Freshness Inspection at FreshHarvest using CNN

FreshHarvest Logistics is a mid-sized company specializing in the warehousing and distribution of fresh fruits and vegetables across California. They supply fresh produce to supermarkets and local farmers' markets, striving to deliver high-quality goods to their customers.

They supply 8 kinds of fruits/vegetables:

- Banana
- Lemon
- Lulo
- Mango
- Orange
- Strawberry
- Tamarillo
- Tomato

In recent months, FreshHarvest Logistics has faced several operational issues due to **inconsistent manual quality inspections**. Key issues include:

1. **Operational Inefficiency:** Manual inspections are prone to human errors, due to inconsistent lighting and worker fatigue.
2. **Business Losses:** Refund requests and a declining brand reputation have resulted in financial and operational setbacks.
3. **Customer Complaints:** Retailers report receiving spoiled or overripe fruits like strawberries, tomatoes, and mangoes.

Proposed Solution

The company plans to leverage AI to address this problem by automating the freshness inspection process.

Specifically, the company wants a system where an AI-powered system is integrated into the warehouse's conveyor belt infrastructure. The proposed system will include high-speed cameras positioned to capture images of fruit crates as they move along the conveyor belt.

Leveraging a deep learning model for real-time classification, the system will accurately classify fruits as either **fresh** or **spoiled.**