Mugai Victor

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EDUCATION AND HONORS

Mount Kenya university
Bachelor's Degree in Computer Science 2023-TODATE

- Relevant Coursework: Machine Learning, Data Science Statistics, Data structures , Probability ,Algorithms,Calculus, Electricity and optics,Software Engineering,Database Management & Discrete Mathematics

PROFESSIONAL EXPERIENCE

Data Science & Machine Learning 2022-TODATE

- Motivated and detail-oriented Computer Science student with a strong foundation in Python, data analysis, and machine learning for 2 years .
- Passionate about problem-solving and eager to apply theoretical knowledge to real-world projects. Seeking an opportunity to contribute to innovative technology solutions

SKILLS

- Programming Languages: Python, Java, C, Kotlin,MySql ,Dart,JavaScript, HTML, CSS, PHP
- Data & Machine Learning: Scikit-learn, Numpy, Pandas, Matplotlib, Tensorflow&keras, PyTorch,
- Data Science & Miscellaneous Technologies: Data science pipeline (cleansing, wrangling, visualization, modeling, interpretation), Statistics, Hypothesis testing, AI tools, OOP,IOT, Fast Api, APIs, Excel, Git

PROJECTS

Health ON April 2024

Brain Tumor Classification System

- Developed a convolutional neural network (CNN) to classify brain tumors from MRI scans.
- Collected and preprocessed a dataset of medical images using OpenCV and NumPy.
- Trained the model using TensorFlow/Keras with 85%+ accuracy on test images.
- Deployed the model using FastAPI and hosted it on AWS/GCP for accessibility for doctors to upload MRI scans and get real-time predictions.

Security ON January 2025

Intrusion Detection System

- Developed a real-time security surveillance system using YOLOv8 for detecting unauthorized intrusions.
- Trained the YOLO model on a custom dataset of human faces.
- Integrated a Raspberry Pi camera for continuous monitoring in sensitive areas.
- Built a FastAPI server to process images/video frames and trigger alerts upon detecting intrusions.
- Stored detected intrusions in a MySQL database and sent real-time alerts via SMS (GSM module) and email.
- Deployed the system on an edge device for low-latency processing and enhanced security.

Transport ON March 2024

Parking Space Detection System

- Developed a YOLO-based object detection model to identify vehicles in parking lots.
- Trained and fine-tuned YOLO on a custom dataset containing images of empty and occupied parking slots.
- Integrated the model with OpenCV to preprocess input images and define regions of interest (ROIs) for individual parking spots(Empty/Occupied).
- Implemented a FastAPI server to deploy the YOLO model and provide real-time parking status updates.

Finance ON June 2023

Nairobi Rent Prices Prediction System

- Developed a predictive model to estimate rental prices based on neighborhood, property type, size, and amenities.
- Collected and cleaned real estate data from Kaggle dataset .
- Engineered features such as no of bedrooms, location and demand trends.
- Trained a Linear Regression and XGBoost model, achieving high accuracy in rent predictions.
- Built a FastAPI backend with a React-based web interface where users input property details and get real-time price estimates.
- Deployed the system for public access .