

Vision spectra



Quarterly newsletter from Photonics Media featuring the latest advancements in and applications for vision systems – from sensors to software. Manage your Photonics Media membership at [Photonics.com/subscribe](https://www.photonics.com/subscribe).

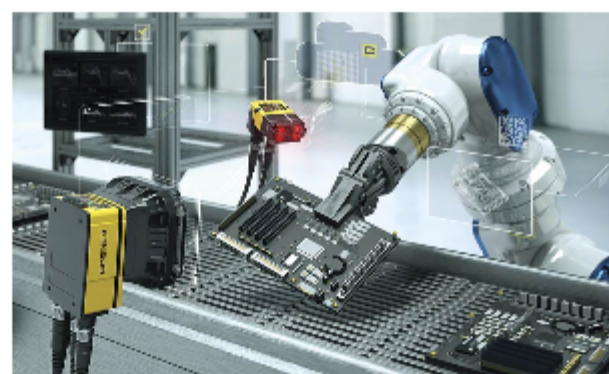
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For Smart Factories, a Vision of Success

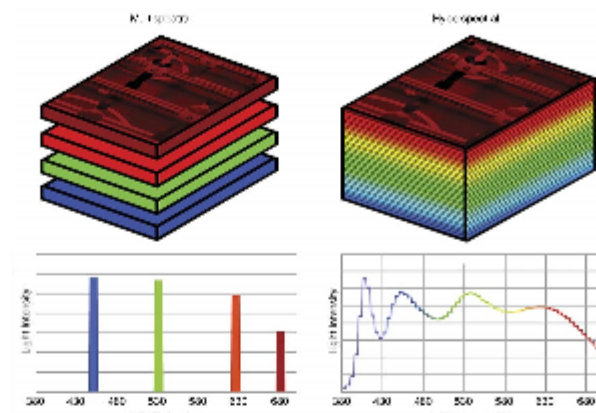
Smart factories require collecting information about products, processes, and people to achieve highly automated manufacturing. In this undertaking, machine vision will supply key data. Traditionally, vision technology has performed parts inspection, product tracking, or robot guidance. Because of smart factories' increasing emphasis on process control and wide sharing of vision outputs, vision systems now face new demands.



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Multispectral Lighting: A Practical Option for Difficult Industrial Imaging Situations

During the past few years, color and spectral imaging approaches have become more prevalent in machine vision system design. Today, machine vision lighting companies and industrial camera designers are working to provide multispectral solutions for industrial applications by either adding more color channels to their standard red, green, blue (RGB) cameras or by implementing new lighting methods for performing spectral analysis. With reduced hardware and computing costs, and advancements in vision software, these tools have become viable options for integrators over a wide range of applications.



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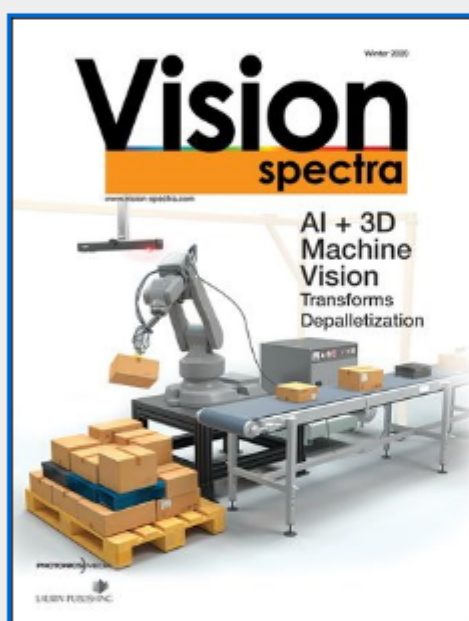
AI + 3D Machine Vision Transforms Depalletization

Manually offloading pallets requires scores of employees to work nonstop. Extensive job and safety training is required, and because the task is physically demanding, injuries often result, leading to increased absenteeism. These are a few of the reasons companies are increasingly electing to automate depalletization. Robots can work around the clock every day of the year, without human intervention. And they require less floor space in which to operate.



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About Vision Spectra



Vision Spectra is a global resource geared for the vision community, with real-world case studies of vision in action, comprehensive feature articles, and columns from experts in the field examining the trends that enable Industry 4.0.

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Featured Products



Machine Vision

Photonics Media Machine Vision is a book for anyone designing or selecting machine vision systems, and implementing or considering the use of machine vision for a specific application. This

engaging overview is a resource for designers, engineers, researchers, marketers and students looking for a broad survey of advancements in systems, components and processes, as well as some applications that are making good use of them.

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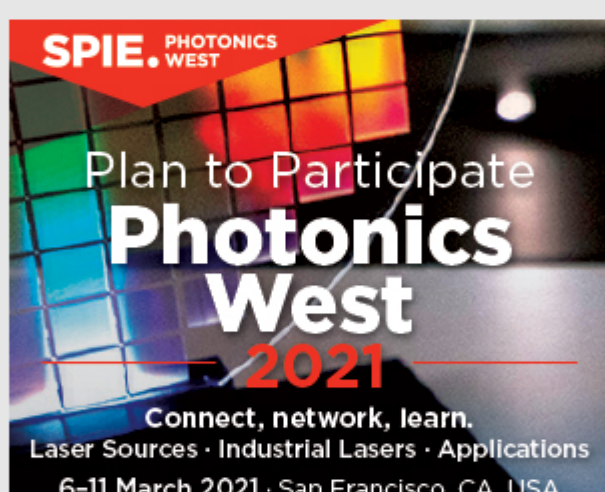
Remote Sensing

Photonics Media From space and the sky around us to firmly on the ground, remote sensing is providing an important view of our surroundings that can't be seen with our eyes alone.

A variety of optical technologies are having an impact on applications as diverse as agriculture and defense, weather and climate, and are now part of the payload on satellites, planes and drones, and riding in and even guiding vehicles on the highway.

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More Vision News

3D Mechanical Database Brings Together Components, Machine Learning

A team of mechanical engineers from Purdue University has undertaken the task of establishing a nearly 60,000-component, open-source, annotated database of 3D mechanical parts. The database aims to bring together applications in machine learning with the individual parts that enable those applications and more.



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Researchers Make Neural Network Show Its Work

A team of researchers at Duke University is addressing issues of transparency when it comes to the deep learning methods of neural computer vision systems. A technique the team has introduced aims to help to understand potential errors and biases in the "thinking" of deep learning algorithms.

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Wearable Camera Devices Enable Human Motion Capture, Bare-hand Interactions

Researchers from Tokyo Institute of Technology, Carnegie Mellon University, the University of St. Andrews, and the University of New South Wales have developed a wrist-worn device that is able to estimate 3D hand poses for virtual reality applications.

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Next Issue:

Features

Neuromorphic Imaging, Illumination for Telecentric Lenses, Warehouse/Bin picking and more.

Photonics Media is currently seeking technical feature articles on a variety of topics for publication in our magazine Vision Spectra. Please submit an informal 100-word abstract to visionspectra@photonics.com, or use our online submission form www.photonics.com/submitfeature.aspx.



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