Ansys Accelerates Autonomous Vehicle Development with NVIDIA Omniverse

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Support for OpenUSD and Integration of Ansys AVxcelerate Sensors within NVIDIA DRIVE Sim, powered by NVIDIA Omniverse, improves development and validation of AV perception systems

/ Key Highlights

- In Q1 2024, Ansys AVxcelerate Sensors will be accessible within NVIDIA DRIVE Sim, a scenario-based autonomous vehicle (AV) simulator powered by NVIDIA Omniverse
- Ansys will augment NVIDIA DRIVE Sim's powerful scenario generation capabilities to enhance advanced driver assistance systems (ADAS) and AV perception development with predictively accurate physics solvers for camera, lidar, radar, and thermal camera sensors

PITTSBURGH, Jan. 4, 2024 /PRNewswire/ -- Ansys (NASDAQ: ANSS) announced that Ansys AVxcelerate Sensors will be accessible within NVIDIA DRIVE Sim, a scenario-based AV simulator powered by NVIDIA Omniverse, a platform for developing Universal Scene Description (OpenUSD) applications for industrial digitalization. The integration will provide users access to high-fidelity sensor simulation outputs generated with Ansys AVxcelerate Sensors for the training and validation of perception ADAS/AV systems.

Ensuring AV safety and reliability is among the most significant challenges engineers face today. Sensor suites and software must be extensively tested and validated in real-world driving scenarios — including critical edge cases — to safely navigate roadways. The scale of this challenge is too large for physical on-road testing alone, which would require an estimated billions of miles. The future of AVs depends on highly realistic, scalable simulations to test and validate AV sensor and software performance in a controlled virtual environment.

The combined strengths of NVIDIA and Ansys narrow the gap between reality and simulation. Ansys AVxcelerate Sensors will augment NVIDIA DRIVE Sim's high-fidelity, scalable 3D environments for scenario generation with Ansys' predictively accurate physics solvers for camera, lidar, and radar sensors. By harnessing the power of this integrated solution, NVIDIA DRIVE Sim users with an AVxcelerate Sensors license will be able to develop, train, test, and validate the performance of AV perception systems while saving time and cost. The platform harnesses NVIDIA's high-performance GPU capabilities and AI, powering rapid prototyping and efficient algorithm refinement of AVs.

"Integrating Ansys AVxcelerate Sensors simulation with DRIVE Sim offers developers greater flexibility to develop, test, and validate their autonomous vehicle software," said Zvi Greenstein, vice president of autonomous vehicle infrastructure at NVIDIA.

An open ecosystem approach is foundational to collaboration. NVIDIA Omniverse enables users to develop OpenUSD-based 3D workflows. OpenUSD's flexibility and modularity allows developers to not only build scalable simulations but also acts as a data factory for AI model training. Developers can harness Omniverse to build their custom synthetic data generation pipelines and generate annotated data to train the on-board computer vision models. The connection with Ansys AVxcelerate Sensors, built with application programming interfaces (APIs), facilitates a seamless integration of Ansys physics solvers into NVIDIA's 3D virtual world.

"Perception is crucial for AV systems, and it requires validation through real-world data for the AI to make smart, safe decisions," said Walt Hearn, senior vice president of worldwide sales and customer excellence at Ansys. "Combining Ansys AVxcelerate Sensors with NVIDIA DRIVE Sim, powered by Omniverse, provides a rich playground for developers to test and validate critical environmental interactions without limitations, paving the way for OEMs to accelerate AV technology development."

Visit Ansys at CES in Las Vegas from Jan. 9-12, 2024, at booth #6500 to learn more.

/ About Ansys

Our Mission: Powering Innovation that Drives Human Advancement™

When visionary companies need to know how their world-changing ideas will perform, they close the gap between design and reality with Ansys simulation. For more than 50 years, Ansys software has enabled innovators across industries to push boundaries by using the predictive power of simulation. From sustainable transportation to advanced semiconductors, from satellite systems to life-saving medical devices, the next great leaps in human advancement will be powered by Ansys.

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