

Mycronic promises to eliminate majority of false calls with new deep learning system for 3D AOI

Mycronic, the leading Sweden-based electronics assembly solutions provider, has announced the launch of DeepReview, a new Automatic Defect Classification system that leverages the power of AI to dramatically reduce false call rates while improving first-pass-yield in 3D Automated Optical Inspection (AOI).

In the effort to further improve quality, flexibility and productivity in PCB assembly, Mycronic is now applying advanced neural networks to the highly data-intensive task of Automatic Defect Classification (ADC). Manufacturers seeking to apply full-coverage 3D optical inspection to a growing variety of products will welcome the release of DeepReview, which promises to alleviate review operators of 50-90% of the time spent reviewing false calls, depending on the proportion of eligible components.

Giving review operators the focus they deserve

For review operators, the fight against false defects can feel like an uphill battle. This is particularly true for manufacturers whose quality standards demand full test coverage, as every change in board design, component type or even material supply chains can generate an endless stream of new false calls.

"DeepReview is designed to automatically screen these false calls," says Alexia Vey, Product Manager for product line inspection. "It utilizes deep learning to identify component contexts and imaging variations, which a typical algorithm-based system would simply be unable to classify."

Eliminate the majority of false calls

Customers who periodically train the system on their own inspection imaging database can achieve a 50-100% reduction in potential false calls for eligible components. Since the system covers the majority of components on an average PCBA, this amounts to a reduction of up to 90% of the time spent reviewing false calls – time which can better be used to focus on identifying real defects.

"Our customers are laser-focused on preventing actual defects – and this is where human judgement is irreplaceable," says Clemens Jargon, Sr VP High Flex Division. "Thanks to powerful new capabilities offered by deep learning, the MYPro I series 3D AOI can offload some of the more tedious tasks, making it possible to apply full test coverage to any product mix without the fear of more false calls."

The AI journey continues

DeepReview follows in the footsteps of the company's pioneering machine learning solutions for SPI and AOI inspection. It combines a deep understanding of user needs in demanding high-mix and high-reliability electronics applications with the company's years of active research in applied AI for electronics manufacturing.

DeepReview allows manufacturers to retain full control over their own process quality standards. By periodically training the neural network on their own inspection data, customers can apply, adapt and refine their own defect classification models according to in-house inspection standards.

Built on a modern edge computing architecture, DeepReview handles various defect sources such as solder joints, bridges, offsets, and coplanarity. In the near future, DeepReview will benefit from an extended package library, enabling it to cover most electronic components.

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The MYWizard software, a game changer in 3D AOI programming, showcased at IPC APEX will feature a new deep learning algorithm to verify polarity marks.

To experience live demos and to learn more about DeepReview and other AI-powered inspections solutions from Mycronic, visit booth #742 at IPC APEX EXPO in Anaheim, California, April 9-11, 2024.

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About Mycronic

Mycronic is a Swedish high-tech company engaged in the development, manufacture and marketing of production equipment with high precision and flexibility requirements for the electronics industry. Mycronic's headquarters are located in Täby, north of Stockholm and the Group has subsidiaries in China, France, Germany, Japan, the Netherlands, Singapore, South Korea, United Kingdom, the United States and Vietnam. Mycronic is listed on Nasdaq Stockholm. www.mycronic.com

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