



DIMAAG | ThirdAI

WHERE PHYSICAL AI MEETS SMART INDUSTRY



Workers' Safety &
PPE Compliance



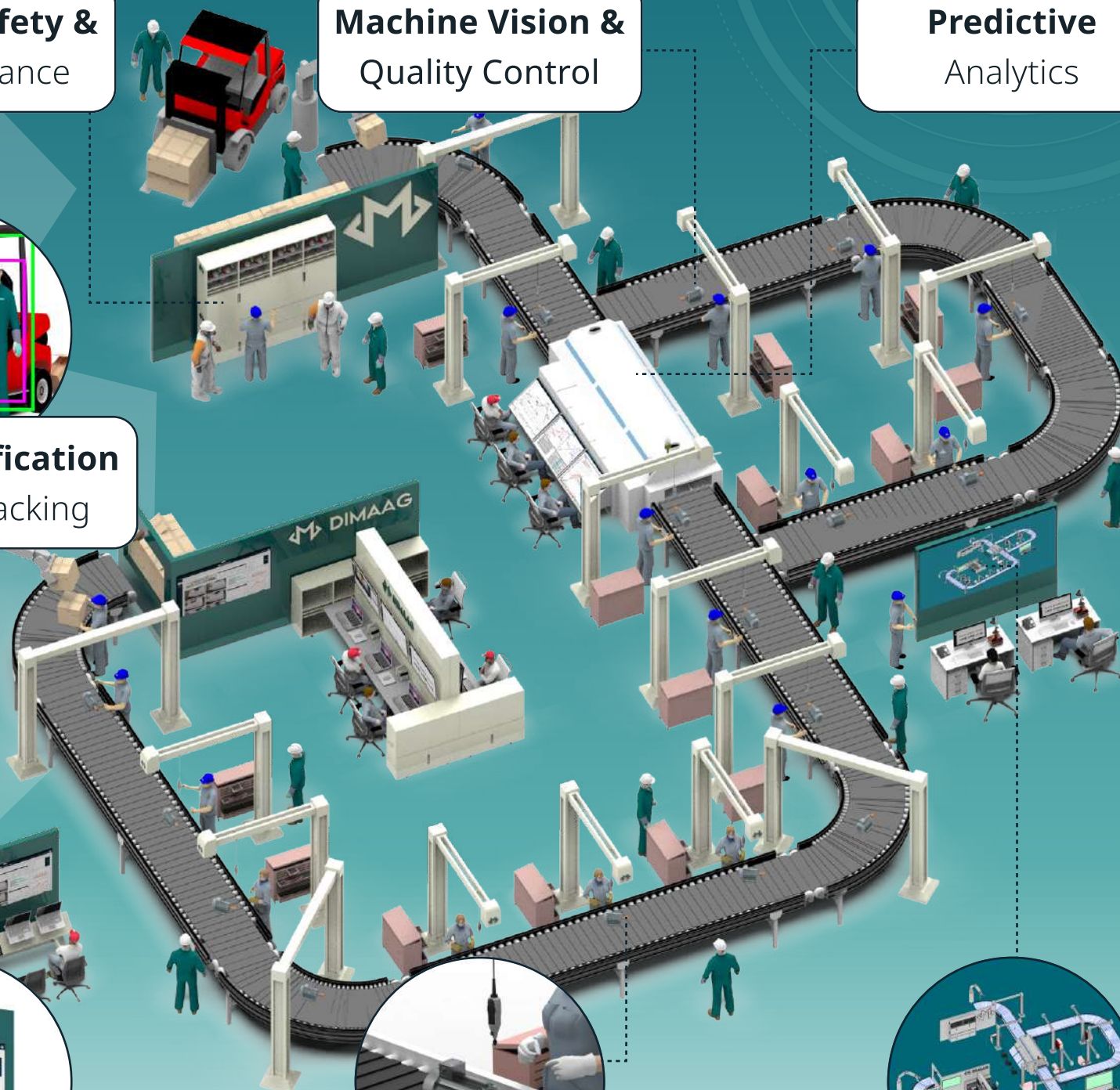
Machine Vision &
Quality Control



Predictive
Analytics



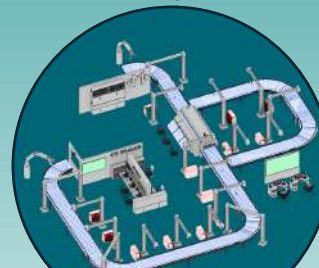
Object Classification
& Activity Tracking



