

Synopsys Delivers Platform Architect Ultra to Enable the Next Wave of AI SoCs

Enables Architecture Exploration for Advanced AI SoCs to Meet Optimal Performance and Power Goals Targeted for Cloud and Edge Applications

MOUNTAIN VIEW, Calif., Oct. 15, 2018 /PRNewswire/ --

Highlights:

- Intelligent mapping and optimization of the target CNN to an AI chip architecture is essential to meet tight performance and power trade-offs
- Platform Architect Ultra's unique technology, features, and AI reference system enable integration, analysis and optimization of CNN workload models on AI architectures
- AI SoC teams use Platform Architect Ultra to make smart architectural trade-off decisions to eliminate late changes in SoC design

Synopsys, Inc. (Nasdaq: SNPS) today announced the availability of its next-generation architecture exploration, analysis, and design solution, Platform Architect™ Ultra, to address the system challenges of artificial intelligence (AI)-enabled system-on-chips (SoCs). Architects of neural network enabled SoCs need to carefully balance the required convolutional neural network (CNN) throughput against the available power and performance budget that data center or embedded devices can sustain. Platform Architect Ultra flexibly maps CNN algorithms and workloads to explore processing and memory architecture options, enabling architects to analyze, select, optimize, and tune algorithms and architectures for performance and power requirements.

"Designing leading-edge AI chips for our automotive SoCs requires an architecture with the highest performance and energy efficiency," said Takashi Abe, manager at Basis Electronic R&D Division at Denso. "Platform Architect Ultra allows us to quickly assemble an accurate model of our architecture concepts, test these with realistic AI workloads, and efficiently compare hundreds of architecture and IP alternatives, ensuring that our automotive SoCs deliver the absolute optimal performance and power."

"Designers are faced with having to integrate actual software to further validate and substantiate their architecture design assumptions," said Bill Neifert, senior director of Market Development at Arm. "Synopsys Platform Architect Ultra enables our customers to refine their candidate architecture with Arm® Cycle Models to gain a realistic, system-level view of critical functionality to validate SoC performance while executing the software workloads of real AI benchmarks."

Synopsys' Platform Architect Ultra, developed in collaboration with AI SoC leaders, is the next-generation release of Platform Architect, embedding the latest technology to efficiently perform dynamic simulation of multicore architectures. Platform Architect Ultra introduces SMART Tables for context-sensitive data entry and error checking, and SMART Charts for visual root-cause sensitivity analysis of candidate architectures. It also introduces a hierarchical design concept for fast creation and packaging of a design, including ready-to-map workloads, architecture models, and AI reference system, including CNN frameworks such as Caffe and TensorFlow, enabling architects to quickly analyze and optimize a proposed architecture design.

"Through our collaboration with leading AI SoC companies, we know that architecture teams must carefully balance power, performance, and programmability to succeed in this highly competitive market," said Eshel Haritan, vice president of R&D in the Synopsys Verification Group. "Platform Architect Ultra's parallelized exploration, performance, and power optimization capabilities allow designers of neural network architectures and algorithms to quickly find a balanced architecture and eliminate late changes in SoC design."

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.

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