



# Let's take a look at Machine Vision

Make your service safer and more  
reliable by using edge AI devices



There are some things that simple telemetry and IoT sensors just can't detect, leaving you to manually inspect your plant and other assets. This takes engineers away from proactive maintenance and repair work and exposes you to the impact of outages that happen in between inspections. Then, there are some assets that are simply impossible to monitor continually (using manual or traditional sensors), putting you and your customers at risk of compliance breaches and more serious incidents.

CGI Machine Vision services and solutions work to change the economics of visual inspection. We replace periodic manual inspection with continuous automatic video analysis that can reduce the cost of inspection, free up your engineers to do more value-adding work, and increase the rate of coverage many times.

## What's it all about?

CGI Machine Vision is an edge compute, hardware and software stack that can be applied to Internet of Things (IoT) centric vision-oriented problems. It uses innovative deep neural net AI technology and edge computing to interpret photos and video and process the images in a human-like way.

Our CGI Machine Vision stack can be deployed on a range of embedded IoT devices to create highly scalable applications. We have also developed several in-house device platforms to suit specific operational applications. Processed data can be sent securely into our cloud hub in an industry standard format allowing for easy integration with a range of service applications.

CGI Machine Vision enables clients to accelerate innovation, implement new use cases, scale their use of IoT, and deliver transformational operational outcomes.

## How is the industry reacting?

### We have identified these recent trends in the industry:

- IoT sensors and devices are increasingly being deployed to monitor and manage a wide array of real-world operations
- The volume of data generated, transferred, and processed by organisations is increasing exponentially
- Artificial Intelligence (AI) and Machine Learning (ML) are the two fastest growing areas
- Edge computing is increasingly being perceived as scalable/robust
- There is increasing awareness/acceptance of the need for more powerful processing/ML capabilities at the edge of the network
- Hybrid models (cloud/edge) are becoming increasingly attractive to highly regulated industries. IoT sensors and devices are increasingly being deployed to monitor and manage a wide array of real-world operations.

Lower costs  
and improve the  
coverage of your  
visual inspections  
and monitoring

## What challenges are we all facing?

### The main challenges that industry trends are bringing to light include:

- The rapid growth of IoT sensors/devices is generating an extraordinary volume of data, some of which is highly complex/difficult to integrate
- The cost/latency of transferring and processing visual data precludes the implementation of certain use cases (that do not currently provide return on investment)
- Visual use cases increase complexity, cost, and time required to analyse and process data
- Defining models and training AI/ML requires up-front time as well as money
- Edge computing/IoT endpoints expand the surface of a security issue
- Ongoing challenges deploying IT/tech in the right way, at right time.

## What can CGI Machine Vision do ?

- Increase data quality by improving the velocity, accuracy, efficacy, and efficiency of visual inspection
- Increase the availability and speed of real-time data analysis
- Reduce latency of sending image and video streams to the cloud
- Reduce dependence on cloud or on-premise availability and connectivity
- Reduce cloud storage and data transfer costs incurred sending data to the cloud for analysis
- Capture more data points, more frequently, without increasing the cost of data
- Deploy always-on, automated solutions that are not dependent on human resources
- Implement use cases, previously impractical and/or impossible
- Integrate additional data sources & formats as required.

### CGI Machine Vision accelerates our clients' ability to start (or scale) their use of IoT and delivers the following outcomes:

✓ Increase operational performance and efficiencies whilst reducing costs

✓ Deliver measurable business value, and scale this across the organisation

✓ Rapidly implement and scale new use cases and applications cost-effectively

✓ Enable real-time responses and adopt predictive and proactive operational models

✓ Increase sustainability, safety and regulatory compliance

✓ Generate a return on investment on previously impossible or cost-prohibitive use cases

✓ Increase operational capabilities whilst improving resilience and availability

✓ Reduce the strain on internal networks and infrastructure

✓ Empower internal resources to focus on added value tasks



## About CGI

### **Insights you can act on**

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world.

We are insights-driven and outcomes-based to help accelerate returns on your investments. Across 21 industry sectors in 400 locations worldwide, our 91,500 professionals provide comprehensive, scalable and sustainable IT and business consulting services that are informed globally and delivered locally.

### **For more information**

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