Weather Prediction Model

AI IN AGRICULTURE

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Aim of the Lecture

The objective of the lecture is to learn how to create a weather prediction model, an activity scheduling system that leverages both the **OpenWeather API** and the **EmbedChain** LLM framework. This system aims to assist farmers in optimizing their activity schedules based on local weather information.

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Goal

At the end of the lecture, you will;

- Understand how to use EmbedChain LLM framework
- Learn the OpenWeatherMap API
- Understand the projects workflow
- Be able to develop activity scheduling system that assist farmers in optimizing their activity schedules.

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Introduction

The weather prediction model (activity scheduling system) leverages both the **OpenWeather API** and the **EmbedChain** LLM framework to assist farmers in optimizing their activity schedules based on the local weather information.

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Tech Stacks

- EmbedChain LLM framework
- OpenWeatherMap API
- Streamlit

Libraries

- GeoPy
- Request

GeoPy

Geopy makes it easy to locate the coordinate of addresses, cities, countries and landmarks using the third-party geocoders and other data sources.

The current location of the user is sent as input to the GeoPy API and as a response returns the coordinate **(latitude & longitude)** of the address. This is then passed to the OpenWeatherMap API.

OpenWeatherMap

OpenWeather provides historical, current and forecasted weather data via light-speed APIs.

The coordinates returned by the **GeoPy API** is fed to the **OpenWeather API** which in turn returns the current weather data as well as the forecast up to **5 days**.

Embedchain

EmbedChain is a framework to easily create LLM powered bots over any dataset. it abstracts the entire process of loading dataset, chunking it, creating embeddings and storing it in a vector database.

The users activity and the weather data are fed to the LLM which then uses the information provided to **optimize** the farmers schedules as well make **recommendations**. It also provides a chat interface which allows the farmer to interact with the data.

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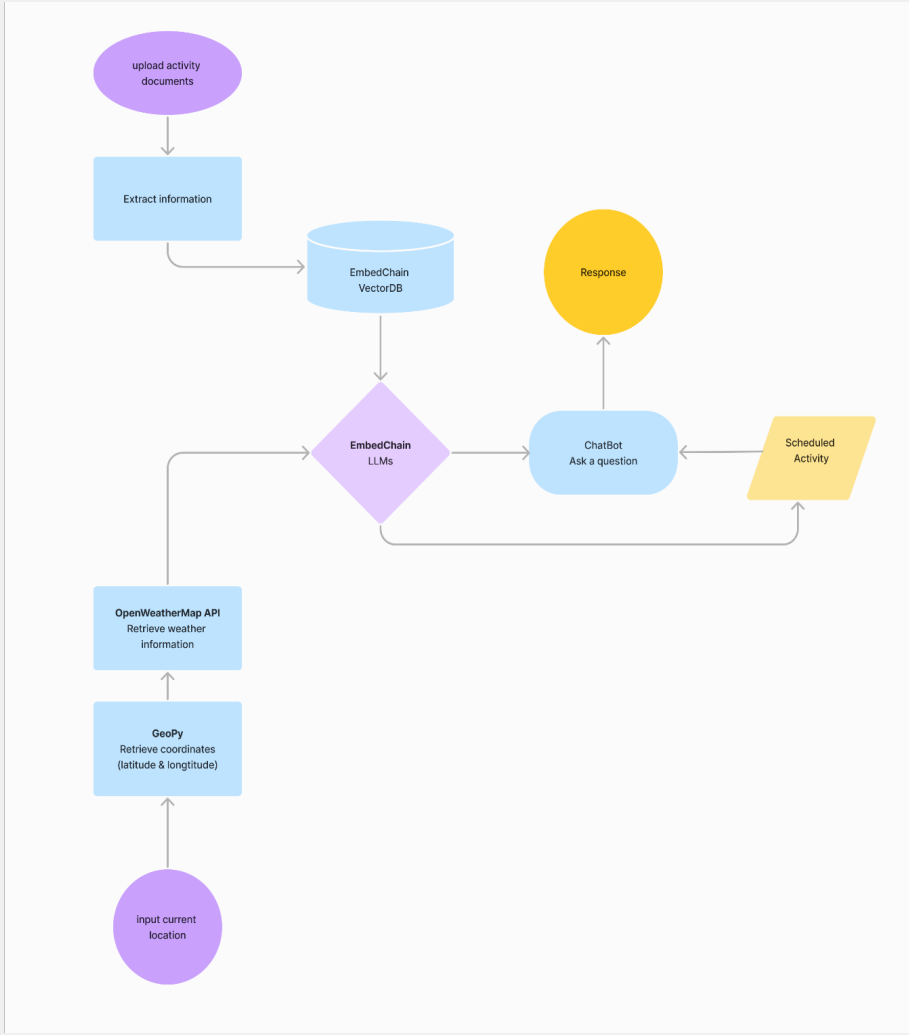
Project Workflow



