Predictive Analysis on Crop Yield

Objectives

- **Enhancing farmers' decision-making with accurate crop yield forecasts using LSTM and interactive guidance.**

Technologies

- **LSTM**
- **LangChain & OpenAI's GPT models**
- **ReactJS for frontend development**
- **Flask APIs**

Workflow

- o **Train LSTM based forecasting model on a crop yield history [dataset](#)**
- o **Predict the crop yield for the next year for the selected crop type in the selected location**
- o **Pass the yield history and prediction to LLM via LangChain to get actionable insights**

Workflow Continued …

o **Develop frontend using ReactJS**

o **Integrate Google Maps API at the frontend**

o **Develop a chat interface**

o **Create Flask APIs to bridge frontend and backend functionalities.**

User Interface
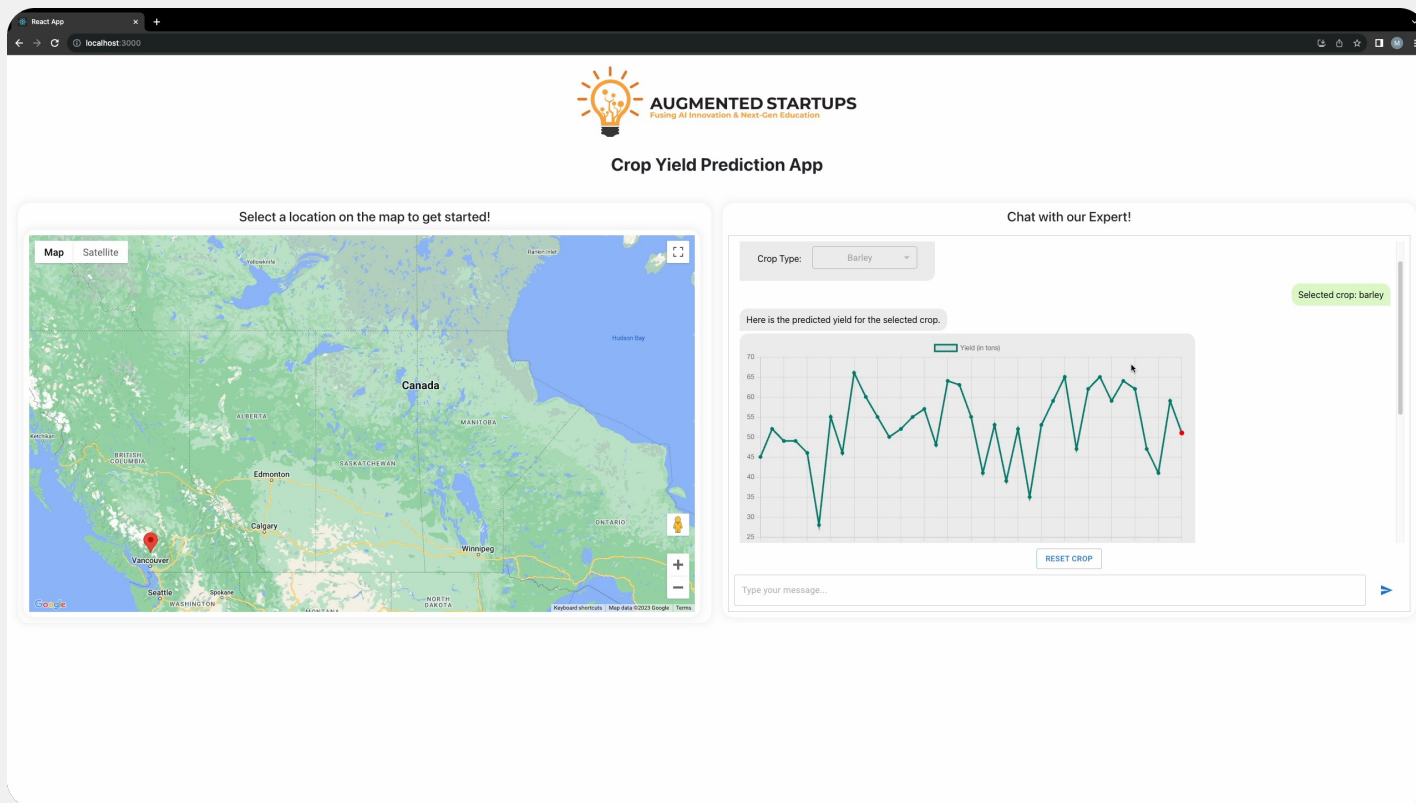
Benefits to Farmers

o **Farmers can rely on precise yield forecasts, minimizing guesswork.**

o **Helps in understanding and preparing for bad yield years, protecting against severe financial fallout.**

o **Efficient use of resources (seeds, water, fertilizers) based on targeted insights, reducing waste and expenditure.**

Future Steps

- Improvements in data, model, or user interaction.

- Possibilities of scaling to new regions, crops, or functionalities.

- Update LLM's data for richer and more precise soil insights.

Thank you & Welcome