

# OYELAYO SEYE DANIEL

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## Summary

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I'm an inventive Data Professional with expertise in analytics and success in dealing with large data sets to break down information, generate useful insights, and solve complex business challenges. I have hands-on experience in data wrangling, web scrapping, machine learning and AI. I have a successful track record of recognizing patterns, creating interpretations, and providing commercial solutions. I am a creative and strategic problem solver capable of dealing with complicated challenges, thrives in continual challenges and fast-paced workplaces, with a strong emphasis on collaboration, driving development, and delivering new solutions to meet the needs of customers.

## Skills:

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- Data Analytics
- Data Extraction
- Predictive Modeling
- Object Detection and Recognition
- Recommendation System
- Autonomous AI Agents
- Natural Language Processing

## Technical Skills:

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- Python (Pandas, Numpy, Scikit-learn)
- TensorFlow, Pytorch
- SQL (MySQL, PostgreSQL)
- Data Visualization (Dash, Plotly, Seaborn, Matplotlib)
- Inferential Statistics (ANOVA, Chi-Square, T-tests)
- Descriptive Statistics
- Computer Vision (OpenCV (CV2))
- Artificial Neural Networks (Convolutional Neural Network, Multilayer Perceptron)
- RAG (Retrieval-Augmented Generation) for AI Assistants
- Deep Learning for Computer Vision (YOLO)
- LangChain, LangGraph and SmolAgent for AI Agents

## Projects:

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### Project 1: Crop Recommendation System

- **Problem Statement:** Developed a system to optimize crop selection based on soil (N, P, K, pH) and environmental factors (temperature).
- **Modeling Approach** Preprocessed data to handle inconsistencies, selected soil and climate features, and trained a machine learning model (e.g., Random Forest) with cross-validation, achieving 99% accuracy.
- **Outcomes:** Delivered actionable crop recommendations, enhancing yield, resource efficiency, and farmer profitability.
- **Project Link:** [Crop Recommendation System](#)

### Project 2: Bean Disease Classifier

- **Problem Statement:** Based on a leaf image, the goal is to use deep learning to predict the disease type (Angular Leaf Spot and Bean Rust), if any.
- **Modeling Approach:** Cleaned and preprocessed the images, encoding, resizing and employed convolutional layers for feature extraction, pooling layers for dimensionality reduction, and fully connected layers for classification. Streamlit was used as the deployment platform for the model

- Outcomes: The model successfully differentiated various bean diseases from healthy plants based on their leaf characteristics, providing a confidential confidence level for each classification

- **Project Link:** [Crop Monitoring System](#)

### **Project 3: Scalable Malaria Diagnosis with Deep Learning**

- Problem Statement: Developed a machine learning model to detect and classify malaria parasites in blood slide images, focusing on the trophozoite stage and distinguishing infected from uninfected cells.

- Modeling Approach: Participated in the Lucana Malaria Hackathon, leveraging Python and YOLOv8n for data preprocessing, EDA, and multiclass object detection.

- Outcomes: Achieved a precision of 80% and a recall of 84%, demonstrating potential for scalable malaria diagnostics in resource-limited settings, enabling efficient large-scale screening and early intervention.

### **Project 4: Climate Risk Challenge**

- Problem Statement: Climate change threatens rice production in Kebbi State, Northern Nigeria, risking the agricultural sector, food security, and livelihoods. Droughts, floods, and encroaching desertification damage rice plantations, while limited access to weather information hampers farmers' ability to adapt. Solving this problem would ensure resilient rice production, safeguarding food security, livelihoods, and Nigeria's economy. The gap lies in insufficient measures and resources to address climate change challenges, requiring improved infrastructure, reliable weather information, and effective communication channels for farmers to adapt and mitigate risks.

- Modeling Approach: Developed a flood/drought classification model (using historical precipitation, temperature, and soil moisture data) that achieved 85% accuracy in predicting extreme weather events. This enabled proactive risk mitigation for Kebbi State farmers.

- Integrated geospatial analysis to map high-risk zones for floods and desertification, identifying vulnerable regions like Argungu and Birnin Kebbi.

### **Work Experience:**

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#### **Prognose.ai**

- Data Scientist (Mar 2022 - Present)

- Specialized in deep learning and computer vision, contributing to advanced neural network models and data analysis.

#### **natnudO Foods**

- Food Safety Analyst (Dec 2021 - Mar 2022)

- Utilized data analysis to enhance quality control and risk assessment.

### **Qualifications:**

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#### **- University of Ibadan**

- Degree: Agriculture Biochemistry and Nutrition

- Location: Ibadan, Nigeria

#### **- Udacity**

- Nanodegree: Data Analysis

- Location: California, United States

#### **- Onecampus Academy**

- Nanodegree: Data Science

- Location: Ohio, United States

#### **- AI Saturday Lagos**

- Nanodegree: Data Science/Machine Learning

- Location: Lagos, Nigeria

#### **-Data Camp**

- Nanodegree: Data Science

- Location: 350 Fifth Avenue, Suite # 7730, New York, NY 10118