Synopsys and Morpho Collaborate to Accelerate Deep Learning Processing for Embedded Vision Applications

CNN-based Image Classification Software with DesignWare EV6x Vision Processor IP Delivers High Recognition Rate with Small Memory Footprint for Power-Constrained Devices

Disclaimer: GlobalFoundries acquired the Synopsys Processor Solutions business on June 1, 2026. Clickhere to learn more.

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Highlights:

- Combination of DesignWare EV6x Vision Processors with Morpho Scene Classifier software delivers real-time image analysis and classification for power-sensitive applications such as mobile and surveillance
- Deep learning implementation utilizes DesignWare EV6x Vision Processor's CNN engine to enable efficient, high accuracy classification without a GPU
- Pre-validated hardware-software solution reduces SoC development time and effort

Synopsys, Inc. (Nasdaq: SNPS) today announced a collaboration with Morpho, Inc. to optimize Morpho's computational photography software for Synopsys' DesignWare® EV6x Vision Processors. Morpho's Scene Classifier™ image classification technology uses deep learning algorithms to analyze visual input and automatically apply tags for classification, searchability and organization. Morpho is optimizing their software to take advantage of the EV6x Vision Processors' scalable hardware architecture, which includes up to four 512-bit vector DSPs and a fully programmable convolutional neural network (CNN) engine. The combined hardware-software solution enables designers to accelerate image classification and automated tagging tasks in their mobile and surveillance systems-on-chips (SoCs) while consuming significantly less power and memory resources than alternative implementations.

"We see growing demand for image processing software that takes advantage of deep learning networks to reduce computational resource requirements, particularly for battery-powered mobile devices," said Masayuki Urushiyama, executive vice president at Morpho Inc. "Optimizing our deep learning and image processing software for the DesignWare EV6x Vision Processors enables designers to implement high-quality image recognition and classification solutions that increase the vision processing capabilities of their SoCs and consume much less energy than traditional GPU approaches."

Morpho's Scene Classifier uses deep learning to "recognize" essential identifying features for automated, real-time image tagging. Morpho's portfolio of software algorithms includes high-precision scene recognition technology, motion detection, 360 VR stitching technology and other image processing technology. DesignWare EV6x Vision Processor IP is a family of fully programmable and configurable vision processors that integrate scalar, vector DSP and CNN processing units for highly accurate and fast vision processing. Supported by a comprehensive software programing environment including the ARC® MetaWare EV Toolkit, the EV6x Vision Processors offer SoC designers a flexible, power-efficient embedded vision solution that addresses a wide range of automotive, industrial and consumer applications.

"The emergence of deep learning for image classification, detection and recognition enables a new level of image processing efficiency in SoC designs," said John Koeter, vice president of marketing for IP at Synopsys. "By collaborating with Morpho to optimize their software for our EV6x Vision Processors, we are providing designers with a hardware-software solution that significantly improves the accuracy, performance and power consumption of image processing in power-sensitive applications."

Availability

The DesignWare EV6x Vision Processors are available now. The Morpho Scene Classifier software optimized for EV6x Vision Processors is planned to be available in Q4 2017.

About DesignWare IP

Synopsys is a leading provider of high-quality, silicon-proven IP solutions for SoC designs. The broad DesignWare IP portfolio includes logic libraries, embedded memories, embedded test, analog IP, wired and wireless interface IP, security IP, embedded processors and subsystems. To accelerate prototyping, software development and integration of IP into SoCs, Synopsys' IP Accelerated initiative offers IP prototyping kits, IP software development kits and IP subsystems. Synopsys' extensive investment in IP quality, comprehensive technical support and robust IP development methodology enables designers to reduce integration risk and accelerate time-to-market. For more information on DesignWare IP, visit www.synopsys.com/designware.

About Synopsys

Synopsys, Inc. (Nasdaq: SNPS) is the Silicon to Software™ partner for innovative companies developing the electronic products and software applications we rely on every day. As the world's 15th largest software company, Synopsys has a long history of being a global leader in electronic design automation (EDA) and semiconductor IP and is also growing its leadership in software security and quality solutions. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing applications that require the highest security and quality, Synopsys has the solutions needed to deliver innovative, high-quality, secure products. Learn more at www.synopsys.com.

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, including statements regarding the expected release and benefits of the combination of DesignWare EV6x Vision Processors with Morpho Scene Classifier software. Any statements that are not statements of historical fact may be deemed to be forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors that could cause actual results, time frames or achievements to differ materially from those expressed or implied in the forward-looking statements. Other risks and uncertainties that may apply are set forth in the "Risk Factors" section of Synopsys' most recently filed Quarterly Report on Form 10-Q. Synopsys undertakes no obligation to update publicly any forward-looking statements, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

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