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Improve Checkout Processes with Evalueserve's AI-Based Product Recognition Solution, AiLENZ Intelligent Scale

The AiLENZ Intelligent Scale, optimized with the Intel® Distribution of OpenVINO™ Toolkit, enables retailers to deploy checkout technology with advanced product recognition AI modules to improve shopping experiences for customers.

EVALUESERVE

About Evalueserve

Evalueserve is a leading analytics partner that helps empower clients with AI-driven products and solutions. Their mind+machine™ approach to business management and transformation helps activate data, analytics, and research to support innovative companies optimize decision-making and drive actionable outcomes.

Advancing Checkout Technology With AI-powered Product Recognition

Conventional employee manned checkout machines and self-checkout kiosks have been scaled across retailers to help customers expedite shopping and allow employees to turn attention to other important tasks. However, shoppers and cashiers have been deterred from using POS machines when they need to input lengthy product codes or search through long product menus for non-barcoded items like fresh produce. More than three in ten shoppers avoid paying for non-barcoded items at self-checkout machines.[1] Retailers need long-term, convenient checkout solutions that can quickly and accurately detect and identify products without barcodes to reduce overhead costs and improve checkout experiences for customers.

Recognizing that Evalueserve's product recognition AI modules can solve these challenges when paired with checkout scales and kiosks, Intel and Evalueserve worked together to develop the AiLENZ solution that enables scales and kiosks to recognize products with ease for faster, more accurate transactions.

Solution Overview

Evalueserve's AI-based product recognition solution, AiLENZ, integrates with POS machines, autonomous kiosks, and scales to enable real-time grocery item detection to speed-up point-of-sale (POS) transactions. With this solution retailers can eliminate the need for store employees and customers to manually punch in individual SKUs, increasing POS efficiency and improving overall in-store customer experiences. By programming their checkout machines with the AiLENZ's solution companies can empower customers and cashiers with reliable checkout capabilities.

Evalueserve works closely with Intel ecosystem partners to integrate their intelligent product recognition AI modules with their existing checkout hardware, enabling deployment of the Intelligent Scale to end customers. Designed using Evalueserve's deep learning algorithms, artificial intelligence, and computer vision technology, the AiLENZ solution is a flexible package of modules that can plug into partner software and hardware systems via API integration across a wide variety of retail stores such as supermarkets, grocery stores, and autonomous stores. Long term, retailers can leverage data collection and processing from the Evalueserve solution to shorten checkout lines, improve inventory management, and make data-driven decisions.

End Customer Benefits

Improve Customer Checkout Experiences

Conventional checkout machines can cause problems for customers when the devices do not easily recognize products or require additional staff assistance. With AiLENZ Intelligent Scale, the traditional issues with non-barcoded products are solved in seconds with automated product recognition via AI technology and deep learning algorithms. AiLENZ Intelligent Scale reduces the requirement of manual intervention, which creates shorter lines and speeds-up the checkout process to improve customer experiences at POS.

Scale with Ease

The flexibility of the AiLENZ solution allows retailers to quickly scale across checkout systems and stores. Staff train the deep learning algorithms and local AI modules by scanning products through the POS machines. After training, retailers can scale the solution without needing to prime the devices repeatedly. Once the checkout devices have collected the product SKUs, retailers can deploy the solution in additional locations.

Key Features

Product Recognition
Detect and identify product SKUs fast with high accuracy based on product features like shape, size and weight

Data Security
Deploy on-premise security to protect customer data

Device Agnostic
Integrate seamlessly into existing systems to reduce training

SKU Management
Add new SKUs easily on/offline with fast, advanced deep learning algorithms

Reduce Operational Costs

The plug and play software solution can integrate with existing customer hardware and software systems, avoiding the need to overhaul networks with new checkout technologies. Having smarter POS devices can reduce employee training costs to augment human cashiers so that retailers can turn their staff to more important operational tasks. Checkout systems with the AiLENZ solution improve existing systems while reducing overhead costs.

How AiLENZ Intelligent Scale Works

The AiLENZ Intelligent Scale utilizes a plug-and-play product recognition module powered by advanced computer vision, AI technologies, and deep learning algorithms. The Evalueserve solution is suitable for different partner types. Original equipment manufacturers (OEMs) can plug in the AiLENZ module with API integration into their existing hardware and software. System integrators can also leverage this solution by pairing their software with a 3rd party hardware partner of their choosing. Regardless of the end-customer's capabilities, partners can pair the Evalueserve product recognition module via API with a partner's preferred to integrate into a customer's POS system.

