGIS

Geopandas

Geopy

## Education

### Bsc. Geospatial Engineering

Present

The University of Nairobi, Kenya

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

## Employment

### Survey Party Chief

Apr 2014 - Dec 2015

Nile Surveys and Geo-solutions LTD

- 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.

### Co-Founder

Sep 2017 - Dec 2021

Corsmap

- 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.

### Owner/Projects Lead

Jan 2016 - Present

Cheswick Surveys

- Worked on drone/UAV mapping of 3km<sup>2</sup> 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

Jan 2021 - Feb 2025

SETAC Engineering Consultancy

- 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 Lasalet 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.

Plotly

Folium

Pix4D

Turf.js

ArcGIS Maps SDK for Javascript

Writing

## Hobbies

- Reading books such as Virtuous Leadership, Zero to One, Linchpin, Atomic Habits
- Writing articles published in leading industry magazines

## Courses

### Geospatial Analysis

#### Spatial Analysis and Geospatial Data Science in Python

#### Google Earth Engine for Machine Learning and Change Detection

#### Web GIS: From Beginner to Advanced

#### Spatial Data Science; The New Frontier in Analytics

#### Make an Impact with Modern GeoApps (ArcGIS Storymaps, Experience builder, Dashboards and InstantApps)

#### Remote Pilot's License

## Project Experience

### Global warming Geospatial Analysis

Mar 2024

Analyzed over 200 years 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.

### Covid 19 Geospatial Analysis

Apr 2024

Analyzed global COVID-19 data from the pandemic's onset to February 2022.

- Utilized animated choropleth maps and geographic scatter plots to visualize the spread and recovery rates over time.
- Employed markers and marker clusters to highlight cumulative deaths by country, effectively conveying critical trends and insights through diverse and engaging visualizations.

### Suitability Modelling of Carbon-Neutral

Aug 2024

#### Headquarters

Used ArcGIS Pro Spatial Analyst license to choose a location for a corporate headquarters with minimal carbon footprint.

- Criteria included reducing construction cost, accessibility, renewable energy incorporation, amenity access, and minimal environmental disruption.

### Hotspot and Outlier Analysis

Oct 2024

Applied hotspot and outlier analysis to SNAP participation data.

- Identified regions with high participation requiring sustained resources and low participation needing targeted outreach.
- Hotspot analysis revealed geographic clusters, while outlier analysis flagged anomalies highlighting unique challenges or barriers.

- Insights enabled decision-makers to allocate resources more efficiently and equitably.

**Web Map of Nairobi's bar density****Jan 2025**

Created a map showing Nairobi's bar density using hexagonal grid and Turf.js.

- Data obtained by querying the overpass API.
- Visualizations constructed with ArcGIS Maps SDK for Javascript.

**Animated Web Map of President Ruto's Foreign travel****Feb 2025**

Created an animated map showing Kenya's President extensive foreign travel in his first two years of office.

- Portfolio website contains the visualization.

**WebGIS Portal for Groundwater Management****Aug 2025**

Developed an interactive WebGIS portal with full CRUD functionality for over 21,000 well data points.

- Implemented spatial clustering, real-time search and editing, statistical dashboards, and map-based analytics.
- Supports SDG 6 (Clean Water and Sanitation) by enabling effective groundwater resource monitoring and decision-making.

## Core Competencies

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