

SUCCESS STORY



OPTIMIZING PERFORMANCE: EXTRACTING VALUE FROM IN-STORE CCTV CAMERA FEEDS WITH VIDEO ANALYTICS FOR SPORTS GOODS RETAILER

PROJECT OVERVIEW

This project involves building a cognitive analytics model using security cameras in a store. The model generates store heat-maps and visualizations to indicate where customers spend the most time. It also analyzes footfall variations by different areas of the store and time of day. Additionally, the model identifies returning customers through facial recognition and tracks the number of customers who leave the store without making a purchase.

SOLUTION DELIVERED

Advanced Analytics

CLIENT DOMAIN

Sports Goods Retailer

KEY HIGHLIGHTS

- More than 80% accuracy achieved in customer behavior models.
- Nearly 15% increase in customer satisfaction.
- 70% cost savings from technology choices.

ABOUT CLIENT

The customer is a French sporting goods shop with more than 1,500 locations in more than 45 nations. They are among the biggest athletic goods retailers in the world. Tennis rackets to cutting-edge scuba diving gear are among the athletic products that the company sells. Additionally, the business owns over 20 brands and has research and development centres located all around France to create cutting-edge designs.

BUSINESS REQUIREMENTS

Being in the fast-moving retail market, the client requires real-time visitor statistics to support quick market strategies and business decisions. In addition to analysing footfall data, the client wanted to integrate it with point-of-sale (POS) data for more comprehensive insights. They sought a simple yet robust solution that could deliver accurate results.

BUSINESS CHALLENGES

The client wanted a solution to make use of the available data to achieve the following goals:

- Leverage security cameras across the store to generate a store heat-map.
- Leverage CCTV camera data to understand the variations in footfall by area of the store and time of the day.
- Identify customers using facial recognition to know the number of customers leaving the store without making a physical purchase.

SOLUTION HIGHLIGHTS

Indium analysed the video feed data collected from the cameras installed on the shop floor and developed a solution to fulfil the client's business use cases.

The solution included the following components:

- Custom 3D image mapping to map the store layout and visualize customer movement patterns.

- Utilization of ImageAI to enable security cameras to count the number of customers entering the store during specific time periods. Customized functionality could also be incorporated to count customer activities in specific areas of the shop.
- Development of a neural network model for video analytics and image processing.
- Analysis and optimization of the model to improve accuracy.
- Detection of outliers in the collected data points, particularly focusing on patterns within various shelf zones.
- Training of the neural network model using a large dataset of images representing different classes of objects or people. The model's accuracy was increased over time by using annotations and testing it with sample videos.

BUSINESS IMPACT

- More than 80% accuracy was achieved in the models targeting customer behavior, resulting in improved customer targeting and increased customer engagement.
- Comprehensive analysis of the conversion rate from visitor statistics to live sales through the POS systems, along with customer interaction analysis in different product sections and product-wise conversion rates, led to improvements in product placement and cross-selling across product categories.
- There was a nearly 15% increase in customer satisfaction after the implementation of the solution.
- The user-friendly interface provided all stakeholders with better insights into customer behavior and shelf zone analysis.
- The project resulted in 70% cost savings in the short and long term, as open-source tools were used. Highly comprehensive dashboards with real-time data refresh were tailored to the client's analytical and business needs.

TECH STACK



ABOUT INDIUM

Indium Software is a fast-growing Digital Engineering company, focused on building modern solutions across Applications, Data, and Gaming for its clients. With deep expertise in next-gen offerings combining data and applications, Indium offers a wide range of services including Product Engineering, Low-Code development, Data Engineering, Ai/ML, Digital Assurance, and end-to-end Gaming services.



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