



# Computer vision

The all-seeing technology acting on visual information

**verizon**  
business



# The all-seeing technology acting on visual information

Computer vision is helping businesses transform their operations by enabling machines to “see,” interpret and act on visual information continuously and at scale. Using neural networks and machine learning, computer vision automates tasks like item identification, facial recognition and pattern recognition – making real-time decisions without human involvement.



Computer vision processes information in a similar way to how humans see the world. It’s not just about coding – AI vision is shaping the way we live and work, bringing exciting opportunities to a multitude of industries.”

**Colin Wilson**  
Enterprise Architect, Verizon Business

While large learning models (LLMs) work with language (words and text) for conversational and generative tasks, computer vision processes pixels proactively, leveraging

cameras, sensors and algorithms to read images and video streams turning raw visual data into actionable business intelligence at the source.<sup>1</sup>

As the industry moves toward multimodal AI (as noted by IBM), this integrates computer vision with natural language processing capabilities (NLP), to create vision language models (VLM) that take text and images or videos as input and produce text as output, usually in the form of image or video descriptions.<sup>2</sup> This can unlock even greater business efficiencies and value.

## Key characteristics:

- Visual intelligence – identifies objects, people, patterns and anomalies in images and video
- Real-time processing – operates on live data streams, often making decisions in milliseconds
- Continuous learning – improves accuracy as it processes more data
- Edge-ready – much of the processing happens locally, close to where the camera or sensor sits
- Scale – can monitor hundreds of cameras and data points simultaneously

<sup>1</sup> Hiteshi, [Computer Vision Explained: How AI Learns to See and Understand the Real World](#), 2025

<sup>2</sup> IBM, [Caballar and Stryker, What are vision language models \(VLMs\)?](#), 2026



# How today's companies are leveraging **computer vision** to power progress

SkinVision's app empowers smartphone users to detect early signs of skin cancer. Patients take photos of suspicious moles or lesions, which AI algorithms instantly analyze for risk assessment, identifying potential concerns like melanoma.<sup>3</sup>

These algorithms are extensively trained on dermatological images to distinguish between high and low-risk skin conditions. For any high-risk findings, the app recommends immediate professional medical consultation.<sup>4</sup> This innovative approach allows proactive self-monitoring and facilitates timely intervention, leveraging AI for accessible skin health screening.

In Brazil, Cromai is working with 10 of the country's largest sugarcane producers using drones and applying computer vision AI to classify weeds, enabling sugarcane plantations to spray precise spots with specific herbicides, rather than blanket their fields.<sup>5</sup>

For producers, Cromai's computer-vision capability delivers a 65% reduction in chemical utilization across their yields.<sup>5</sup>

In automotive, manufacturers are using advanced deployments of computer vision at an industrial scale. BMW's iFACTORY smart factory program in Regensburg produces approximately 1,400 vehicles a day, with virtually no two being identical due to the complexity of customer customization options.<sup>6</sup> The company's AI quality inspection system generates an individual inspection plan for each vehicle every 57 seconds with high-resolution cameras capturing images across the production line to check for scratches, dents, misalignments and other defects.<sup>7</sup>

The results are striking, AI-powered vision systems have reduced vehicle defects by up to 60% through pre-emptive pattern detection—identifying issues before human observation would catch them.<sup>8</sup>

<sup>3</sup> AI Multiple, [Dilmegani and Ermut, 25 Healthcare AI Use Cases with Examples](#), 2026

<sup>4</sup> SkinVision, [Accurate skin cancer detection made simple](#), 2026

<sup>5</sup> Crunchbase, [AgriTech Startups Are Empowering Farmers to Feed The World While Protecting The Planet](#), 2022

<sup>6</sup> BMW Group, [BMW iFACTORY: Tomorrow's production](#), 2026

<sup>7</sup> Automotive Manufacturing Solutions, [Ozsevim, Quality Visions: AI inspection systems that learns from the line](#), 2026

<sup>8</sup> ChiefAIOfficer.com, [Daigle, The BMW AI Strategy That Catches Defects Before Humans Can See Them](#), 2025



# With computer vision's immense data volume, is edge AI the inevitable solution?

Video data is enormous, compared with other forms of data, and intricate processing is required, including image recognition, object detection, and scene analysis.<sup>9</sup> For example, with just a single 4K high-definition camera using compression algorithms generating between 11.2 and 45GB of data per hour based on network speed for streaming HD video.<sup>10</sup> For high quality uncompressed production line visual information, it can be much higher. This massive data generation presents significant infrastructure challenges that must be addressed.

