



The insights gained from deploying AI at the edge let manufacturers solve problems today with streamlined, flexible solutions that are ready for growth now and in the future. Intel's strength is providing the foundation of reliable, high performance compute to do AI right, with your solutions helping customers deploy and scale trusted edge AI solutions faster.



CAPABILITIES

USE CASES

MARKET IMPACT

AI IN APPLICATION

<p>Factory uptime</p> <ul style="list-style-type: none"> Predictive and routine equipment maintenance Control optimization Optimizing logistics and tracking 	<ul style="list-style-type: none"> It's estimated that almost every factory loses at least 5 percent of productivity, with some experiencing as much as a 20 percent loss due to downtime.¹ Unplanned machine downtime costs manufacturers USD 260,000 for every hour of lost production.² 	<p>Predictive maintenance: AI can monitor and analyze data from sensors embedded in manufacturing equipment. This data can help AI predict when a machine is likely to fail or require maintenance, allowing manufacturers to fix problems before they cause production delays or quality issues.</p>
<p>Quality assurance</p> <ul style="list-style-type: none"> Preproduction inspection Production inspection Preshipment inspection Container loading/unloading inspections 	<ul style="list-style-type: none"> The American Society for Quality (ASQ) suggests that the cost of quality ranges between 15 to 20 percent of sales and can be as high as 40 percent in some organizations.¹ The machine vision market is projected to grow from USD 12.0 billion in 2022 to USD 17.2 billion in 2027; it's expected to grow at a CAGR of 7.4 percent until 2027.³ 	<p>Autonomous robots: AI-powered robots can perform various production line tasks, such as assembly, packaging, material handling, or tasks dangerous to humans. These robots can use AI algorithms to adapt to different objects or product variations, improving flexibility and reducing the need for manual intervention.</p>
<p>Worker safety</p> <ul style="list-style-type: none"> Safety regulation compliance (PPE wearing) Access control Safety of robot-human interaction/collaborative robot safety 	<ul style="list-style-type: none"> Workplace injuries are an abnormally high cost center for the manufacturing industry. According to the 2019 Liberty Mutual Workplace Safety Index, injuries cost the manufacturing industry more than USD 7.62 billion last year.⁴ According to the U.S. Bureau of Labor Statistics (BLS), private industry employers reported 2.6 million nonfatal workplace injuries and illnesses in 2021. Median time away from work was 12 days.⁵ 	<p>Computer vision: Vision technology can monitor workers on the production floor and detect potential hazards or unsafe actions. For example, AI algorithms can analyze live video feeds from cameras to identify safety violations, including workers not wearing appropriate personal protective equipment or operating machinery incorrectly.</p>

- Start the conversation with these discovery questions:**
- How do you evaluate manufacturing process productivity from an analytics perspective?
 - How are emerging technologies like video analytics making an impact on your worker safety plans and approaches?
 - How are your shop floor automation efforts being impacted by AI and machine learning?
 - What are your plans for integrating AI technologies into your manufacturing operations?

Download the [Manufacturing Use Cases & Business Outcomes Guide](#)

Benefit from being a part of Intel's vast ecosystem

AI use cases and workloads continue to grow and diversify. Intel offers an unparalleled development and deployment ecosystem. Our goal is to make it as seamless as possible to accelerate solution deployments from the edge to the cloud.

Watch: [How trends in AI drive business outcomes in manufacturing](#)

Contact your Intel rep or start a conversation with one of these Intel-validated ISVs:

EPIC iO iOmniscient

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1. Jon Hartney, "The Cost of Quality," ProjectEngineer, October 29, 2021 <https://www.projectengineer.net/the-cost-of-quality/>
 2. Jim Rapoza, "Playing Russian Roulette with Your Infrastructure Can Lead to Big Downtime," Aberdeen Strategy & Research, March 16, 2016, <https://www.aberdeens.com/techpro-essentials/playing-russian-roulette-with-your-infrastructure-can-lead-to-big-downtime>
 3. "Machine Vision Industry Worth \$17.2 billion in 2027," MarketsandMarkets, November 11, 2022, <https://www.marketsandmarkets.com/PressReleases/industrial-machine-vision.asp>
 4. John Leo Post, "It Pays to Be Safe: Three Investments Manufacturing Companies Can Make to Protect the Bottom Line," Occupational Health and Safety, February 25, 2020, <https://ohsonline.com/articles/2020/02/25/it-pays-to-be-safe-three-investments-manufacturing-companies-can-make-to-protect-the-bottom-line.aspx#:~:text=Minimize percent20Workers' percent20Comp.than percent20percent247.62 percent20billion percent20last pe>
 5. U.S. Bureau of Labor Statistics, "Injuries, Illnesses, and Fatalities," accessed August 4, 2023, <https://www.bls.gov/iif/latest-numbers.htm>

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