

AI/ML | Laboratory Automation

Automated Precision for Cell Processing

Yahara Software engineered the AI vision, adaptive scheduling, and embedded controls behind CellX's Celligent platform.

Our Client

CellX Technologies built Celligent, a platform that combines robotics, imaging, and AI to automate cell processing for regenerative medicine and cell-therapy research — with the goal of making lab-scale cell culture as consistent and scalable as manufacturing.

The Problem We Solved

Cell processing is inherently variable, and manual handling only adds to the inconsistency and risk. CellX needed a system that could see, decide, and act in real time across a complex, multi-device workflow — while still meeting the reproducibility and safety bar required for GMP-compliant lab operations.

The Value We Delivered

Yahara built the AI vision, adaptive scheduling, and embedded control layers that enable Celligent's hardware and software to work as one system. The result optimizes cellular growth while maintaining safety and efficacy; removes human error from routine decisions; and generates a detailed, step-by-step record of every experiment, which gives researchers a more reliable process and clearer insight into why it worked.

What Was Accomplished

- **Laboratory Automation:** Robotics and software engineered together for GMP-compliant, scalable lab workflows
- **ML Pipelines for Image Analysis:** CNN models trained to read biological data and drive real-time decisions
- **Vision-Guided Automation:** Developed for cell culture and other camera-driven robotic processes
- **Instrument Integration:** Embedded control software that synchronizes multi-device hardware
- **Initial AI Model Development:** Standing up first-version models against experimental data