



# AI-Based Analytics and Intelligence for Retail Business



AI Based Analytics and Intelligence for Retail Business



## Introduction

Retailers have been looking for innovative ways to draw more people into their stores. The practice of experience stores focuses not only on the display of products but also on records and analyzes data related to



purchase behavior. Also, smart experience stores can improve consumer experience by offering product trial and acquire first-hand consumer preferences and feedback. The smart experience stores can provide real-time data analysis with improved accuracy for E-commerce market segments and product manufacturers.

## Challenges

The challenge lies in the smaller retailers' lack of infrastructure for easy deployment and integration of a large amount of data generated by AIoT systems. Ability offers the AI edge cameras with USB and Ethernet connectivity to allow for simple integration and data analysis at the edge.

## Solution



Ability's Cube cameras are powered by Intel® Movidius™ Myriad™ X MA2085 VPU and developed with the OpenVINO™ toolkit to optimize pre-trained deep learning model. It supports 4K@30fps with H.264 standard and equips with a USB Type-C® interface. The Cube Camera product line offers comprehensive applications that assist in a wealth of store activities such as

price checker, self-ordering, self-checkout, and digital signage. The self-checkout combined with POS NVR.

We offer face recognition, gender, and age identification combined with access control to monitor the customer's traffic in smart retail. The Smart Retail Solution encompasses comprehensive applications that assist in-store activities: price checker, self-ordering, self-checkout, and digital signage. These applications utilize facial recognition technology powered by Ability's state-of-the-art AI engine and record the products they buy along with the date and time of the purchase. Store managers can gain insight into a store's customer base, such as demographics with age and gender information, further used for customer profiling. Managers can see the report from NVR and POS NVR and identify their best customer segments to increase sales and develop marketing strategies. For example, when a person enters the store and is identified as being in a certain age and gender group, product messages or advertisements can be targeted specifically at people of this group. These applications can also help analyze customer behavior in the store so that retail owners can offer better services.



