Food & beverage AI built to run at line speed

Detect drift earlier, reduce packaging losses, and protect quality - so teams act before throughput, yield, or compliance fall out of spec.

The problem

Food and beverage manufacturing runs at a different speed and level of complexity — small parameter drift can cascade into major loss.

High-velocity packaging lines run at hundreds of units per minute; small drift can trigger significant yield loss.

Thermal cycles, CIP/SIP processes, and frequent changeovers make every shift different.

Generic manufacturing AI struggles to interpret these signals in context fast enough to drive action.

Outcomes at a glance

- Real-time optimization where plants lose the most time, yield, and margin.
- Earlier detection of drift and faults to prevent downstream loss events.
- Purpose-built intelligence for sanitation, packaging integrity, thermal stability, reliability, intralogistics, and AR-enabled execution.

The answer

SymphonyAI delivers eight food & beverage industrial AI applications purpose-built for high-speed, high-variability operations - closing the gap between insight and action.

What they are (the 8 apps): CIP/SIP optimization; filling/seaming & line performance; digital twin & 3D simulation; vision for packaging/seaming; predictive maintenance; thermal/PU quality optimization; intralogistics (material flow/robotics/LGV); AR-enabled line ops.

Why they're different: engineered around F&B realities — high-speed lines, thermal variability, CIP/SIP complexity, micro-stoppages, drift conditions, and robotics.

How they run in production: developed using IRIS Forge and built natively on Microsoft Azure to address bottlenecks in beverage, brewing, canning, packaging, and processing.

SymphonyAI

Food & beverage use cases

CIP/SIP optimization — AI optimization of cleaning cycles, energy use, and chemical consumption — reducing downtime while improving repeatability.

AI-optimized filling, seaming & line performance — drift, micro-stoppages, changeover planning, and yield modeling — built for high-speed beverage lines.

Digital twin & 3D production simulation — full 3D modeling of brewing, thermal processing, canning, packaging, and utilities for throughput simulation, layout validation, and faster commissioning.

AI vision for packaging quality & seaming integrity — defect detection across case packers and seaming systems — predicting jams, underfill/overfill, label/print issues, and can/seam damage.

Predictive maintenance for beverage assets — machine-health intelligence for fillers, seamers, packers, pumps, compressors, and conveyors, including remaining-useful-life modeling and automated scheduling.

Thermal process stability & beverage quality optimization — AI-based control for pasteurization, PU drift, carbonation consistency, and ingredient dosing accuracy.

Intelligent material flow, robotics & LGV-driven intralogistics — orchestration of materials, packaging components, pallets, and transport systems — optimizing AGV/LGV routing and buffer management.

AR-enabled maintenance & line operations — AR overlays for maintenance guidance, asset intelligence, alarms, runtime insights, and remote expert support.

Explore each use case

Watch demo videos of each use case to see how prebuilt food & beverage use-case solutions target the biggest loss points — downtime, packaging defects, drift, sanitation variability, and thermal instability — and how they're designed to deliver rapid ROI through faster detection, faster decisions, and faster corrective action.

What's at risk if you wait?

With first value in weeks, waiting only compounds downtime, scrap, and energy waste — while faster adopters lock in a lasting speed and margin edge.

Learn more