FIELD YIELD FORECASTING MODEL DEVELOPMENT PROCESS

R&D Overview

Introduction

- Objective:
  - To provide an overview of the development process for our field yield forecasting model.
  - To highlight key steps and methodologies used.

Data Collection

- Field Boundaries: Utilize field boundaries available in the dashboard.
- Dates: Provided by user with field boundaries (optional) or estimated based on season.
- Crop type and irrigation: Provided by user (optional)

Metrics Calculation

- Calculate relevant indices from satellite images.
- Time frame: From start date to current date.
- Indices: NDVI (Normalized Difference Vegetation Index) and others.

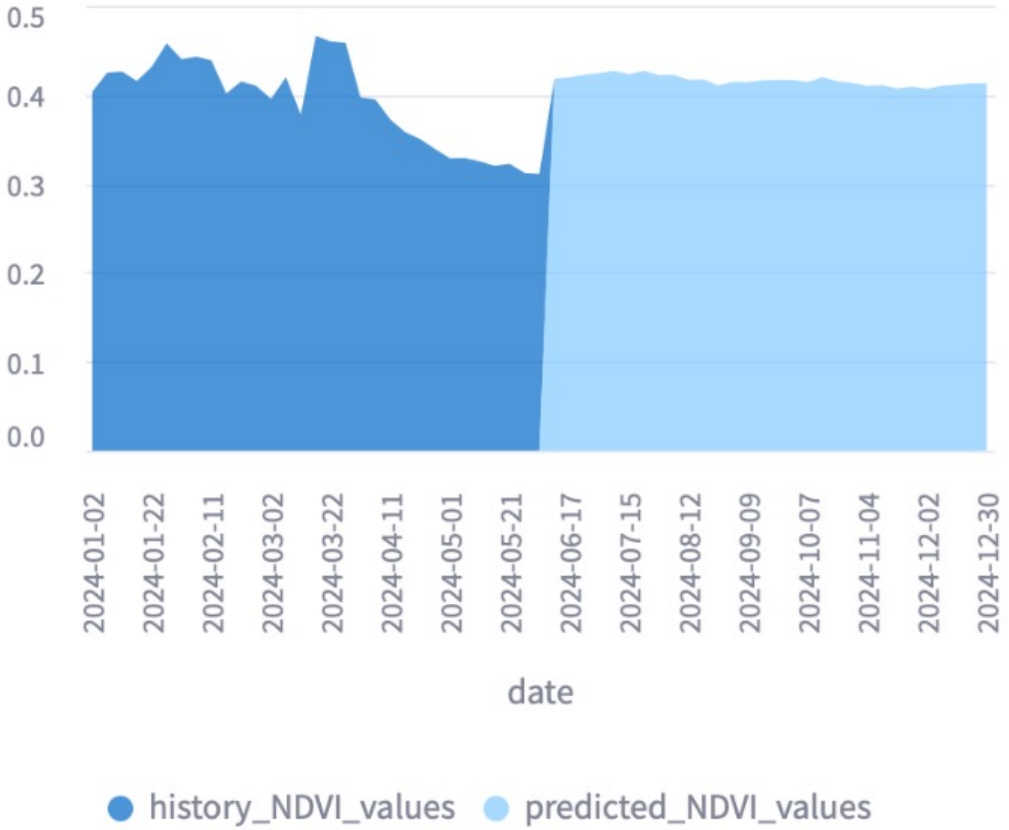
Time Series Forecasting

- Use TimesFM for time series forecasting.
- Forecast NDVI values up to the end of the season.

Data Integration, Optimal NDVI, and Recommendations

- Integration of Additional Data: Combine crop type, irrigation, growing dates, and location with NDVI forecasts.
- Pinpointing Optimal NDVI: Reference literature for optimal NDVI values by crop type, stage, and location.
- Generating Recommendations: Use ChatGPT to provide accessible recommendations for farmers.

Predictions:



Recommendation:

The provided NDVI (Normalized Difference Vegetation Index) values over the next 30 weeks range from approximately 0.407 to 0.427. For wheat growth, NDVI values typically should range between 0.2

Next Steps

FINE-TUNE MODEL PARAMETERS FOR ACCURACY

IMPLEMENT CACHING FOR FASTER DATA RETRIEVAL AND PROCESSING.

DEVELOP AN API FOR INTEGRATION AND ONBOARDING.