### Security Center



Video Wall



VMS Platform



NVR

### POS System



DarkFighter Camera



POS NVR

### Entrance & Exit



LightFighter Camera



EAS

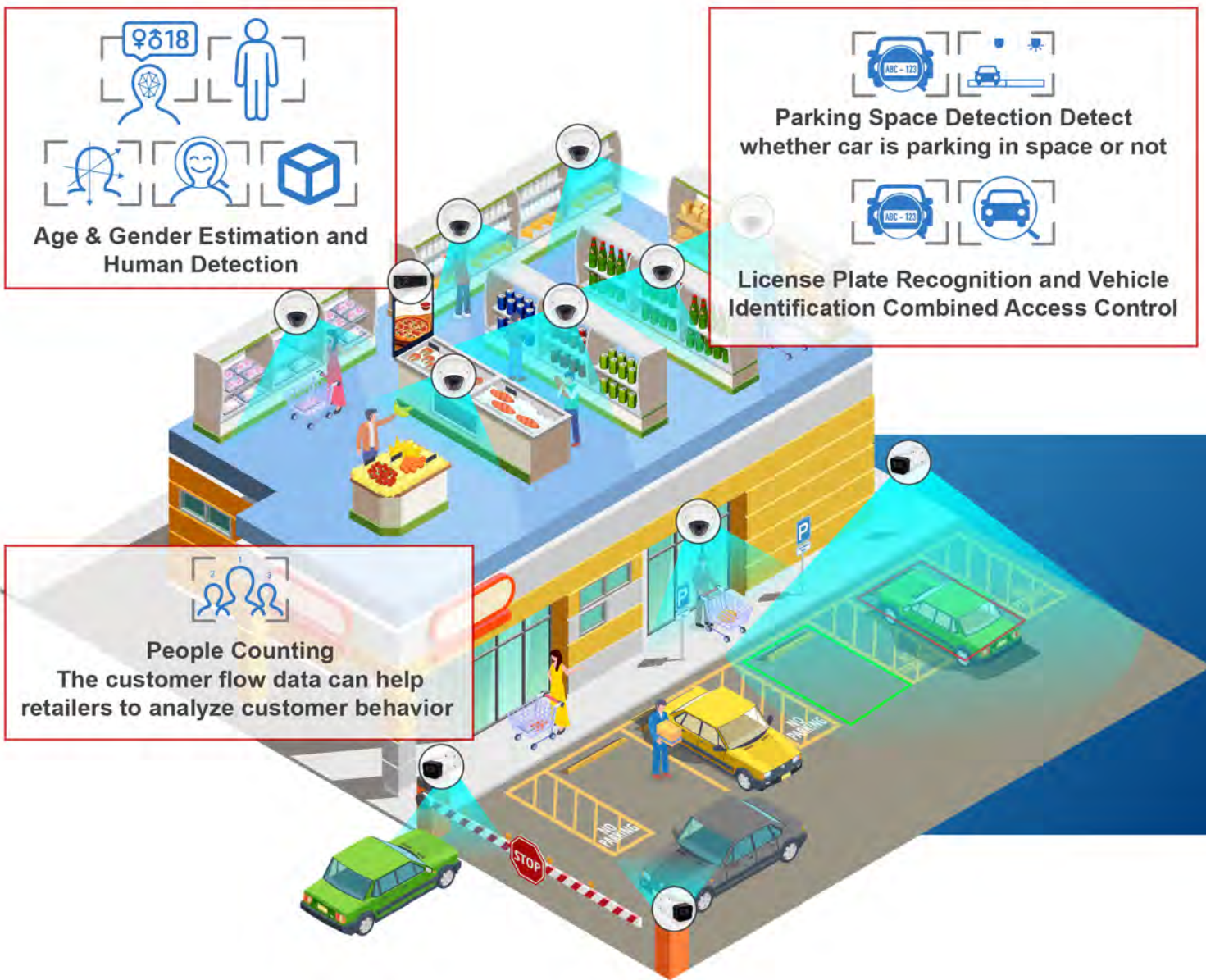
### Digital Signage



AI Cube USB Camera



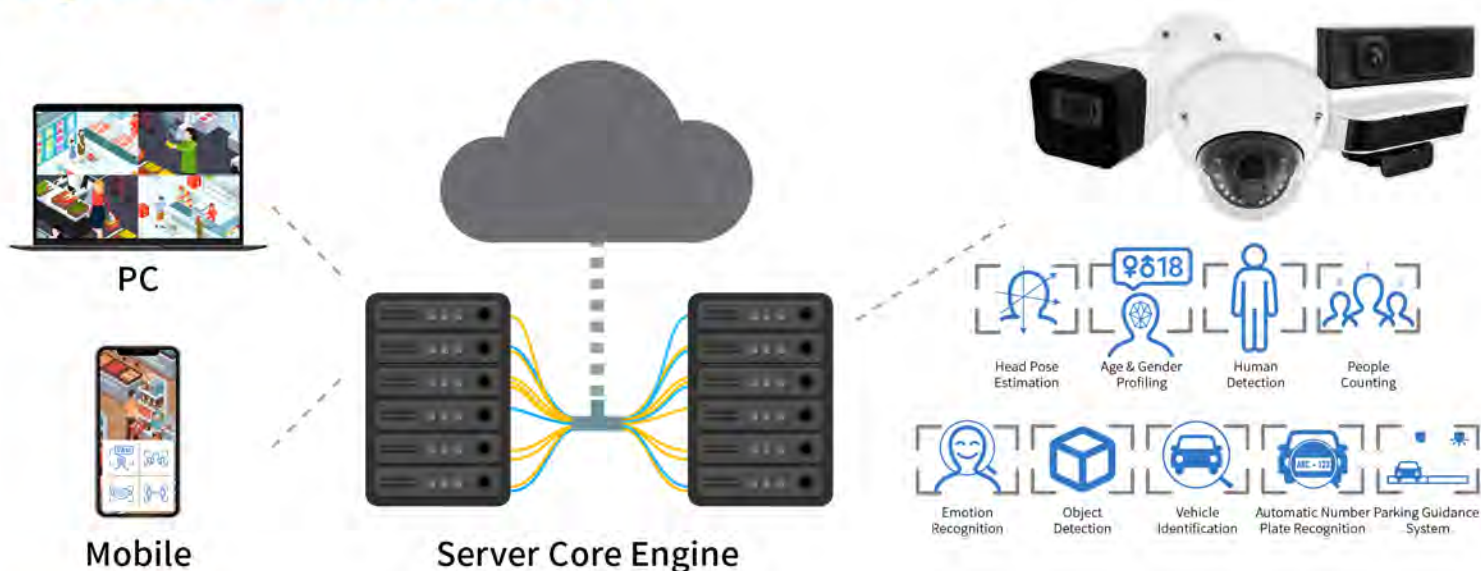
Kiosk



Ability's bullet and dome cameras are powered by Intel® Movidius™ Myriad™ X MA 2485 VPU, support 4K@30 FPS data streaming and are certified with IP66 IP66 Ingress Protection. Smart retail solutions include people counting that shows the occupancy and heat map that measures visit duration and signals hot zones for traffic flow management. Furthermore, age and gender estimation and human detection assist in shopping behavior analysis while heat map measure visit duration and highlight the high-traffic zones of a store. Age, gender estimation and human detection obtain statistically significant metrics for customer behavior applications.

This solution paves the way to improved operational efficiency and increase profitability.

# System Architecture



## Result

As online shopping becomes more and more popular over brick-and-mortar stores, physical stores are ever challenged to attract customers with the aid of technology. Ability offers smart retail solutions to help retailers generate insight from customer data through integration with AIoT applications. It brings the benefit included personalize the shopping experience, improved customer service and simplify Checking-Out. With a truly experiential and personalized shopping trip, those who may want to buy online will be more swayed to visit a store that offers options personalized to them. Customers are attracted to exciting and unique experiences also likely to recommend it to their friends and family.

## The Leading Manufacturer of AI Camera -Innovative ODM/OEM service provider-

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