

# 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](http://Photonics.com/subscribe).

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### Evaluating Illumination Options for Telecentric Imaging

For machine vision applications requiring telecentric lenses, the proper illumination can be critical to the success of the imaging system. Achieving properly angled, even illumination can greatly affect the contrast of the image and the accuracy of measurements calculated from the image.

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### Neuromorphic Processing Set to Propel Growth in AI

Increasing volumes of data required for smart devices are prompting a reevaluation of computing performance, inspired by the human brain's capabilities for processing and efficiency. Smart devices must respond quickly, yet efficiently, thereby relying on processor cores that optimize energy consumption, memory access, and thermal performance.

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### 3D Vision Bolsters Robotic Bin Picking

For robots, unstructured bin picking has traditionally been challenging, if not effectively impossible. Part of the reason is mechanical, since getting a robotic arm into a bin and securing its grip on a part to pick can be difficult. Another problem, however, is the time needed for standard 2D vision to locate a part and position the robot to make a successful pick.

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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



#### AT IRSX: Unique App & Job Concept

##### AT - Automation Technology GmbH

AT - Automation Technology developed a smart infrared camera which impresses with a unique app and job concept. The variety of different apps which can be exchanged at any time and also the storage of product-specific jobs make the IRSX camera interesting for every thermal process control in the industry.

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#### Alluxa Ultra Series Filters and Coatings

##### Alluxa

Alluxa Ultra Series Filters, including Narrowband, Dichroic, UV, IR, and Notch filters, provide the highest performance optical thin film solutions available today. For example, the Ultra Series Flat Top Narrowband filters offer the narrowest bandwidths and squarest filter profiles in the industry.

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#### High Performance High-Speed Camera

##### Photron USA Inc.

The FASTCAM NOVA brings together unique CMOS image sensor technologies and extensive high-speed digital imaging expertise to provide a camera with the flexibility to be used in a wide variety of applications. Available in four different models, the FASTCAM NOVA offers 12-bit image recording rates...

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#### EURESYS - EasyLocate Analysis Library

##### Euresys SA

The next iteration of EURESYS' Deep Learning libraries, sees the integration of EasyLocate to the existing EasySegment & EasyClassify functionalities. Allowing objects detection & count even in sub-optimal exposition conditions.

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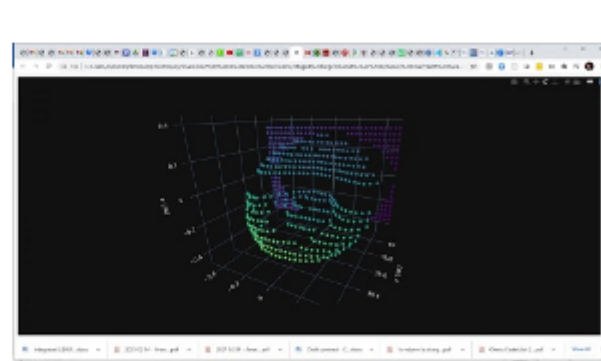
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## :: More Vision News

### Compact, Scalable Lidar Design Could Boost Applications Spanning Robotics, Health Care

Researchers from the University of Southampton, in collaboration with a team from San Francisco-based nanotechnology company PointCloud Inc., developed a scalable 3D lidar imaging system that the collaborators said matches and exceeds the performance and accuracy of most mechanical systems currently in use. The cost-effective device may provide a path to large-volume production of compact, inexpensive, and high-precision 3D imaging cameras for use in robotics, autonomous navigation systems, mapping of building sites to increase safety, and health care.

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### Image Recovery Method Shows Improved Compressive Sensing, Phase Retrieval Capabilities

Research from Lawrence Livermore National Laboratory (LLNL) has yielded a method of compressive image recovery that is trained on patches of images, more than full-size images. The method, called GPP (generative patch prior), is able to recover a wide variety of natural images. It compares favorably with other existing methods, the researchers said, in its ability to perform compressive image sensing and complete compressive phase retrieval tasks.

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### Machine Vision, Artificial Nose Combine to Monitor Cooked Chicken

Skoltech (Russia) scientists are working to combine machine vision with an artificial nose to ensure the proper level of doneness for cooked chicken. The technology aims to help restaurants monitor and automate cooking processes.

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### Features

Ruggedized Optics for Machine Vision, Computer Vision in Retail, Vision in Action, and more.

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