## Why it matters

Bandwidth is already a critical constraint, cited by 59% of organizations as a major barrier to AI success.<sup>11</sup>

- Low latency is non-negotiable for real-time applications like quality control on a fast-moving production line, robotic navigation, or safety systems where milliseconds matter. The AI must process what it sees, where it sees it.
- Compounding this, computer vision workloads are highly cyclical—from retail peak periods to manufacturing model launches and intense training data bursts—creating unpredictable, at times enormous demands for network capacity.

## What this means

The imperative for low latency means pushing workloads to the edge, rather than relying on distant cloud data centers.

- This paradigm shift will drive a minimum sixfold increase in data center interconnect (DCI) bandwidth over the next five years.<sup>12</sup> Unlike traditional workloads where network performance scales predictably, AI is demanding a complete reimagining of how data centers connect their components.
- Moreover, enterprises must anticipate and manage dramatic, sudden surges in data as models are continuously updated with vast image and video datasets, requiring the provisioning of tens of gigabits in a matter of days.
- This creates a new category of infrastructure risk that most organizations haven't fully grasped. Poor interconnection design can render expensive AI accelerators effectively worthless.<sup>13</sup>

## The consequence

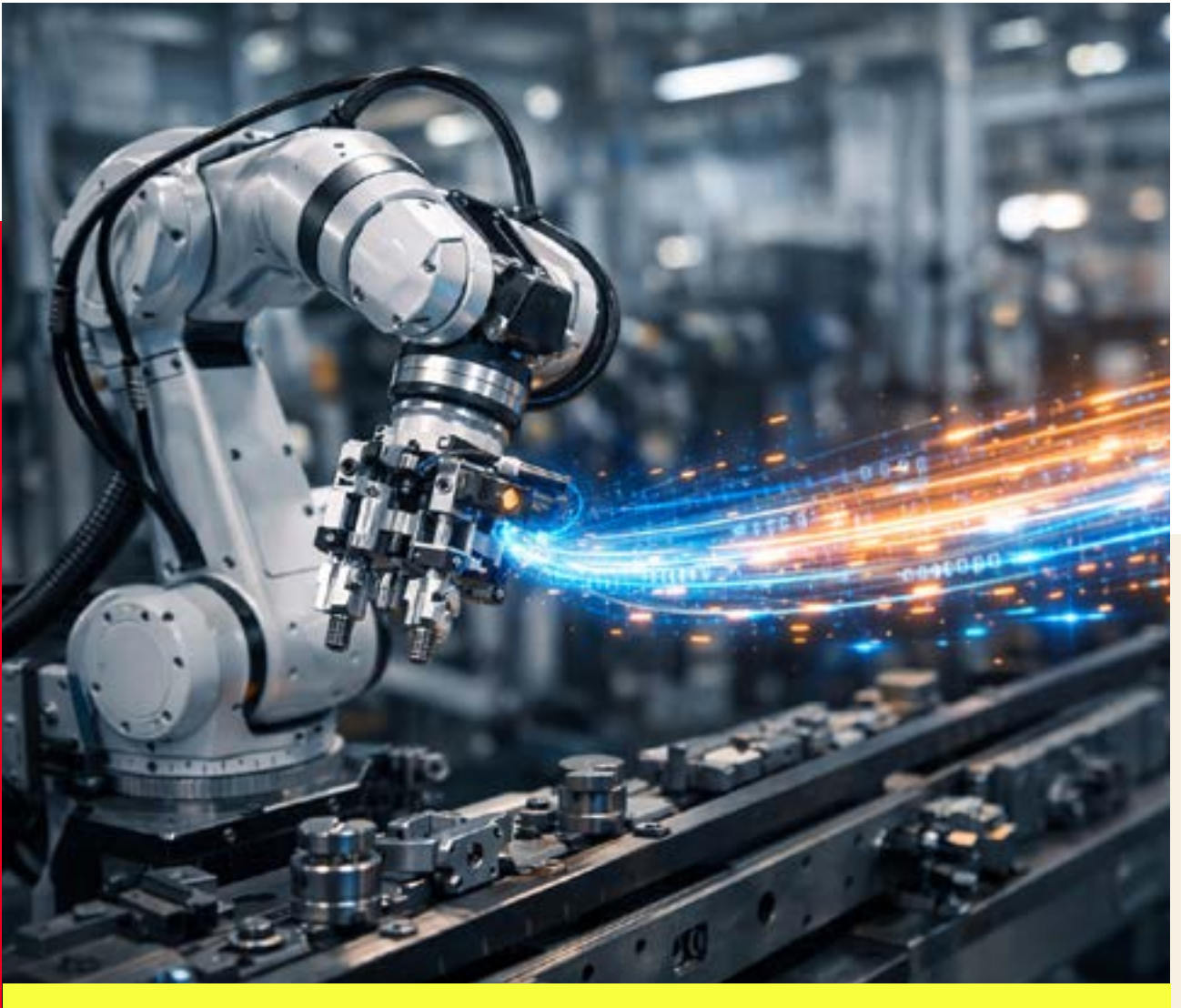
The performance of even the most sophisticated computer vision system is directly limited by its underlying network.