Real Time Monitoring
Dashboards



Inline Production
Traceability

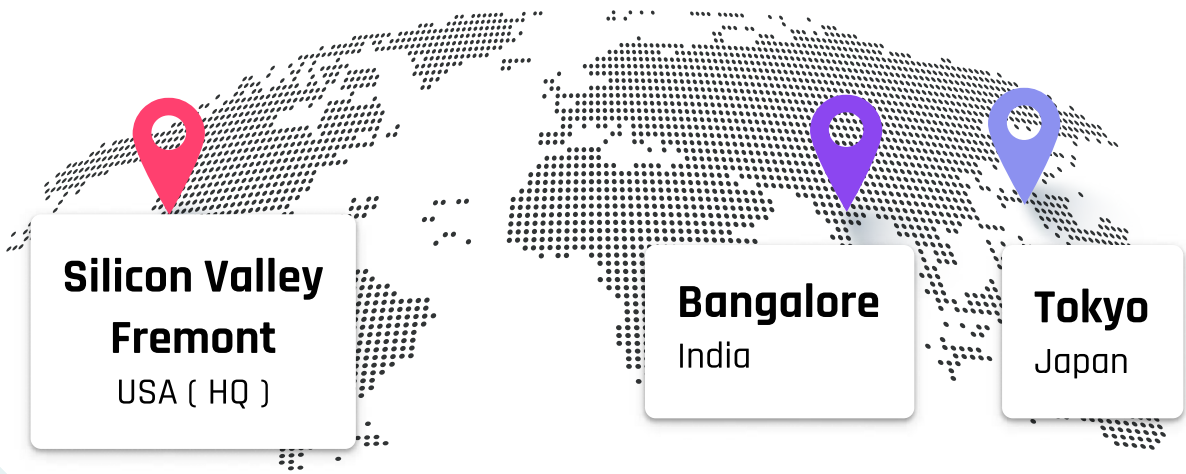


Digital
Twin

ABOUT DIMAAG

Founded in 2018

- Solving Customer “Pain Points” is our only FOCUS.
- Veteran Cross-Functional Team.
- Ian Wright, Cofounder of Tesla is the Architect of DIMAAG’s Electrification and Data Center Solutions



TRUSTED BY

Medtronic



BRUNSWICK

FUJIFILM



TOSHIBA

KOMATSU

OMRON



HITACHI



CUSTOMER TESTIMONIALS

“We tried multiple AI providers, but we struggled to find success. Our partnership with DIMAAG-AI changed all that. In just under three months, they accomplished something previously thought impossible.”

-R. HIRO SUZUKI | PRESIDENT, SENJU METAL INDUSTRY CO., LTD.

“Through our collaboration with DIMAAG-AI, we have successfully integrated AI technology into our products, achieving a remarkable level of accuracy and significantly reducing development times. This level of achievement would have been challenging to attain independently. Furthermore, Dimaag- AI’s Generative AI technology has empowered our new product development teams to transfer existing defects and generate new defect data. This comprehensive system not only enhances inspection quality but also effectively identifies the causes of defective products, resulting in a measurable strategic return on investment. “

-Ms. TOMOKO INOUE | CEO, OMRON VENTURES

In collaboration with DIMAAG-AI, we integrated EV technology into our products, achieving best-in-class fast-charging performance and accelerated development timelines—capabilities that would have been difficult to realize independently.

-Ms. YUICHI KITAO | CHAIRMAN & REPRESENTATIVE DIRECTOR, KUBOTA CORPORATION, JAPAN

“In construction machinery, voice control is not about novelty, it’s about whether we can genuinely reduce operator burden and improve safety in real jobsite conditions. By working with partners like DIMAAG, we’re focusing on identifying where voice interaction truly adds value. This is an important step toward practical, operator-first solutions, while ensuring operation remains reliable, intuitive, and usable even in noisy, offline environments.”

-Mr. TADASHI NAKANO | CONSTRUCTION PRODUCTS DEVELOPMENT, HITACHI CONSTRUCTION MACHINERY

The battery module for this collaboration from Dimaag is versatile and applicable to various electric products.

-Mr. KAZUNORI NAKAMURA | CTO & EXECUTIVE OFFICER, HITACHI CONSTRUCTION MACHINERY, JAPAN

“We are delighted to collaborate with Dimaag to leverage the effectiveness of MWCS.

