



Amazon Introduces New Shelf Monitoring Solution for its Sellers to Ensure High Quality Fresh Produce

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- *Johari can help improve quality of fresh produce and ensure that customers receive fresh, high-quality produce every time they order from sellers on Amazon Fresh.*
- *Reduced food waste: By detecting defects in produce early on, Johari can help to reduce food waste*

Bangalore, August 23, 2023: Amazon.in today announced the introduction of shelf monitoring solution - a Machine Learning powered farm-to-fridge quality assurance system for fresh produce. With this launch, Amazon.in aims to enable its sellers to meet the consumer demands for high quality fresh fruits and vegetables while shopping on Amazon Fresh. Leveraging cutting-edge deep neural networks and rule-based grading, the shelf monitoring solution sets a new benchmark for monitoring and maintaining fresh produce quality.

Store shelf monitoring solution is powered by state of art computer vision models and Wi-Fi enabled IoT cameras to detect pre-determined defects in fruits and vegetables using image of crate, as an input. The solution detects the count of visible items of produce, and identifies specific visual defects such as cuts, cracks, pressure damage among others. Amazon has developed two types of models- one for detecting each item in the crate and counting total number of items, and second to identify the defect classes present in each item. Both these models are trained using annotated defects in Millions of produce images.

“Technology plays a critical role at every stage of fresh produce supply chain, particularly in maintaining the quality of the produce. This requires precise identification of defects and accurate grading. Leveraging cutting-edge deep neural networks, and rule-based grading, shelf monitoring solution sets a new benchmark for monitoring and maintaining highest quality of farm produce. This will also strengthen end-to-end quality monitoring system for Sellers of fresh produce on Amazon Fresh,” said Rajeev Rastogi, Vice President, Machine Learning, Amazon. “The Shelf Monitoring solution will bolster capabilities of Amazon Fresh Sellers to fulfil the commitment of delivering the finest grocery services in India. With seamless automation, the solutions ensure top-notch quality of fresh produce, enhancing customer satisfaction.” added Rajeev.

Shelf monitoring solution currently supports manual monitoring through a Johari mobile app and automated monitoring using cameras installed on top of produce shelves. In manual monitoring, operators use Johari app to submit a produce crate image taken freely from their smartphone. Shelf monitoring solution assesses the image for quality and if acceptable analyzes the image to detect defects and uses grading logic to highlight the items that don't meet the quality criteria and need to be culled. Using this information, operators cull the highlighted produce and then update the app with their action. Operators can also see the details of defect types in the app. The manual monitoring solution takes around 6 seconds on average to assess a crate of produce items. In the automated monitoring, the experience is similar to manual monitoring except that the images are taken automatically by the camera in store/ site shelves, at periodic intervals that can be controlled by the site operator for each product.

Harsh Goyal, Director and Head of Everyday Essentials, Amazon India said *“Amazon continues to invest in state-of-art technology to ensure customers with the best online grocery shopping experience. Our focus has always been customer backwards and we are providing our Amazon Fresh customers consistent and superior quality of fresh produce across India.”*

Grocery continues to be one of the fastest-growing categories for Amazon in India. Today, Amazon Fresh is available across 60+ cities, and offers full basket selection of (wet and dry grocery) quality products delivered to consumers at their preferred delivery slots. Amazon Fresh is committed to provide its customers the best online shopping experience with the largest selection of quality products at unmatched quality, great value and convenience.

About Amazon

Amazon is guided by four principles: customer obsession rather than competitor focus, passion for invention, commitment to operational excellence, and long-term thinking. Amazon strives to be Earth's Most Customer-Centric Company, Earth's Best Employer, and Earth's Safest Place to Work. Customer reviews, 1-Click shopping, personalized recommendations, Prime, Fulfillment by Amazon, AWS, Kindle Direct Publishing, Kindle, Career Choice, Fire tablets, Fire TV, Amazon Echo, Alexa, Just Walk Out technology, Amazon Studios, and The Climate Pledge are some of the things pioneered by Amazon. For more information, visit amazon.com/about and follow @AmazonNews.

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