

Natividad Mkara

Geospatial
Engineer/Spatial Data
Analyst

Contact

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Skills

- Spatial Analysis
- GIS
- Python Programming
- Engineering Surveys
- Visualization & Reporting
- Data modeling
- SQL Databases
- Project Leadership

Software



Experienced Geospatial Engineer and Spatial Data Analyst with 7 years of experience, with a strong background in utilizing geospatial technologies and tools to analyze, visualize and interpret spatial data for a wide range of applications. My expertise includes the use of geographic information systems (GIS), remote sensing, and spatial statistics to support decision-making processes in a variety of industries including environmental management, urban planning, natural resource exploration, and fraud prevention.

I have a proven track record of working collaboratively with teams to develop and implement geospatial solutions that effectively address complex spatial challenges. My skills in data acquisition, data integration, data analysis, and data visualization enable me to provide insightful and actionable information to clients and stakeholders.

Furthermore, I possess excellent communication and problem-solving skills that allow me to effectively communicate complex technical information to both technical and non-technical audiences. I am committed to staying current with emerging geospatial technologies and tools and leveraging them to deliver innovative solutions that help organizations achieve their strategic objectives.

Work History

2022-01 -
Current

SPATIAL DATA ANALYST

Mapsoft Systems, Nairobi

Spatial data analyst tasked with extracting deeper insight from data using a comprehensive set of analytical methods and spatial algorithms; machine learning and deep learning techniques to aid in decision making.

- Data collection, cleaning, analysis and modelling based on a project requirement
- Performed data visualization on a data set using various graphs and data mining algorithm in python programming
- Collated road inventory datasets for the entire country, developed models to analyse condition of each road to aid in funds allocation for their repair and maintenance
- Write SQL statements for Quality Control definition queries
- Created visualization charts based on various

GIS: ARCGIS, ERDAS,
AutoCAD

Excellent

LISCAD, Survey Master

Excellent

PowerBI & Tableau

Excellent

SQL Databases

Excellent

2018-01 -
2022-01

parameters of datasets using PowerBI

- Used GeoPandas to analyse the spatial datasets in python and create maps from the analytics and plotting data using matplotlib
- Reviewed and improved drone imagery and LiDAR processing procedures
- Create and maintain multiple geospatial databases utilizing ArcGIS, ERDAS and Python

GEOSPATIAL ENGINEER

Ramani Geosystems, Nairobi

Involved in geodetic field surveys, by use of RTK and Total Station Equipment for densifying of control points used for design of roads, pipelines and power lines.

- Carried out various topographical surveys and prepared 2D and 3D models using ArcGIS and AutoCAD to aid in design.
- Prepared Survey Output Charts and Maps and presented to clients using PowerBI and Tableau
- Client liaison before, during and after projects to understand project needs and requirements
- Prepared and designed underground utility maps by surface scanning using Underground Penetrating Radar.
- Demonstrated experience with civil 3D by reviewing clients' data and making design improvements on it
- Prepared project reports : inception, implementation and final reports.
- Extracted terrain data from remote-sensed imagery, field reconnaissance, digital data, and existing topographic products • Used data base management for the storage of aerial photographs, maps, digital data bases and collateral source material.
- Developed automated data analysis scripts in Python, increasing accuracy of results and reducing individual engineer analysis time.
- Created maps, geospatial products, visualization products and reports for both face-to-face customers and customers around the globe
- Created and analyzed geographic data and compiled them into maps and other geospatial

products.

- Delegated tasks and supervised the production of geospatial products while under pressure to meet tight deadlines.

2015-01 -
2017-01

MAPPING TECHNICIAN

Ramani Geosystems

Mapping Technician at the GIS department tasked with 2D and 3D mapping and editing of Digital Terrain Models generated from LiDAR data. Duties

- Generating and editing of Digital Terrain models from captured LiDAR data using inpho software.
- Creating, translating and integrating GIS data layers using ArcGIS
- Digitizing and attributing new features using ArcMap and QGIS
- Developed and created GIS maps with cadastral information by georeferencing, digitizing and spatial adjustment of survey plans using ArcGIS and QGIS software.
- Extract geographic data from collateral data sources such as satellite imagery, aerial photography, and digital data

Education

2024-01

Msc: Data Science & Analytics

Strathmore University

2015-01

Bsc.: Geomatics Engineering & Geospatial Information Systems

JKUAT

Accomplishments

- School Project : Credit Card Fraud Detection . The machine learning model developed has a 91% accuracy of determining this.
- Kenya Roads Board (KRB) : Road Inventory and Condition Survey of Zonal Roads in Kenya
- Katahira Engineers : Aerial Mapping and Topographical Survey of the proposed Mombasa Gate Bridge

- Kenya Ports Authority : Underground Utility Survey of the Kenya Ports Authority
- Bandwidth Cloud Services : Bathymetric Survey of Lake Tanganyika
- Kenya National Highways Authority : Aerial Mapping and Topo-engineering survey for the MaiMahiu - Mariakani Expressway
- Safaricom: GIS Mapping of infrastructure, utilities and Supply of aerial Imagery covering Nairobi and Mombasa and Upload of the geospatial data onto Ramani Maps (Online web based Platform)

Affiliations

- Institution of Surveyors of Kenya Nairobi, Kenya
Membership : 2017 to Present

Awards

Professor Award: Ramani Geosystems:
Awarded for demonstrating unbeatable record in work attitude and timely delivery of projects.