Project 4: Automating Quality Control in a Medical Device Manufacturing Plant

📍 Industry: Medical Devices & Healthcare Manufacturing

💰 Project Cost: $6,200

⏳ Project Duration: 14 Weeks

📌 Project Overview

A medical device manufacturer was experiencing **high defect rates (8%)** in final product inspections, leading to **regulatory compliance risks** and **customer dissatisfaction**.

⚠️ Challenges Faced

- **Manual inspections** were prone to **human error**, leading to **defects and rework**.
- **Slow quality control processes** caused delays in shipments.

🔍 Lean Six Sigma Approach

- Applied the **DMAIC framework** to identify inefficiencies in the QC process.
- Implemented **AI-powered Computer Vision for automated defect detection**.
- Integrated **IoT sensors** for **real-time production monitoring**.

🚀 Implementation Details

- Developed **AI-driven quality control systems** to automate defect detection.
- Integrated **IoT sensors for real-time monitoring of production quality**.
- Created **digital dashboards for quality performance tracking**.

📊 Key Results & Business Impact

✅ **Defect rate reduced from 8% to 2.5%**, reducing rework costs.
✅ **Automated inspections reduced labor costs by 25%**.
✅ **Compliance risks mitigated with 100% regulatory adherence**.