INTELLICART

(AI Enabled Smart Cart)

NATIONAL UNIVERSITY of Computer & Emerging Sciences

FYP SUPERVISOR

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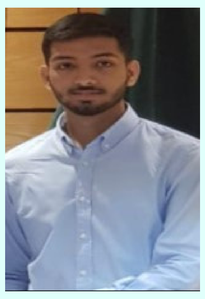
GROUP MEMBERS



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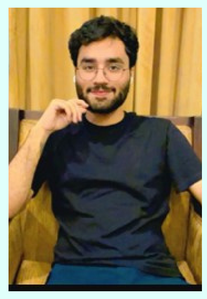

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INTRODUCTION

Introducing the "IntelliCART aka Smart Cart" project, a groundbreaking innovation in the world of fresh produce shopping. With a focus on transparency, trust, and health, this project aims to transform the way consumers interact with fruits and vegetables, ensuring a seamless and informed buying experience. This project redefines the fresh produce market by offering a mobile app that provides real-time freshness evaluations, validated pricing information, and convenient cart location services. By prioritizing transparency and consumer well-being, it seeks to revolutionize the purchase and consumption of fruits and vegetables, creating an experience that is both fair and knowledgeable.

OBJECTIVE

Objective	Approach for achieving the objective
Develop a Robust Freshness Assessment Algorithm	Use computer vision to find features like colors, textures, and any signs of damage.
Integrate Cloud technology, Deep Learning and ML Algorithms	Implement cloud technology for efficient image processing; deploy deep learning and ML models for real-time freshness assessment.
Incorporate Government-Induced Price Validation	Develop feature to match displayed prices against government-regulated price data, guaranteeing transparency
Implement GPS-Based Location Services	Integrate GPS functionality into the app for identifying nearby fruit carts for each customer
Create an Mobile Application	Design a user-friendly mobile app with real-time freshness information and all above mentioned features.
Evaluate System Performance and User Satisfaction	Conduct testing to assess freshness, price validation , GPS accuracy, and take user feedback.

PROPOSED SCENARIO

The proposed mission tackles critical challenges in the modern fresh produce market. Consumers often face uncertainty about the quality and pricing of fruits and vegetables from mobile carts due to limited transparency. Our system uses computer vision to provide objective assessments, considering factors like color, texture, and spoilage. Government-imposed pricing ensures fair practices. The mobile app offers real-time data on freshness and pricing, complemented by GPS guidance to nearby fruit carts. Cloud-native deep learning and machine learning algorithms enable real- time image analysis, making our system one of the most advanced and user-friendly solutions, benefiting both consumers and vendors.

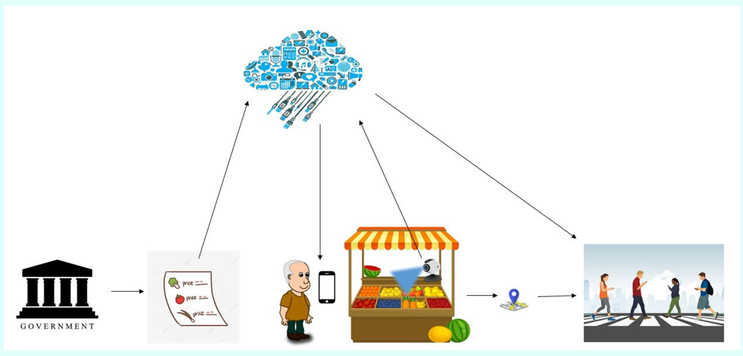
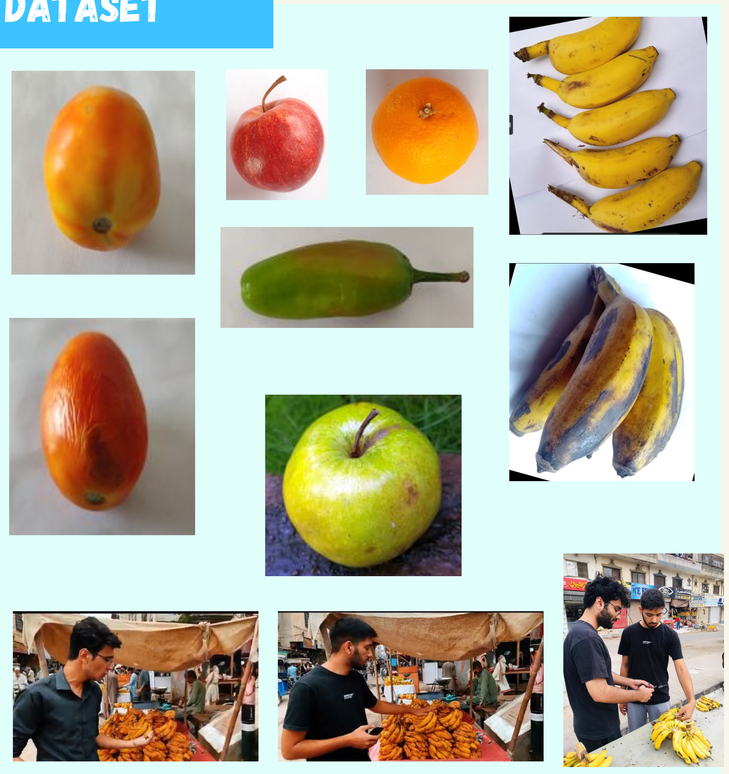


