Intelligent Retail Inventory Management System

A Computer Vision Solution for Modern Retail

Retail Inventory Challenges

- Manual counting processes are labor-intensive and error-prone
- Stockouts cause 4-8% revenue loss
- Overstocking ties up capital and produces waste
- Misplaced products frustrate customers and staff

Retail industry loses billions annually due to inventory mismanagement.

Computer Vision-Powered Inventory Management

- Continuous monitoring with strategically placed cameras
- Automated detection of products and empty spaces
- Real-time alerts for low stock and planogram violations
- Analytics dashboard provides actionable insights
- Easy integration with existing inventory systems

How It Works

Image Capture

Stores photograph shelves regularly

Object Detection

YOLOv5 identifies products at 97% accuracy

Product Classification

CNN architecture recognizes specific items

Occupancy Analysis

Detects empty spaces and misplacements

Alert Generation

Notifies staff for action

Data Visualization

Dashboard displays live inventory status

Key Benefits

65%

Labor Reduction

Manual counting labor cut significantly

80%

Stockout Decrease

Major drop in stockout incidents

15-20%

Holding Cost Savings

Reduced inventory costs

3-5%

Sales Increase

From improved availability

Enhanced customer experience and better merchandising decisions.

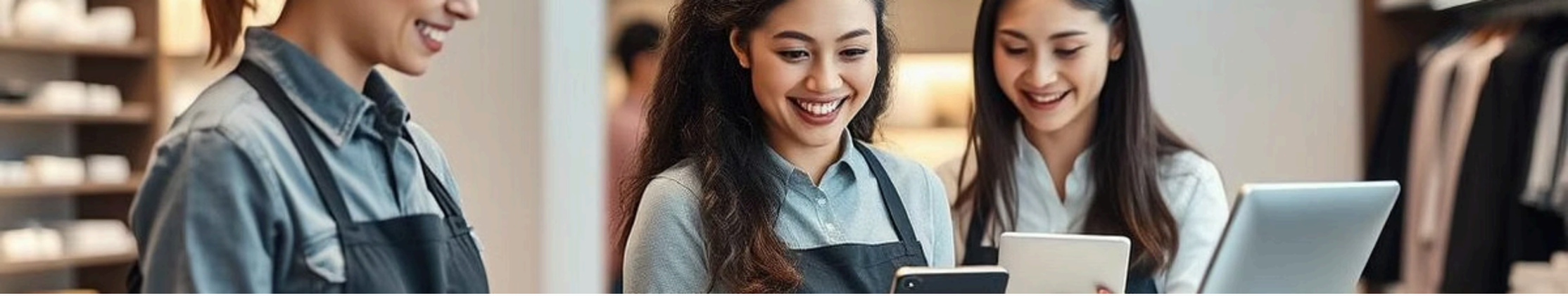
Implementation & ROI

Requirements

- Camera infrastructure
- Edge computing devices
- Cloud infrastructure
- System integration

Expected ROI

- 15-20% reduction in holding costs
- 3-5% sales growth
- 60-70% inventory management cost drop
- Payback period: 12-18 months



Transform Your Retail Operations

1

Continuous Inventory Awareness

Replaces periodic manual checks

2

Automated Detection

Prevents sales impact from inventory issues

3

Staff Redeployment

Focus on customer service over counting

4

Competitive Advantage

Drive operational excellence

Next Steps: Store assessment, custom plan, pilot, full deployment