




# Benard Onyango


Geospatial Engineer

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 <http://benardonyango.com>

A highly-motivated, adaptable and conscientious engineering professional with particular interest in Machine and deep learning, GIS, Web mapping, Remote Sensing, looking to train towards recognized qualifications in the work place. In addition, I am diligent, reliable, quick to learn and keen to take on the daily challenges and rewards of working.

## Skills

- Proficiency in Machine Learning and deep learning algorithms ●●●●● Excellent
- Proficiency in ArcGIS, QGIS, ENVI, ERDAS ●●●●● Excellent
- Proficiency in JavaScript, Python, Django framework, OpenLayers ●●●●● Excellent
- Good knowledge of Geonode, PostgreSQL/POSTGIS, GeoServer ●●●●● Excellent
- Proficient in Linux and Git for code version control ●●●●● Excellent
- Web Application development ●●●●● Excellent

## Work History

### ● RS / GIS Assistant

*Food And Agriculture Organization (FAO), Nairobi, Nairobi*

- Mapping of the agricultural land in Somalia
- Assist in producing scripts for image processing and analysis through Google Earth Engine and other web based geospatial platforms Contribute to the
- development of a SWALIM Geospatial online web portal
- Contribute to the quality checking of spatial datasets produced in water and land theme activities in relation to topology, attribute completeness, field definitions, metadata, projections and related

2019-09 - Current

maps and layout production

- Support the interpretation of very high-resolution satellite images for the detection for charcoal production sites in South Somalia
- Assist in the production of all spatial data as needed, including producing the necessary maps and hosting all the data and information generated by the project
- Assist in satellite images pre-processing and mosaicking in preparation for image interpretation and their regular update
- Carry out remote sensing data interpretation tasks, including supervised image classification, onscreen digitization, extraction of features and generation of tabular information to support SWALIM and other FAO Somalia sectors
- Design and implement data work-flow processes for web applications
- Develop training material and assist in organizing and undertaking GIS and Remote Sensing capacity building

#### **Achievements so far**

- Customized and managing the SWALIM Geospatial online portal (<https://spatial.faoswalim.org/>)
- Set up geonode to enable concurrent editing of data. The pilot was tested both in Nairobi and Somalia. I created a tutorial to assist my colleagues understand this process
- Finished mapping the agricultural mask in bay region Currently
- updating data in the Geonode
- Additionally, I am mapping charcoal production sites in South Somalia
- I am currently using deep learning algorithms and high-resolution satellite images to automatically detect charcoal sites.

2018-03 -  
2019-07

#### **Database Administrator**

*Lunar Arch Limited, Nairobi, Nairobi*

- Assisted in publishing and maintaining layers in GeoServer
- Managed all the data sets in PostGIS
- Created triggers in PostGIS to automatically back up data
- Monitored the database by proactively resolving database issues and maintaining it
- Set up and controlled user profiles and access levels for each database segment to protect important data

2017-12 -  
2018-02

#### **GIS Technician**

*Kenya National Bureau of Statistics (KNBS), Nairobi, Nairobi*

- Geospatial data collection.
- Creating Enumeration Area maps in preparation of 2019 census.

#### **GIS / Remote Sensing Specialist**

*Kenya Agricultural & Livestock Research Org. KALRO, Nairobi, Nairobi*

- Creating a web mapping manual
- Assist in Geoportal creation using Python Creating
- Digital Soil Maps (DSM) using QGIS, R
- Performing crop suitability analysis using QGIS, Python and R

2017-02 -  
2017-08

2016-05 -  
2016-08

## GIS/ Remote Sensing Specialist

*Collaborative Crop Research Program, Kitale, Kitale*

This was a Collaborative Crop Research Program on Small holder farmers in Trans Nzoia County in conjunction with African Maths Initiative.

- Collect farm data from farmers using ODK
- In charge of the project's GIS components
- Train research team members on open source GIS software
- Provide oversight and guidance to ensure creation of high-quality maps for each of the surveyed communities

2015-06 -  
2015-08

## GIS/RS Intern

*Kenya Agricultural & Livestock Research Org. KALRO, Nairobi, Nairobi*

- Trained on the use of Opensource software (QGIS and PostGIS)
- Designing soil geodatabase
- Carrying out crop suitability analysis



## Education

2017-09 -  
2019-09

### Master of Science: Geographic Information Systems (GIS)

*University of Nairobi - Nairobi*

- Thesis title: "Towards Performance Improving Techniques of Web Based GIS: An Empirical Case Study of An NSDI Prototype Portal"
- Recipient of University of Nairobi Scholarship
- Gave back to the University by teaching third year undergraduate students R programming.

2011-09 -  
2016-09

### Bachelor of Science: Geospatial And Space Technology

*University of Nairobi - Nairobi*

- Project Title: Developing A Web Based GIS Application For Residential Real Estate Transactions. Case Study: Nairobi County
- Graduated with Upper Second-Class Honors

2006-01 -  
2009-11

### Secondary Education: Secondary Education

*Maseno School - Kisumu*

Kenya Certificate of Secondary Education



## Accomplishments

- Produced tutorials on GIS, programming, Google Earth Engine, PostGIS and GeoServer on my website and YouTube channel (See Additional Information section for links). These tutorials have been received positively in the online community based on the viewership and comments on the tutorials
- Managed to give back to my University by teaching my Masters classmates on Web Mapping and third year undergraduate students on R programming (Dr. Onchaga and Prof. Karanja in the reference section).
- Collaborated with a group of students during my undergraduate studies to build a web application for reporting crime in Nairobi

County (See Work on GitHub below for the details about the code)



## Affiliations

- Graduate Member, Institution of Surveyors of Kenya (ISK), 2016 to Current



## Additional Information

### Personal Website

link: <http://benardonyango.com>

Description: I share GIS, Web Mapping and Remote Sensing content

### YouTube Channel

link: <http://www.youtube.com/c/BenardRodgersOnyango>

Description: I share GIS, Web Mapping and Remote Sensing content

### Work on GitHub

#### crime mapping

*link:* <https://github.com/benardonyango/crimemapping>

*Description:* A web application built using PostGIS, GeoServer and OpenLayers that enables users to visualize crime data on a map and also report crime by clicking on a map the location of crime and give more details about the crime.

#### Residential real estate web portal

*link:* <https://github.com/benardonyango/Web-Based-GIS-for-Residential-Real-Estate>

*Description:* This is a web portal created using Django python framework. It allows users to sell houses by specifying the location of the house on a map and inputting more details about the house.

Additionally, users can search for a house on sale or rent and make an informed decision based on other information such as levels of crime, nearby amenities which have been provided as layers in the application.

#### Spatial Data Infrastructure

*link:* [https://github.com/benardonyango/custom\\_SDI](https://github.com/benardonyango/custom_SDI)

*Description:* A web portal created using geonode in order to share geospatial data.

#### PDF Tutorial on basics of PostgreSQL/PostGIS, GeoServer and

#### OpenLayers

<https://drive.google.com/drive/u/0/folders/0BwXPSChwrl5NWkl2Yjkxa0htM2M>

#### Websites for my clients

languages used: HTML, CSS, PHP, Bootstrap, JavaScript

*links:*

<http://voshburuburu.org/>

<http://www.freshcutslogistics.com/>

<http://kingdommanifestationministries.org/>



## Languages

● Luo (Mother Tongue)

●●●●●  
Native

● English

●●●●●

● Swahili

●●●●●



## Interests

● Research

● GIS, Web mapping, Scripting

● Guitar, Piano, Violin



## Referees

●  
Dr. Kennedy Were  
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