- Neglecting this leads to poor operational outcomes, compromised safety and significant security vulnerabilities.
- Edge devices processing sensitive data (factory footage, proprietary quality metrics) are physically distributed and harder to secure, creating risks not just of breach, but of data manipulation that could lead to false approvals or guide autonomous systems incorrectly.

## Need to know

Sustaining successful enterprise computer vision deployments requires a robust, low-latency, and secure edge network infrastructure capable of dynamically handling massive, cyclical, and geographically dispersed data flows.

- Without this, AI initiatives will remain constrained, vulnerable, and unable to deliver their full operational potential.
- As Verizon Enterprise Architect, Colin Wilson says, “You need to start pushing your workloads to the edge because what you’re going to need is low latency.”



<sup>9</sup> Edge-AI-Vision, [The Future of Vision: Edge AI Breaks Barriers for Data-intensive Applications](#), 2023

<sup>10</sup> ED Viston, [How much Internet does CCTV use per day?](#), 2024

<sup>11</sup> Softwareseni, [Wondrasek, How Bandwidth and Latency Constraints Are Killing AI Projects at Scale](#), 2025

<sup>12</sup> Tech Informed, [Deslande: Data centres brace for sixfold connectivity surge by 2030](#), 2025

<sup>13</sup> Flux, [The Interconnection Revolution: Why AI is Rewriting the Rules of Data Center Infrastructure](#), 2025

# The network foundation is critical for enterprise AI success

Wilson goes on to describe the evolution of AI's impact on businesses over the past 18 months. "Initially, concerns focused on data governance and preventing unauthorized AI use. A year ago, the focus shifted to infrastructure investment

for AI workloads, particularly graphics processing units (GPUs). Within the last six months, the emphasis has been on network connectivity and capacity to handle multiple, large-scale AI applications."

Business need	AI need	Network impact
<b>Transform by automating visual tasks.</b>	Interpret and act on continuous visual information.	Computer vision's 'volumetrically enormous' data (e.g., uncompressed medical imagery) makes bandwidth a critical constraint, necessitating massive capacity.
<b>Enable critical real-time applications.</b>	Instantaneous processing; operate on live data streams locally.	Low latency is non-negotiable for real-time applications. This pushes workloads to the edge, processing data where it's seen, rather than relying on distant cloud data centers.
<b>Adapt to erratic demands and model updates.</b>	Manage cyclical workloads and vast training data bursts.	Computer vision workloads are highly cyclical creating unpredictable demands. The network needs dynamic capacity provisioning, anticipating gigabit surges that will drive a minimum sixfold bandwidth demand.
<b>Protect data from manipulation or false approvals.</b>	Process sensitive data securely at distributed edge nodes.	Edge devices processing sensitive data are physically distributed and harder to secure. This requires robust, geographically dispersed network security to prevent manipulation and breaches.
<b>Avoid constraints for AI initiatives.</b>	Deliver high-performance, robust computer vision systems.	The underlying network directly limits computer vision performance. Sustaining successful deployments requires a robust, low-latency, and secure edge network infrastructure capable of dynamically handling massive data flows.

# Is AI scaling truly reliant on connectivity?

Deploying advanced computer vision workloads, particularly those demanding real-time responsiveness for applications like quality control or safety, and processing massive visual data throughput, necessitates immense network capacity and ultra-low latency. Yet, connectivity challenges remain the single biggest barrier to scaling AI effectively.

Verizon Network as a Service (NaaS) empowers your network to conquer AI computer vision's intense connectivity challenges. Our Tier 1 global network delivers high-performance connectivity across your entire enterprise, from factories to stores, seamlessly supporting AI experiences and massive data transfer across regions.

We leverage AI internally for predictive network optimization, proactively ensuring reliable, low-latency connections vital for continuous computer vision streams. Verizon recognizes that a robust, intelligent network is fundamental for scaling AI. Partner with us to help overcome infrastructure barriers and unlock your agentic future's potential.



## Find out more

Understanding how to generate value from real-time AI, and build the network to support its unique demands, is essential. Verizon works with businesses globally, helping them leverage AI to accelerate

innovation, enhance services, harvest insights, and drive business intelligence. Learn more about how we can help you, [here](#).

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