CASE STUDY BY

ASSERT AI

AI- BASED PACKET COUNTING & LINE DETECTION FOR PORTS & LOGISTICS COMPANY

Assert AI

assertai.com

CLIENT: INDIA'S LARGEST INTEGRATED PORTS & LOGISTIC COMPANY
INDUSTRY: WAREHOUSING

OVERVIEW

The goal of AI-based packet counting at line detection is to count the number of packet instances in a single image or video sequence. The packets can be in form of sacks or corrugated boxes of different shape & size. This model detects and count objects by drawing bounded boxes around the detected objects in high-resolution video. The machine learning models are trained to recognize packets of specific shape & size in video images. The trained systems reliably detect, distinguish, track & count. This automates inbound & outbound receiving thus improving traceability & making the process more accurate.

Packet counting in logistic companies is a critical & complex task when done through conventional methods. From loss of packages to theft or counting errors, mishandling packages to breakage, there are specific challenges to the process.

KEY CHALLENGES

- Loss of packages & theft prevention during inbound receives
- Inconsistent package tracking
- Prone to human error due to bulk of received packages
- Time consuming when done manually

The client is India's largest integrated ports & logistic company, facing challenge during its inbound receives. 3 trains with 48 bogies each arrives at client's port daily, containing 1200 bags each that totals to 1,72,800 bags arriving in a day. Cost of each bag is Rs.500, that brings the total cost of bags transported in a day to 8.6 Cr. But only 98% bags are actually delivered and 2% is either lost or stolen and remains untracked. This ultimately leads to a loss of 63cr per annum.

SOLUTION

- AssertAI developed an AI/ML-based condition monitoring system
- Custom trained AI models to detect specific objects as per type, shape & size
- Counting focused on specific areas within the cameras stream
- Reliable tracking, detecting & counting of bags received
- Quick, real-time detection & counting
- Automated user interface for displaying counting results
- Successful management of counting process without human intervention

RESULTS ACHIEVED

- AssertAI's packet counting at line detection model was able to prevent loss by 1.5% by providing 99.5% accuracy after implementation.
- With 1.5% increase in accuracy approx. 77,760 bags were saved from loss per month which is valued at 3.9 Cr, increasing productivity through automated tracking system.
- This streamlined the overall inventory management by preventing loss of approx. 9,46,080 bags per annum which values at 47cr per annum.
- The automated systems enhanced security, reduced errors & streamlined controls.

THE CLIENT LEVERAGED ASSERTAI'S CUSTOM-MADE AI-BASED SYSTEM TO DETECT AND COUNT PACKETS FOR INBOUND GOODS TO REDUCE THE LOSS OR THEFT.