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Application

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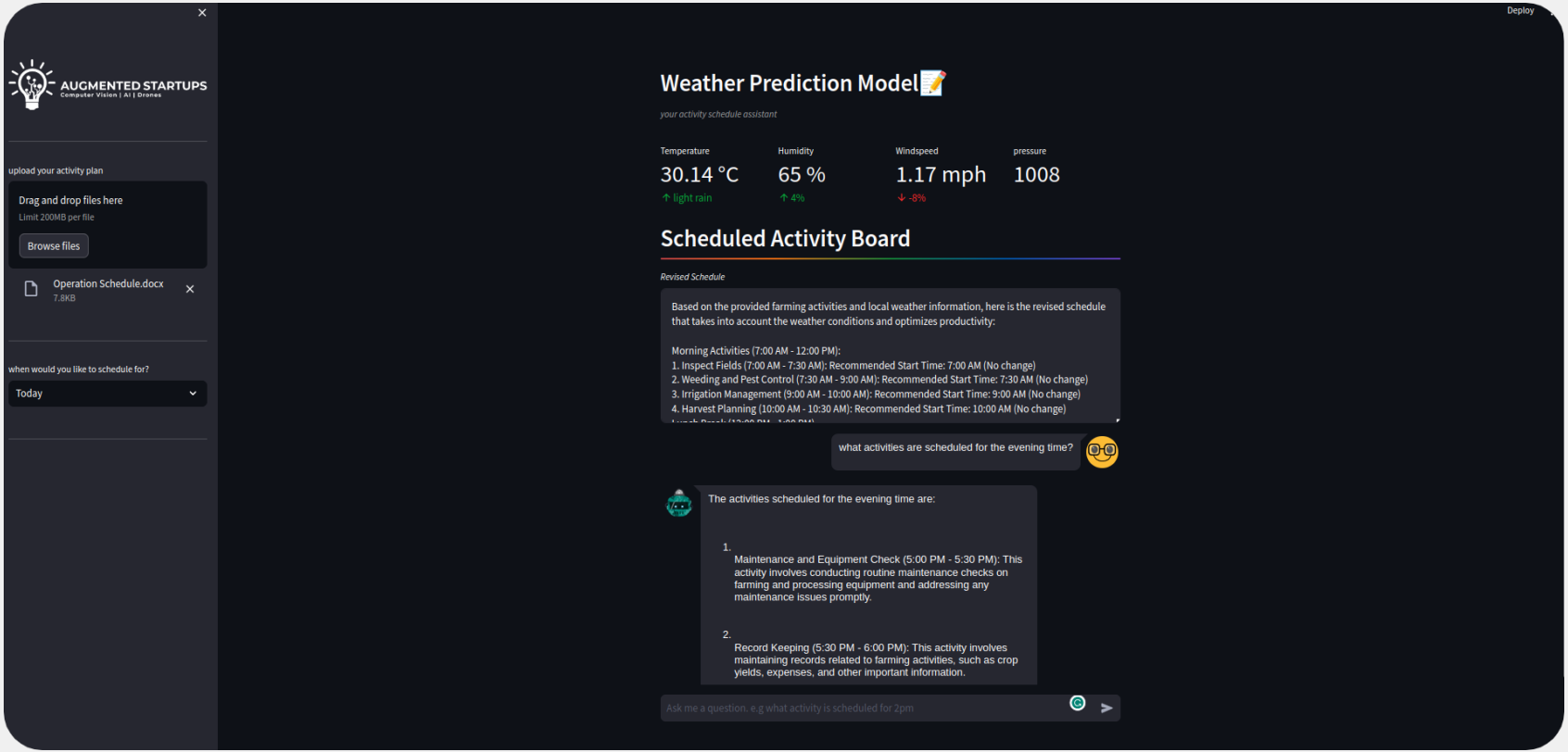

THANK YOU!

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