Synopsys and SiMa.ai Announce Strategic Collaboration to Accelerate Development of Automotive Edge AI Solutions

Joint Solution to Speed SoC Development for Next-generation ADAS and IVI Applications

SUNNYVALE, Calif. and SAN JOSE, Calif., Dec. 17, 2024 /PRNewswire/ -- Synopsys (Nasdaq: SNPS) and SiMa.ai today announced a strategic collaboration to jointly deliver a new solution for automotive companies to accelerate the development of workload-specific silicon and software needed to power artificial intelligence-enabled features in next-generation automobiles. The solution will combine Synopsys' best-in-class EDA, automotive-grade IP, and hardware-assisted verification solutions with SiMa.ai's leading machine learning accelerator (MLA) IP and complete ML software stack application development environment for maximum customization of IP, subsystems, chiplets, and SoCs.

Advanced Driver Assistance Systems (ADAS) and In-vehicle Infotainment (IVI) are emerging as key differentiators for automakers with a tremendous diversity in applications. The advent of generative artificial intelligence (GenAI) features in these applications requires artificial intelligence (AI) at the edge to deliver real-time, multi-modal in-car experiences. However, current software-defined vehicle (SDV) architectures are not equipped to support related demands for the diversity of applications and the required compute, performance, and reliability. Automakers need AI-ready, workload-verified, power-efficient software architectures to compete in this new environment. Further, they need hardware-software co-design solutions, from silicon –to– systems, to reduce development costs and de-risk start-of-production timelines.

Synopsys is a trusted partner to the worldwide automotive ecosystem with more than 50 OEMs and Tier 1 suppliers using Synopsys virtual prototyping technologies, and more than 1,000 virtual models developed from SoC IP to board-level ICs and ASICs. SiMa.ai is the software-centric company that specializes in developing high performance, power-efficient machine learning system on chip (MLSoC) solutions for the embedded edge. The SiMa.ai tech stack emphasizes flexibility, offering support for the widest number of models, sensors and applications possible, and automatically optimizes them for peak performance. The integrated Synopsys and SiMa.ai solution will be designed to enable:

- **Early architecture exploration:** Capability to guide automotive design engineers to optimally-choose performance, power, and software application requirements for custom or 3rd party SoC development.
- **Shift-left software development:** The solution will be optimized for multi-modal functions and GenAI, as well as to provide an end-to-end workflow including virtual prototyping and emulation to accelerate software/hardware integration and speed time to market.
- **Cost-effective and differentiated in-vehicle experiences:** Silicon-proven building blocks and subsystems for high-performance automotive ML SoCs and chiplets that are fully customizable to support diverse workloads, integrating SiMa.ai's leading, easy-to-use ML software and tools.
- **Continuous upgradeability of automotive edge AI solutions:** Applications with AI capabilities can be developed to support both current and future requirements. In addition, virtual prototypes can be used to develop and test over-the-air updates.

"Our collaboration with SiMa.ai will provide automotive companies a significant step forward in modernizing their hardware/software co-design processes to meet demand for advanced, in-car experiences that are increasingly costly and complex to deliver," said Ravi Subramanian, head of the Synopsys Product Management and Markets Group. "Our leadership in architecture exploration, IP, and hardware-assisted verification, combined with SiMa.ai's innovative performance and power-optimized ML capabilities, will enable customers to differentiate while continuing to meet stringent cost considerations and industry standards."

"Collaborating closely with Synopsys allows us to provide automotive manufacturers with complete, optimized solutions that accelerate their development cycles," said Krishna Rangasayee, Founder and CEO, SiMa.ai. "The SiMa.ai MLSoC platform was designed for best possible performance at lowest power consumption across a diverse set of applications—that was the missing piece in the puzzle to make future cars so much smarter and safer than what we have today. When combined with Synopsys' industry-leading IP and software, we will deliver a powerful foundation for innovation across auto OEMs in autonomous driving and in-vehicle experiences."

Meet with Synopsys and SiMa.ai at CES 2025
Join Synopsys and SiMa.ai at CES 2025, January 7-10, 2025, to learn more about how we are collaborating to transform the development of automotive edge AI solutions. Contact SynopsysAutomotive@synopsys.com to schedule a meeting onsite.

About Synopsys
Catalyzing the era of pervasive intelligence, Synopsys, Inc. (Nasdaq: SNPS) delivers trusted and comprehensive silicon to systems design solutions, from electronic design automation to silicon IP and system verification and validation. We partner

closely with semiconductor and systems customers across a wide range of industries to maximize their R&D capability and productivity, powering innovation today that ignites the ingenuity of tomorrow. Learn more at www.synopsys.com.

About SiMa.ai
SiMa.ai is the software-centric, embedded edge machine learning system-on-chip (MLSoC) company. SiMa.ai delivers ONE Platform for Edge AI that flexibly adjusts to any framework, network, model, sensor, or modality. Edge ML applications that run completely on the SiMa.ai MLSoC and Modalix product family see a tenfold increase in performance and energy efficiency, bringing higher fidelity intelligence to ML use cases spanning computer vision to generative AI, in minutes. With SiMa.ai, customers unlock new paths to revenue and significant cost savings to innovate at the edge across automotive, industrial manufacturing, retail, aerospace, defense, agriculture, and healthcare. Learn more at www.sima.ai.

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