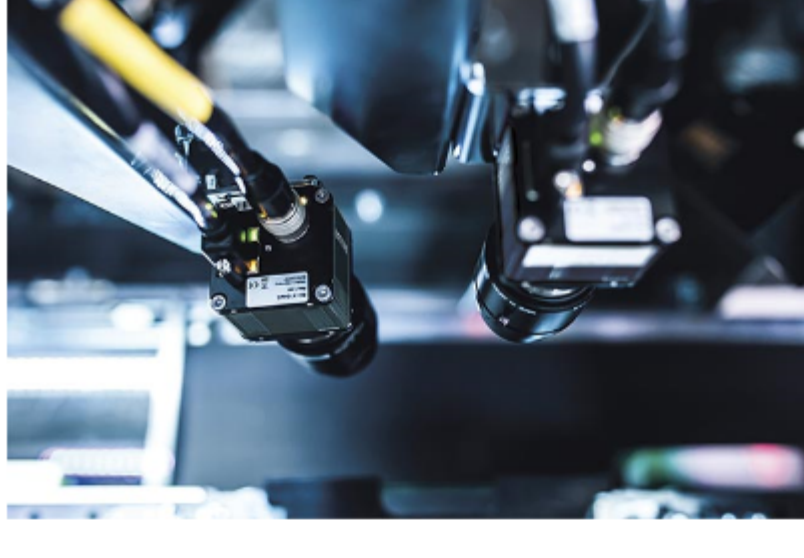




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Assessing the Differences in Smart Cameras, Industrial Cameras, and Embedded Vision

In modern industry and automation, industrial image processing has become a well-established technology. While lighting, optics, and resolution for specific applications still require careful consideration, the core functionality of machine vision has been proved and confirmed over several decades. With advancements in artificial intelligence and its subset of machine learning, the boundaries of what is possible

are continually expanding. To understand how these different approaches came to be, it is necessary to consider the early days of machine vision. [Read Article](#)



Multispectral and Hyperspectral Imaging Applications: Reducing System Complexity and Costs

The demand for advanced imaging systems across industrial and scientific applications has led to the evolution of multispectral and hyperspectral line-scan imaging technologies. These systems are pivotal for tasks such as quality control, material inspection, and scientific research.

However, the complexity and costs associated with these technologies can be significant barriers to widespread adoption. This article presents strategies to reduce system complexity and cost by using less complex and more affordable line-scan cameras, combined with optimized multispectral and hyperspectral line lights. [Read Article](#)



Enhancing Satellite Manufacturing with Machine Vision

An optical solar reflector (OSR) is a critical thermal control element that protects satellites in high-radiation environments. Traditionally, OSRs have been mounted on satellite panels by hand. To make the process more efficient, automation company AKEOPLUS, in coordination with space manufacturer Thales Alenia Space, developed a robotic solution for manufacturing satellite panels. The robotic cell nicknamed "SOLAR" fits OSRs onto satellites in a confined

working area in a cleanroom environment. To help with accuracy, AKEOPLUS relied on MVTec's HALCON machine vision software to assist with inspection tasks and the alignment of the OSRs. [Read Article](#)

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Kowa American Corp.

Kowa's industrial cameras are designed for the most demanding vision projects. Durability and excellent image quality make these cameras ideal for integration into existing production processes. Select models feature IP67 rating for extreme conditions. Available with GigE Vision and CoaXPress interfaces.

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MVTec HALCON 24.11. Now Available

MVTec Software GmbH

On November 20, 2024, MVTec launched version 24.11 of the standard machine vision software HALCON. With the new version, users can look forward to groundbreaking technologies and improvements, focusing specifically on deep learning algorithms.

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Oxipital AI's fully integrated visual AI inspection system provides actionable insights for more resilient, efficient, and sustainable manufacturing. Live monitoring tools deliver actionable insights into production processes, resulting in increased throughput, yield, margin, and reduced waste.

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AI-Powered Smart Camera

Teledyne DALSA, Machine Vision OEM Components

The BOA3 vision system is designed for enhancing production line efficiency, offering four times the processing power of previous models to ensure higher throughput. Inspection tools include advanced algorithms and preprocessors with capabilities for AI-driven classification and object detection.

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Your vision, our expertise - Machine vision technologies present complex challenges to machine builders and system integrators every day. At TKH Vision Solutions, we collaborate with our customers to develop customized, comprehensive vision solutions that streamline these demanding technologies.

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In Case You Missed It

Neural Network Training Method Boosts Vision Capabilities
In the current AI landscape, sequence models have gained considerable popularity for their ability to analyze data and predict what to do next. Platforms like ChatGPT use next-token prediction to anticipate each word (or token) in a sequence to form answers to user questions. Full-sequence diffusion models like Sora can convert words into realistic visuals by successively "denoising" an entire video sequence. [Read Article](#)

VDMA Predicts 10% Drop in Machine Vision Sales
The Machinery and Equipment Manufacturers Association (VDMA) expects a nominal decline in sales of 10% for the image processing industry in Germany this year, according to a press release from the VDMA's Machine Vision department published during the VISION show and trade fair. The percentage differs from the previous forecast made by VDMA in April, which showed a decline of 3%. As of yet, no change in trend is expected for 2025. [Read Article](#)

Toshiba Teli Corporation Takes Home 2024 VISION Award
Toshiba Teli Corporation has won the 2024 VISION award. The company earned the title, presented at VISION 2024 in Stuttgart, Germany, for its OneShotBRDF integrated surface flaw detection scope technology. [Read Article](#)

Next Issue

Features
Food and Beverage, GigE Vision 3.0, and Thermal Vision for Industrial Inspection

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