Figure 01: Proposed Scenario

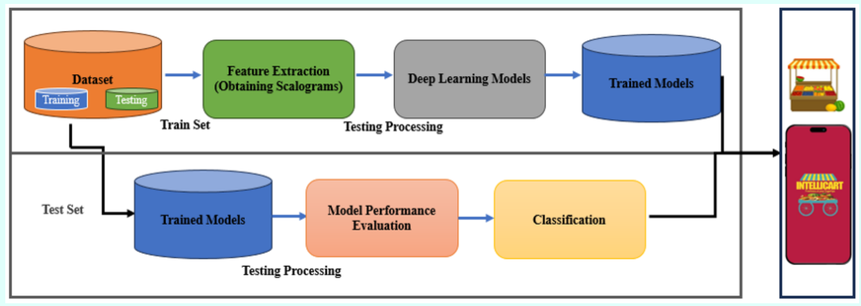
DATASET



CLASSES IN DATASET

FRUITS	CLASSES
Banana	Firm
	Slightly Bruised
	Heavily Bruised
Apple	Blotch
	Healthy
	Rotten
	Scab
Oranges	Greening
	Healthy
	Damages
Tomatoes	Old
	Ripe
	Unripe
Green Chili	Died
	Old
	Ripe
	Unripe

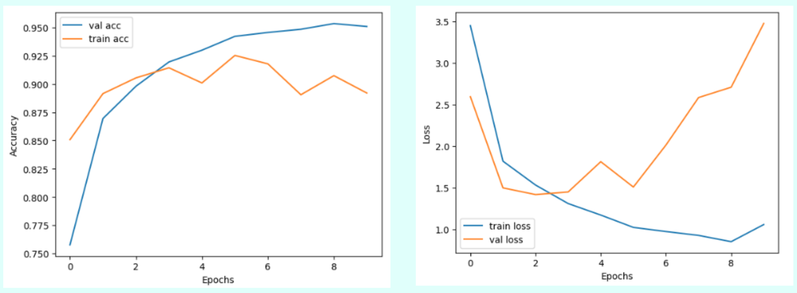
METHODOLOGY



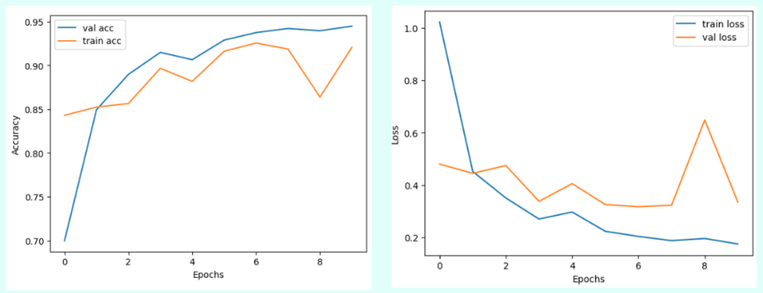
CONCLUSION

Our proposed solution is an important step towards addressing demand for fresh and healthy food with the authenticity of prices. Our solution involves modern cutting edge technologies that includes computer vision, cloud, application development, and (GPS) to provide customer with freshness and price validation transparency. All above mentioned technologies merging in single platform will result in customer vendor strong relationship build on trust and fair market competition among vendors.

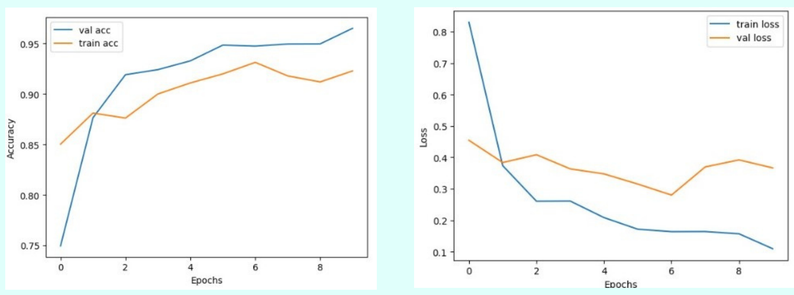
RESULT



Graph 01: Inception V3



Graph 02: VGG 19



Graph 02: VGG 16