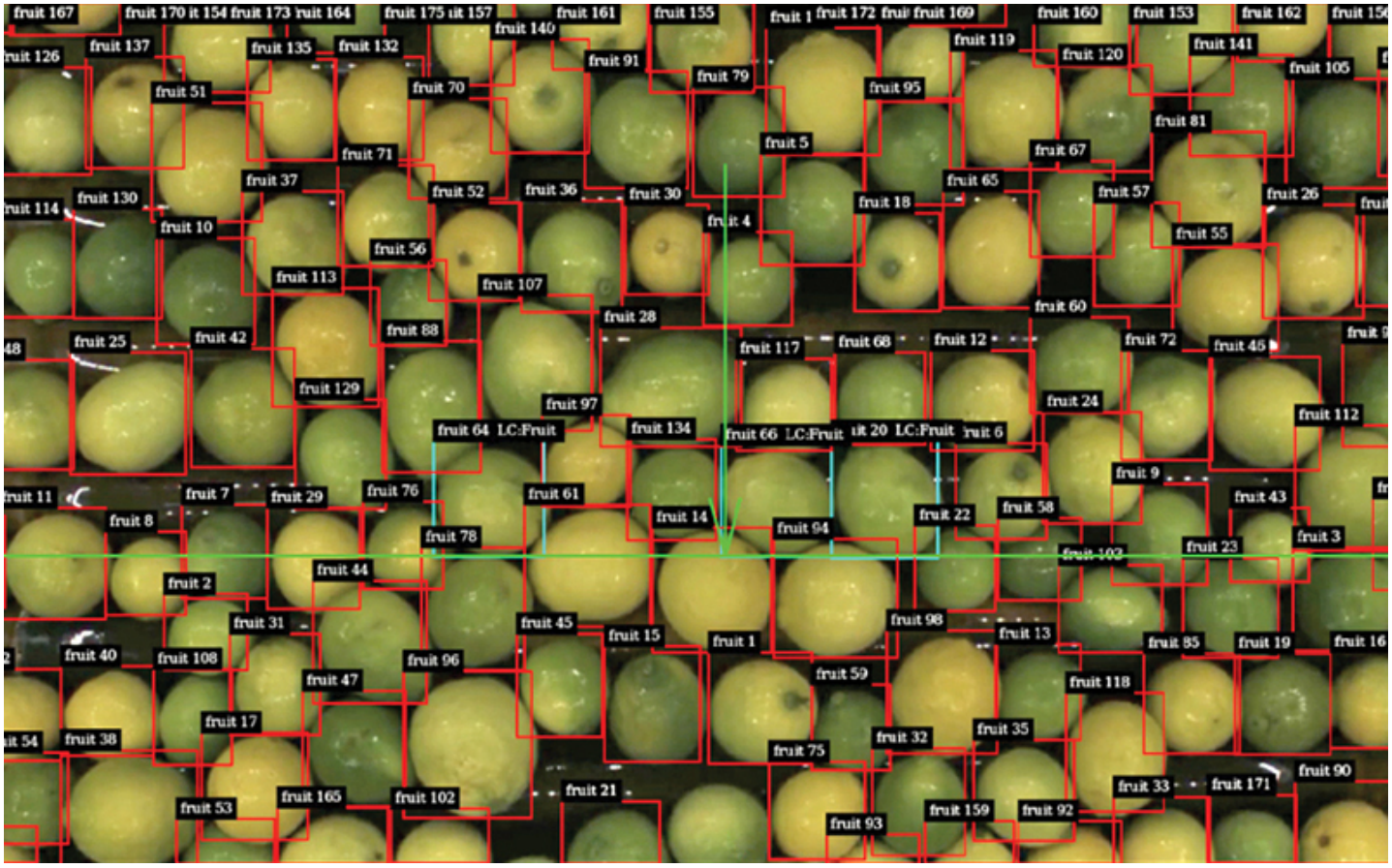

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AI-powered sorting and grading solutions: A revolution for food processors and packhouses

By

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AI is bringing a big technological shift that businesses will have to keep up with to remain competitive.

Artificial Intelligence is catalyzing a significant technological transformation in the food processing and packaging industry, an evolution that businesses must adapt to in order to stay competitive.

AI-driven automation is expected to be integrated into various manual tasks within food processors and packhouses, a shift that promises benefits for employers, employees and consumers alike.

Since 2019, Tomra Food has employed AI to enhance the accuracy of sorting and grading solutions beyond the capabilities of traditional methods. This use of AI in food production is anticipated to grow rapidly, impacting numerous aspects such as improved grading and sorting, detection of foreign materials, predictive maintenance, intelligent diagnostics, prediction of product shelf life and optimized packing for diverse customers and supply chain requirements.

The terms Machine Learning and Deep Learning often arise in discussions about AI. Machine Learning encompasses techniques enabling software systems to identify patterns in data for insightful measurements. Deep Learning, a branch of Machine Learning, utilizes artificial neural networks to address complex challenges. These technologies are particularly relevant in food production due to the numerous data-driven tasks involved.

The inherent variability in the food industry, from environmental factors to natural product differences, presents challenges for traditional systems in making accurate predictions. AI-enhanced inspection and sensor systems can collect superior quality data, leading to more precise and consistent decisions. This advancement not only reduces food waste but also maximizes the value and saleability of products.

AI's capabilities extend to enhancing the accuracy of sorting and grading machines in making 'accept or reject' decisions, recovering quality product from compromised materials and categorizing products into different grades for automated production.

An example of Deep Learning in action is the newly-launched Spectrim X series grading platform, incorporating Tomra's LUCAi Deep Learning technology. This platform, with its pre-trained models, achieves unparalleled grading precision.

AI is also integral to Tomra's new Neon technology, which pre-grades blueberries. It effectively identifies and removes unwanted clusters, undersized, and unripe fruits, thereby optimizing the efficiency of optical graders by eliminating over 95 percent of clusters and more than 90 percent of undesirable green and red berries.

Beyond enhancing product quality, AI helps processors and packhouses reduce costs, meet specific customer product requirements, and address labor recruitment challenges. By automating tasks like manual sorting and grading, it reallocates workers to more engaging and value-adding activities.

As the demand for healthy food increases with the growing global middle class, AI will become increasingly vital in meeting consumer needs. Most importantly, AI stands to play a crucial role in addressing the challenge of feeding the world’s burgeoning population through increased food production and reduced waste.

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