-Mr. TAISUKE KUSABA | SENIOR EXECUTIVE OFFICER (JOMU), CTO, SUPERVISING RESEARCH & DEVELOPMENT, KOMATSU

CUSTOMER APPLICATIONS

AUTOMATED OPTICAL / X-RAY INSPECTION

- AI software layer integrated with equipment or available independently
- Detect weak patterns and non-conformances in components with > 99% accuracy
- Gen AI: 2D and 3D solder ball and joint generation in AOI/AXI applications

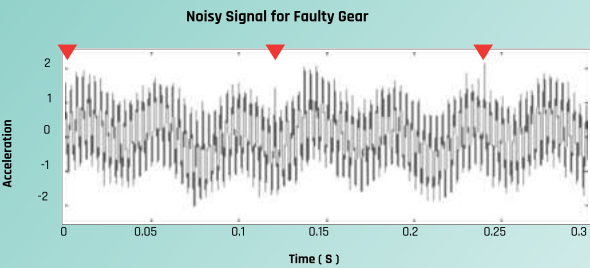


STORAGE DISK FAULT DETECTION

- Off-the-shelf AI vision solutions fall on intricate component designs that make up Storage Disk Assemblies
- > 220M inspection / month
- Reduced Recall from >4% to <0.03%
- Savings of \$12M/month with Dimaag's factory automation SaaS

SURFACE DEFECTS INSPECTION

- Surface Defect Detection - Cracks, scratches, dents, foreign material and paint imperfections
- Applications : Automotive, Capital Equipment, Machinery, etc
- Accuracy of Defect Detection > 99%
- Explainable AI: Heatmap with confidence levels on algorithm logic



FAILURE & LIFETIME PREDICTION

- Detect and predict faults in vibrational environments to monitor, analyze & predict. AI layer integrated with IOT sensor data
- Predictive Maintenance (PdM) solution with >95% accuracy
- Prevent unscheduled downtime

AUTOMOTIVE INSPECTION

- Sealant, stamping, and end-of-line quality workflows
- High-resolution imaging tied to operator feedback
- Reduces bad-part escapes and supports process improvement
- PLC integration, and other automation (part ID tracking, etc.)



CUSTOM INSPECTION SYSTEMS FOR FOOD & BEVERAGE INDUSTRY

- Cameras, lighting, fixtures, PLC integration, and edge inference
- Adapted to human-assisted or fully automated inspection cells
- Built from common modules for repeatable, scalable deployments

FACTORY MONITORING

- Real-time line and station analytics
- Exception capture for retraining and model improvement
- Traceability across images, predictions, and QA decisions



INSPECTION OF MEDICAL DEVICES

Before

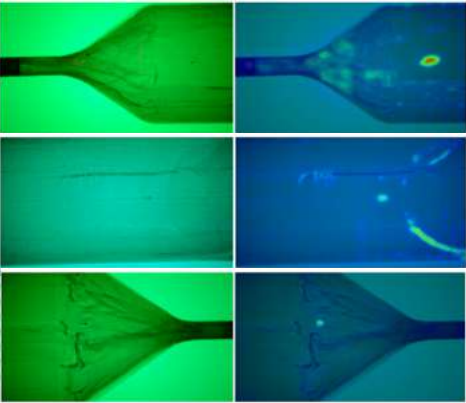
Manual inspection of the Balloon catheters to identify subtle defects was time consuming (~1 min/part) and very subjective

Failure on parts on the field posed

- A **high risk in the surgical procedure** and naturally affects the patient's life
- **Long term reputational damage**

Our Solution

- Built a customized system with an active tray where the inflated balloons were loaded
- The balloons are automatically rotated while multiple images were captured to get complete coverage of each balloon under specific controlled lighting conditions

