



IX[®] Case Study

AI-Enabled Quality Control in Food Manufacturing



VOOBAN



IMPLEMENTATION
ENGINEERS[®]
BEYOND CONSULTING



25%
improvement
in quality
efficiency

<5%
error rate,
down from
30%

When Legacy Sorters Started Costing More Than They Saved

A major North American food processor of fresh produce and value-added products supplies high-volume retail, foodservice, and industrial channels where quality standards are uncompromising and throughput never slows.

Legacy optical sorters combined with manual inspection were causing two costly problems: excessive false rejects of good product and missed defects that required downstream rework. The result was chronic yield loss, heavy reliance on scarce labor, and growing risk in an industry that tolerates zero visible defects.

Our client needed an intelligent system that could learn from real-world product variation, dramatically raise detection accuracy, and remove human inspection from the critical path — all while running at full production speed.

An Adaptive AI Brain That Replaced Rigid Sorters and Manual Rework

Implementation Engineers and Vooban transformed the quality line from a rigid, rules-based sorter into an adaptive, AI-driven inspection brain that continuously evolves with the product it sees.

Key Capabilities

- High-resolution computer vision inspecting every item in real time
- Recognition of dozens of defect types: bruising, discoloration, shape anomalies, cuts, foreign material, and surface damage
- Customer-specific quality profiles that instantly switch thresholds by destination (retail display vs. foodservice vs. processing)
- Continuous learning pipeline: rejected and accepted images automatically feed model improvement without stopping the line
- Edge-based inference for sub-second decisions; cloud retraining for weekly performance gains
- Seamless integration with existing high-speed sorting hardware

Results

- Overall quality efficiency **improved by 25%**
- Combined error rate (false accepts + false rejects) dropped from **~30% to under 5%**
- Significant yield recovery by rescuing previously rejected good product
- Manual downstream inspection virtually eliminated, freeing labor for higher-value tasks
- Ability to tailor grading standards instantly by customer contract — a new commercial advantage
- Platform now deployed as the long-term, scalable quality engine for the entire operation

Let's Turn Your Vision Into Results

Implementation Engineers and Vooban deliver together — turning strategy into operational reality through AI-enabled execution.

Our proven **Align-Design-Execute** framework ensures your strategy doesn't stall at planning. From aligning leadership around priorities, to designing AI-driven operating models, to executing change inside your operations, we work side-by-side to deliver results that scale.

Ready to Get Started?

Let's explore how we deliver together. Contact us today to schedule a conversation. Together, we'll chart the path from vision to execution.

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