CUSTOMER SUCCESS STORY

elementary × fairlife

AI VISION VS. YOGURT: FAIRLIFE'S BATTLE FOR FLAWLESS PACKAGING

See this case study on Yield, the Elementary blog

Fairlife revolutionizes dairy packaging with Elementary's AI vision inspection, ensuring flawless lid placement and code accuracy at unprecedented scale

A growing brand needs a smart solution that can keep up with production demands

The Fairlife brand (owned by the Coca-Cola Company) is built on the principle of superior quality – in their products, animal welfare, customer care, and sustainability efforts. And with growing demand for their nutritious products, Fairlife strives to ensure that every bottle of milk or tub of yogurt leaves the production line with the same uniform quality, packaging, and labeling. So, when the new lactose-free yogurt facility in Indiana started noticing recurring defects in lid placement and code printing quality, Fairlife needed to find a solution that could keep up with their production demands, accommodate changes in packaging design without expensive retooling and retraining, keep labor costs steady, and work within the company's strict food safety and cleaning protocols while maintaining precise accuracy throughout.

CLIENT

Fairlife (A Brand of The Coca-Cola Company)

INDUSTRY

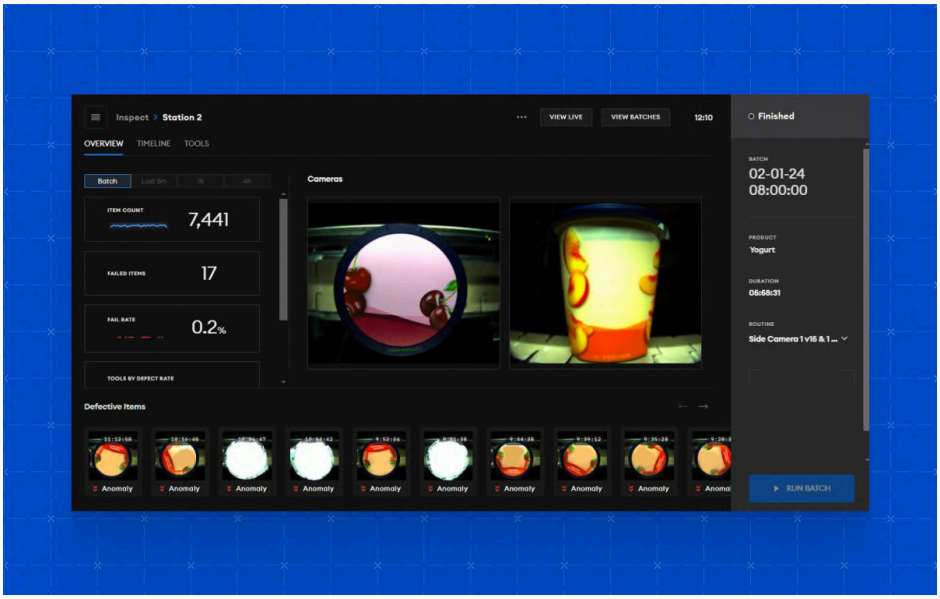
CPG

INSPECTION STACK

Cloud-Based Model Training
Area Scan Cameras
AI Vision Controllers

VISION TOOLS

OCR
Anomaly Detection



The production facility already employed experienced quality control inspectors, but with defects slipping through the cracks, it became clear that sample inspections were not going to be sufficient going forward, and hiring more quality personnel was both cost-prohibitive and inefficient as a long-term solution for a high-volume production line.

Traditional machine vision solutions were also ruled out – with several flavors being produced at once and frequent updates to the packaging to keep the design fresh and engaging, most automated quality systems couldn't recognize the changes and would need to be constantly updated and retrained. What's more, the product's expiration date code wasn't always printed in the exact location on the lid. This deviation was too difficult to recognize for most traditional machine vision inspection solutions, so Fairlife turned to the next-generation quality automation.

Elementary's AI-driven image inspection automates quality control

The Elementary solution was selected for its ease of use, quick setup and deployment, no-code adaptable camera features, and AI-powered inspection capabilities. Elementary engineers worked with Fairlife to collect images of acceptable lid and code designs, positions, and graphics, label good parts and anomalies, and configure pass criteria. A lid with an image placed slightly off center would still be considered acceptable, while a missing lid, or the one with an image that's wrong or inverted, will be automatically flagged, and ejected from the production line. Despite the random orientation of lids and multiple designs for different flavors, Elementary's cameras were able to capture the right images, while its AI could recognize defects, missing lids or codes, or poor printing quality – with speed and precision.

DEPLOYED WITHIN DAYS, ELEMENTARY'S AGILE SYSTEM INDEPENDENTLY INSPECTS AND DIFFERENTIATES MULTIPLE SKUS, ENSURING QUALITY WITHOUT CONSTANT RECALIBRATION.

IT SMARTLY DISREGARDS MINOR MISALIGNMENTS, TARGETING ONLY THE DEFECTS THAT MATTER, SUCH AS MISSING LIDS OR ILLEGIBLE CODES.

Sensitive equipment needs to survive nightly washdowns

Food manufacturing is subject to strict cleanliness standards, even when the product that comes down the production line is already packaged and sealed. Fairlife's yogurt packaging facility has to be sprayed nightly to prevent contamination. To accommodate these requirements, Elementary engineers teamed up with a custom sanitary welding provider to design and construct a food-safe electronics enclosure that could house cameras, sensors, and lighting equipment and be able to withstand nightly cleanings. The frame was assembled above the production conveyor belt and can be opened and accessed by the production facility personnel at any time.

Analytics out of the box

With millions of tubs coming down the production line, Elementary's system was able to collect important data that helped reveal trends and get to the root of regularly occurring defects, enabling Fairlife to enhance processes and reduce future errors with data-informed decisions.

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