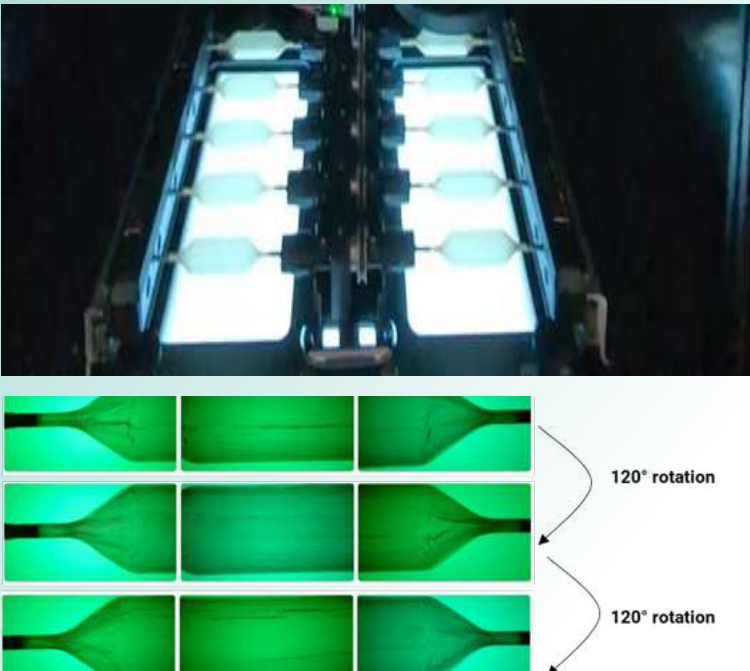


Challenges

- The balloon when inflated still has the **natural wrinkles** (which are not defects)
- Traditional computer vision systems does not work with natural variations such as these wrinkles while looking for tears, foreign particles and separated membranes

After Our Solution

- > **99% accuracy** to identify particle contamination, blisters and inner membrane separation on balloon catheter
- **4x faster** in inspection time and consistent



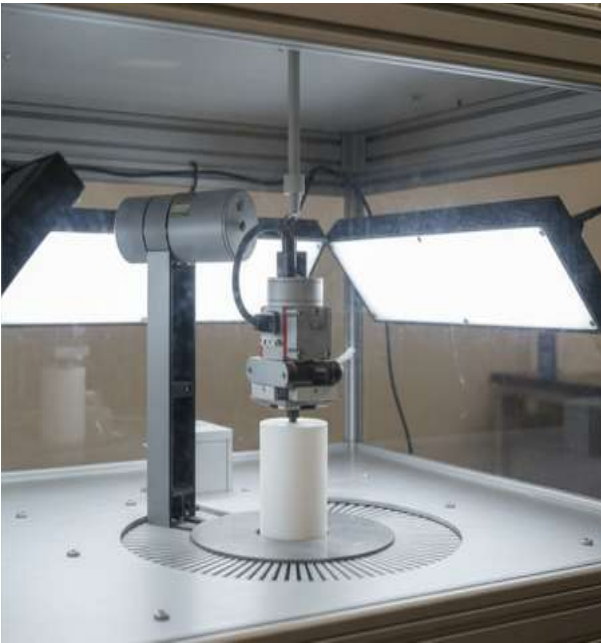
HIGH PRECISION AUTOMATED 360 IMAGE CAPTURE WITH AI ASSIST

Current Process

- Human Inspection of the Catheter for potential occlusion.
- Operator Inspects each of the 66 holes in the ~2mm Catheter tip under microscope.
- Quality of inspection varies from person to person; multiple lines and shifts

Our Solution

- Customized a system to capture images of each catheter tip.
- 7 high resolution images (360° comprehensive view + static image of the head)
- Non invasive (no water flow or heating of the tip) and Catheter is securely held further eliminating unwanted damage during inspection

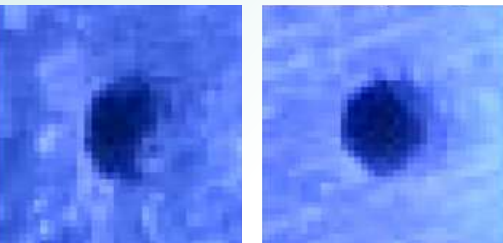
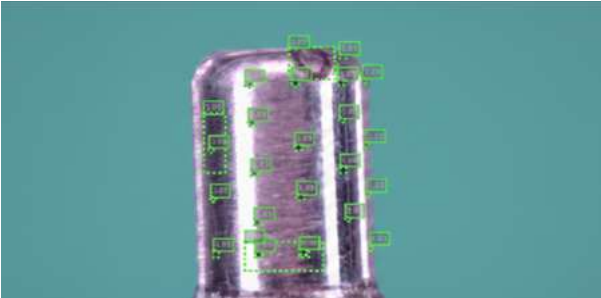