Ahead of deployment, Intel and Evalueserve utilize their extensive technology expertise to help partners such as OEMs, ODMs, and SIs determine the right hardware configuration and Intel processors, such as Intel® Celeron® Processors, for their AiLENZ Intelligent Scale. These recommendations are based on an understanding of a partner's end customer scenarios to meet specific end customer needs and ensure successful deployment. Each checkout device must have a camera. Once the preferred hardware is determined, deep learning algorithms are programmed via API into the POS device so that the local modules can begin learning product SKUs.
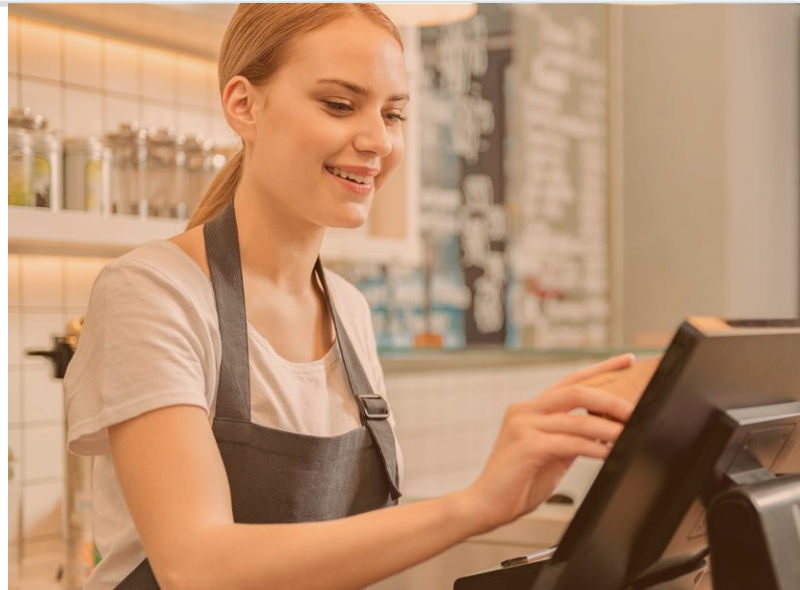
After the solution is deployed at an end customer's store, staff scan products through the checkout devices so that the camera can capture images and identify distinguishing features of each SKU. The images are sent to the product recognition API before returning with a highly accurate SKU prediction. After a brief training period aided by store staff, the AI-based modules and deep learning algorithms will quickly be able to automatically identify products based on the images. In addition, Intel® Processors and Intel® Distribution of OpenVINO™ Toolkit help to optimize Evalueserve's deep learning modules to dramatically speed up the product recognition process during POS transactions. The AI-based modules develop an understanding of the system capacities to provide retailers with insights into their inventory maintenance pipeline. After accumulating product SKU data, retail customers can use the checkout machines with confidence that items will be identified correctly during transactions.

Evalueserve also offers optional data analysis capabilities with the AiLENZ product recognition modules. Retailers can add a tool that will collect and analyze data during POS transactions that provides actionable insights like sales per day at the store in different areas, and at both the city and regional level.

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Intel Solution Components

Intel® Distribution of OpenVINO™ Toolkit: The Open Visual Inference and Neural Network Optimization Toolkit provides a full suite of development and deployment tools. Developers can build and optimize AI-based computer vision models on Intel® hardware with minimal disruption and maximum performance. The OpenVINO toolkit makes it easier to convert your modules to take advantage of existing Intel® processor architecture that quickly build, optimize, and scale deep learning and visual inference applications.

Intel® Atom® Processors: Powerful CPUs designed to provide high processing throughput for mobile and IoT devices as high-density, low-energy data center applications.

Intel® Core™ Processors: Intel's highest-performance CPUs for laptops and desktops, delivering advanced responsiveness, connectivity, and graphics performance.

Intel® Celeron® Processors: Intel's computer microprocessor CPUs built for performance and value on affordable, entry-level PCs and portable devices.

Solution Summary

Retailers are looking to improve checkout processes with more accurate product recognition for faster, more trusted transactions at point-of-sale kiosks. Manual SKU entries are tedious and highly error-prone, steering customers away from self-service kiosks forcing store employees to take time away from other tasks to monitor checkout processes.

With the AiLENZ Intelligent Scale solution, automatic product recognition can detect and identify grocery items faster with more accuracy to speed-up checkout processes. Evalueserve can help OEMs, ODMs, and SIs cater to their end customer needs to reduce operational costs and improve customer checkout experiences with smart-checkout technology.

Learn More

- [The Evalueserve Website](#)
- [Intel® Distribution of OpenVINO™ Toolkit Product Page](#)
- [Intel® Atom Processors Product Page](#)
- [Intel® Core™ Processors Product Page](#)
- [Intel® Celeron® Processors Product Page](#)

1 The Power of Produce 2022, [The Food Industry Association](#), 2022