Wednesday, May 22, 2024

Vision spectra

Bimonthly newsletter from Photonics Media featuring the latest advancements in and applications for vision systems – from sensors to software. Manage your Photonics Media membership at Vision-Spectra.com/subscribe.

3D Vision Transforms Robotic Piece Picking by Imaging Transparent Materials

E-commerce has had a profound effect on everyday life, making it possible for goods to be bought and delivered across the world. This infinitely large marketplace is available from smartphones everywhere, and fulfilling purchasing desires has become incredibly simple from the customer's end. But behind this consumer ease is a vast and complex world of supply chains and logistical wizardry. The integration of robotics in e-commerce fulfillment centers is playing a fundamental role in the continual improvement in terms of capability, efficiency, and consistency. **Read Article**

Machine Vision Improves Measurements of Farmed Fish

Fish farmers rely on accurately tracking fish growth and assessing when to harvest them, which poses a difficult challenge. Due to improvements in vision technology, image processing, and enhancements in AI, these tasks have gotten easier, benefiting both producers and consumers of seafood.

Read Article

Transparent, Shiny Materials Captured with 3D Scanning

Historically, using machine vision to detect both transparent and shiny objects has been an enormous hurdle to overcome. And while 3D-scanning technologies have evolved over the past few years, scanning these materials still presents a challenge to both manufacturers and camera developers alike. **Read Article**

Featured Products & Services

The Choice Among Integrators

Teledyne DALSA, Machine Vision OEM Components

Designed with new and powerful development tools, Sherlock 8 supports a wide variety of area-scan, line-scan, and infrared cameras to expand applications beyond traditional image inspection. With added support for AI model inference and 3D measurements, Sherlock 8 provides the capabilities to build more comprehensive inspection applications.

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3S Series 3D Sensors

Zebra Technologies Inc.

Zebra's 3S Series delivers best-in-class 3D scanning to address a broad range of machine vision automation applications. Using patented Parallel Structured Light technology, the 3S series scans areas with submillimeter resolution and accuracy for both static scenes and items in motion. Every 3S Series model is also bundled with Zebra Aurora Design Assistant™ or Zebra Aurora Vision Studio™ software to enable applications that were once impossible with standard technologies.

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Easily Replace Legacy Cameras, Code Readers

Balluff Inc.

Balluff's IDENT sensors with IO-Link read 1D and 2D barcodes and direct part marked codes while providing other innovative features, including built-in condition monitoring capabilities. Control of digital outputs allows for easy replacement of legacy cameras and laser-based barcode readers.

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High-End Cameras for Inspection

Chromasens GmbH

allPIXA evo cameras with CMOS sensors provide high performance in 8k, 10k, and 15k. They capture up to 4 lines simultaneously for high-quality RGB + Mono/NIR images, are equipped with 2 × 10 GigE or 4 × CoaXPress (GenICam compliant) and enable fast line rates up to 300 kHz for high-speed inspection.

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Smart 3D Line Confocal Imaging. Now in Coaxial Design

LMI Technologies Inc.

The all-new Gocator 4000 Series introduces coaxial line confocal sensor technology to complement LMI's existing Line Confocal product portfolio. These sensors provide high-speed, high-resolution, and versatile 3D inline inspection performance with outstanding angular range (Max Slope Angle Up to +/- 85 degrees) for manufacturing applications in Semiconductor, Consumer Electronics, EV Battery, and many more.

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Hyperspectral VIS-SWIR Lenses

Kowa American Corp.

Kowa's 1" C-Mount HC-VIS-SW lens series offers high-resolution imaging from visible to SWIR wavelengths, with IR-correction, low distortion, minimal chromatic aberration, and 12-MP resolution. Ideal for surveillance, hyperspectral imaging, agriculture, inspection, and more.

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In Case You Missed It

George Mason University Receives Air Force Funding for Imaging, Digital Twins Lab

Researchers from George Mason University have received $357,868 in funding from the Air Force Office of Scientific Research through the Defense University Research Instrumentation Program to establish the Neuromorphic Imaging and Digital Twins Lab. It will be headed by Harbir Antil, director of the Center for Mathematics and Artificial Intelligence, and Rainald Löhner, director of GMU's Computational Fluid Dynamics Lab. **Read Article**

Imageomics Applies AI and Vision Advancements to Biological Questions

Researchers at Ohio State University are pioneering the field of "imageomics." Founded on advancements in machine learning and computer vision, the researchers are using imageomics to explore fundamental questions about biological processes by combining images of living organisms with computer-enabled analysis. **Read Article**

Celestial Surface Mapping Tech Combines Established Techniques

An International Space Station (ISS) National Laboratory-sponsored initiative will test a 3D mapping technology to produce detailed maps of remote environments. The project will use NASA's free-flying robotic Astrobee system on the ISS. Per the initiative, called the Multi-Resolution Scanner, the technology project brings together Boeing and CSIRO, an Australian government agency for scientific research. **Read Article**

Next Issue:

Features

Sub-Pixel High Dynamic Range, SWIR, and Transportation/Traffic

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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