With Our Solution

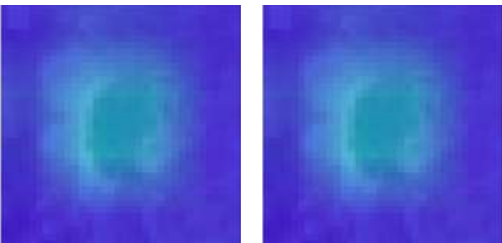
- **Model 1**: Each of the Catheter holes were identified and counted to ensure 66 holes are present.
- **Model 2**: Inspected each hole individually for occlusion and/or anomalous structure.
- **Model 3**: Each image (with multiple holes) are separately inspected for additional coverage.
- Full control over defining pass or fail back to operator with AI becoming superhuman assistant.

For additional model quality, we add synthetic data to train/test for potential varying defects.

Actual Results



Cropped view of each hole



Detected Anomaly

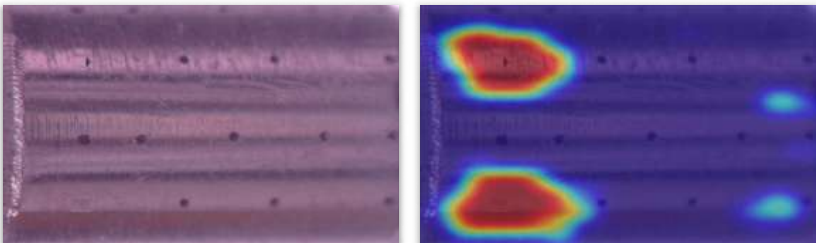


Image level inspection: Added synthetic defects to test

INSPECTION OF SURGICAL IMPLANTS AND PATCHES

Before

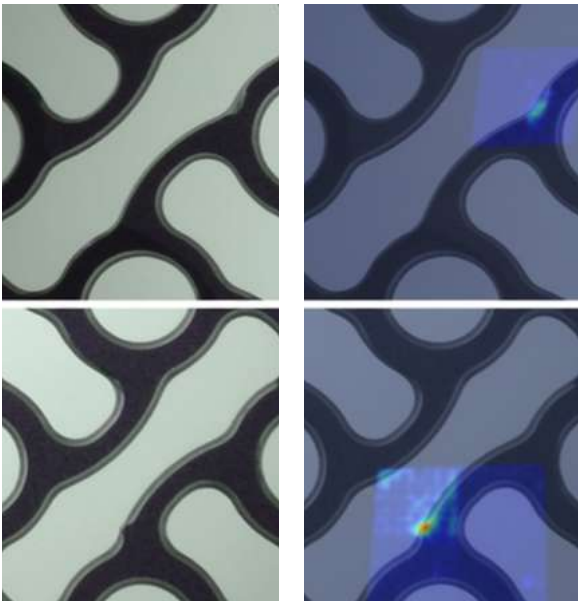
- Human Inspection of the part took 15-30 mins per part.
- Inspected repeated patterns under microscope hours at a time is very error prone.
- Need to reduce the total man hours spent on inspection.

Solution

- Built and deployed customized solution (System + HMI S/W + State of the art Models)

After

- Identifying and grading of parts (Pass, Fail, Review)
- **Reviewed parts -> process improvement in manufacturing.**
- **8x faster inspection (~2 mins - 4 mins)**
- **>\$500,000/yr savings from reduction in OpEx**
- Auditable reports



A Slice Of
Original Image

Real-time Defect
Detection

HUMAN-ASSISTED INSPECTION

3-10X

Inspection throughput improvement in targeted workflows

AUTOMATED MACHINE VISION

>99%

Reported accuracy in multiple deployed inspection use cases

TRACEABLE FACTORY AI

EDGE + CLOUD

Local inference with centralized monitoring and retraining

INSPECTION OF PRECISION ENGINEERED COMPONENTS

Before

Customer used Human Inspectors
~1 min/part; 7.3% false negatives; team of 10 inspectors per shift

Trays of component that has several piezoelectric crystals brought to human inspectors. Each component is about 70mmx10mm



Human inspector looks for various defects under a microscope on the front and the back side of this component.



Front



Back

After (DIMAAG AI/ML Solution Deployment)

<10 secs/part; inspect 16 parts at a time

False negatives reduced from their current 7.3% to <1%

- **6x throughput**
- **8x ROI**

Auditable system of record

