VinaFarm

Comprehensive Market Insights for Farmers

Table of contents

01
Team Introduction

02
Challenges

03
Solution Overview

04
Key Features

05
Demo

06
Future Development

01

Team Introduction

Vinabata

An Cao
Front-end developer

Nhan Chau
Machine learning model developer

Minh Khanh Pham
Back-end developer

02

Challenges

Challenge A: Developing a General Market Overview for Agriculture

---

- Fluctuations in the prices of inputs (fertilizers, seeds) and outputs (grains, meat) make planning difficult.

- Farmers often lack direct access to real-time global market data, relying on intermediaries.

- Rising costs of production inputs impact profitability.

03

Solution Overview

VinaFarm

An innovative platform designed to empower farmers with real-time market insights and predictive analytics.

By integrating a chatbot, personalized newsletters, and an intuitive dashboard, VinaFarm provides actionable data on global input and output prices, helping farmers make informed decisions and navigate market challenges.

Target user: Farmers

04

Key Features

Key Features

Analytics

Intuitive, real-time analytics for price trends and forecasts.

Chatbot

Answer queries and suggest market trends.

Newsletter

Regular updates on global agricultural markets.

Analytics

Price Trends Visualization

- Interactive line charts or area graphs showing price trends for various agricultural inputs (fertilizers, seeds, fuel, pesticides) and outputs (grains, specialty crops, meat)
- Allow users to select specific commodities and time ranges for detailed analysis.

Global Market Overview

- World map highlighting price variations across different regions for selected commodities.
- Heat maps to quickly identify price hotspots or areas of concern.

Newsletter

User can sign up for newsletter using their email.
Each week, they will receive a newsletter automatically sent from VinaFarm.

Section 1: This Week's Top Trends

- Input prices: [Current Price] (+/- % from last week)
- Output prices: [Current Price] (+/- % from last week)

Section 2: Your Local Agriculture News

- [Highlight key developments in the region, e.g., "New subsidies announced for organic farming in Europe."]
- Include a short weather forecast for farming regions: *"Expect heavy rainfall in Northern Finland this week."*

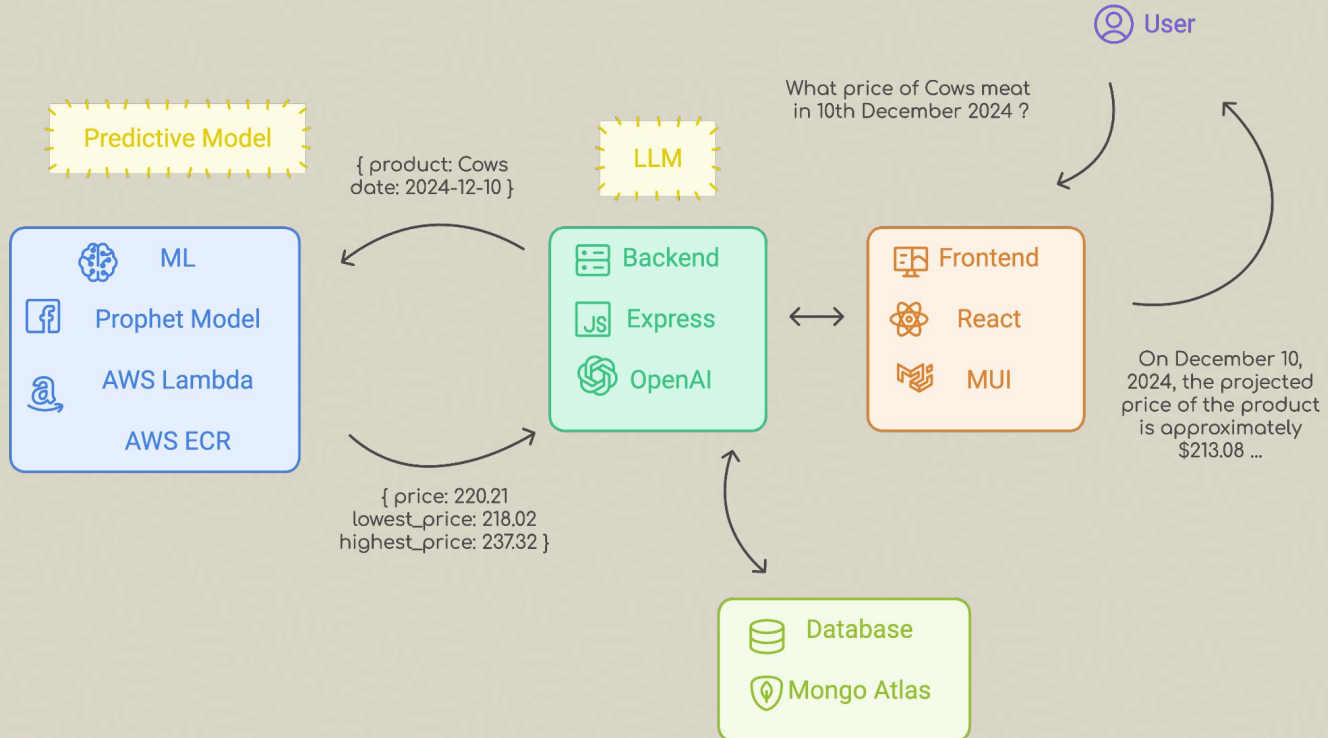**Section 3: Forecast and Analysis**

- Short-term prediction: *"Fertilizer prices are expected to drop by 2% due to increased global supply."*
- Long-term outlook: *"Demand for wheat remains high, stabilizing prices over the next quarter."*

Section 4: Expert Tips & Recommendations

- *"Switch to water-efficient irrigation techniques to combat dry conditions this season."*
- Link to a detailed blog post or guide: *"Read more on sustainable farming practices [here]."*

Chatbot

VinaFarm ChatBot

User

Predictive Model

{ product: Cows
date: 2024-12-10 }

LLM

What price of Cows meat
in 10th December 2024 ?

ML
Prophet Model
AWS Lambda
AWS ECR

Backend
Express
OpenAI

Frontend
React
MUI

{ price: 220.21
lowest_price: 218.02
highest_price: 237.32 }

On December 10,
2024, the projected
price of the product
is approximately
$213.08 ...

Database
Mongo Atlas

05

Demo

06
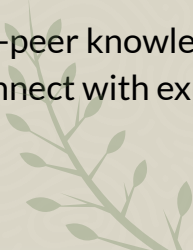# Future Development

Future Development

1. Expanded Data Sources

- Integrate additional APIs for broader market coverage (e.g., regional price indices, weather patterns).
- Add real-time updates from emerging markets and niche crops.

2. Customizable Dashboards

- Allow users to personalize the dashboard based on specific crops, regions, or metrics.
- Enable integration with IoT devices for real-time farm monitoring.

3. Community Features

- Build a farmer network for peer-to-peer knowledge sharing and collaboration.
- Add forums or Q&A features to connect with experts and other users.

Thanks!