Mudatinya Charles– ALX Data Science Portfolio

About Me

I am a Data Science student at ALX, passionate about leveraging technology for agricultural advancements. I focus on implementing smart solutions like aeroponics and greenhouse management software to optimize farming. My expertise spans data analysis, machine learning, and software development.

**Projects**

1. Smart Weather Dashboard (Capstone Project)

Description: A real-time dashboard for monitoring and predicting weather conditions, specifically tailored for greenhouse farming.

Technologies: Python, Flask, Pandas, ofOpenWeather API, Power BI

Skills Applied: Data Visualization, API Integration, Time-Series Forecasting

2. Exploratory Data Analysis (EDA) on Agricultural Yield

Description: Analyzed crop yield data to identify factors affecting production and proposed data-driven solutions.

Technologies: Python (Pandas, Matplotlib, Seaborn), Jupyter Notebook

Skills Applied: Data Cleaning, Visualization, Hypothesis Testing

3. Machine Learning Model for Crop Disease Detection

Description: Built a classification model using image processing techniques to detect plant diseases.

Technologies: TensorFlow, OpenCV, CNNs

Skills Applied: Deep Learning, Image Processing, Model Evaluation

4. Predictive Analytics for Market Price Fluctuations

Description: Developed a predictive model to forecast agricultural commodity prices based on historical trends.

Technologies: Python (Scikit-Learn), Time-Series Forecasting, Power BI

Skills Applied: Regression Analysis, Feature Engineering, Data Interpretation

## Technical Skills

✔ Data Analysis (Python, SQL, Excel, Pandas)
✔ Machine Learning (Scikit-Learn, TensorFlow, Keras)
✔ Data Visualization (Matplotlib, Seaborn, Power BI)
✔ Web Development (Flask, Django)
✔ Cloud Computing (AWS, GCP, Azure)

## Certifications & Achievements

ALX Data Science Certification (In Progress)

Implemented Aeroponic Technology in Greenhouses

Built a Greenhouse Management Software

Next Steps

I am looking forward to expanding my expertise in AI-driven agricultural solutions, data-driven decision-making, and automation in farming.