FARM FUSION!

THAPAR UNIVERSITY

COMPUTER SCIENCE AND ENGINEERING DEPARTMENT

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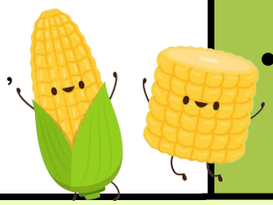
Tech Stack:
HTML, CSS, JS, React Js , Express JS, Node JS, CNN, Flask, Mongo DB



Problem Statement

To develop a machine learning based ecommerce system for classifying crop quality and price prediction along with hardware based soil assessment system

Objectives

- Crop quality classification and price prediction
- Soil quality monitoring kit
- Crop and fertilizer recommendations
- Ecommerce Integration

Applications

- Agricultural sustainability
- Fair price trading
- Optimal resource utilization
- Technological shift in agricultural sector
- Data driven results

Challenges

- Collection of datasets
- User technology adoption
- Algorithmic Complexities
- Market Integration

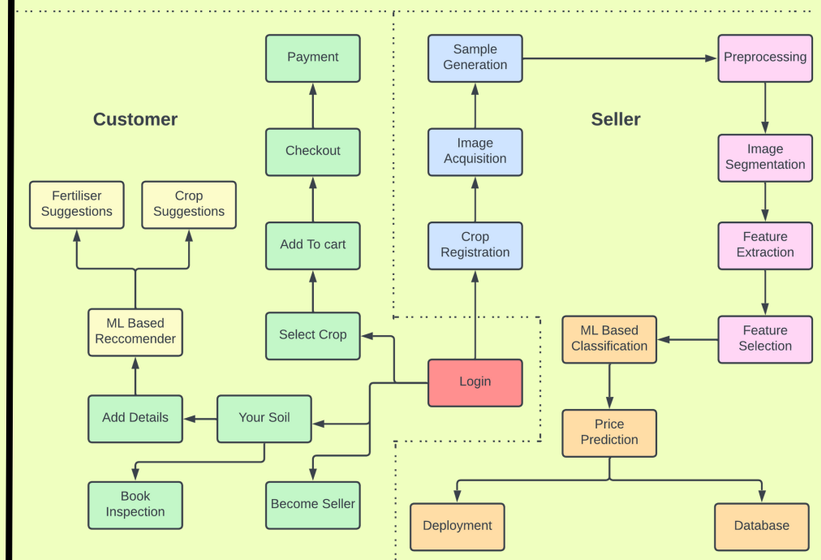
ML Predictions & Ecommerce Integration

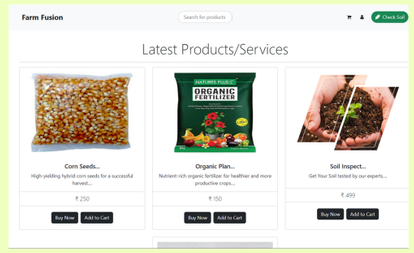
- Crop Quality Preditions
- Crop Price Predictions
- Crop Recommendations
- Fertilizer Recommendations
- Seller Inventory Creation
- Image Acquisition, Image Segmentation and Feature Extraction.
- E-commerce Feature set

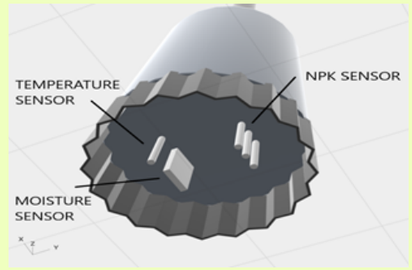
Future Research Plans

- Expand Crop and Soil Variety
- User-Centric Enhancements
- Blockchain integration for Market Transparency
- Collaborative Research Initiatives

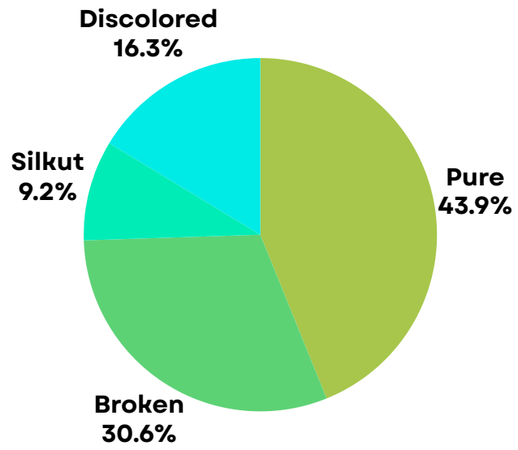
Project Design



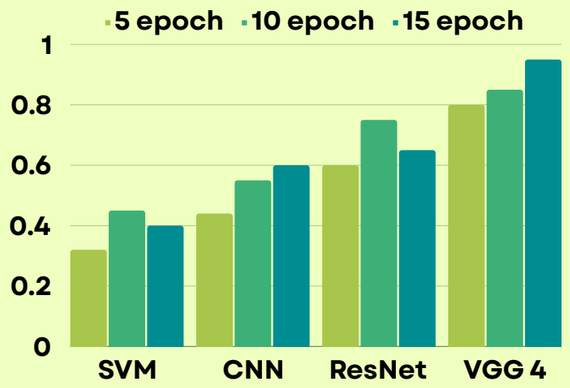




Seed Types in Dataset



Crop Quality



Model Accuracy

Crop Quality Preditions - 90.82%
Crop Price Predictions - 92%
Crop Recommendations - 94%
Fertilizer Recommendation- 88%

Conclusion

Farm Fusion merges technology and farming, empowering farmers with data-driven decisions, and transparent market systems