

Tier IV accelerates autonomous driving collaboration with Nvidia using Alpamayo and Cosmos

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Tier IV is enhancing its open-source Autoware with Nvidia's AI models and data platforms to advance Level 4 autonomous driving

Tier IV is enhancing its strategic collaboration with Nvidia to reshape Level 4 autonomous driving. This partnership involves incorporating Nvidia Alpamayo, which includes AI models, simulation frameworks and physical AI datasets, and Nvidia Cosmos, comprising open-world foundation models, guardrails and data processing

libraries. These elements will be integrated into Autoware, Tier IV's open-source software for autonomous driving, and the Co-MLOps platform, a collaborative data platform designed for AI development. This collaboration also involves an autonomous bus deployment initiative with Isuzu and Nvidia, focusing on safe and scalable autonomous driving solutions.



Source: Getty Images

As an integral contributor to Autoware, Tier IV is leveraging modern technologies, including AI-based software stacks, for Level 4 autonomous driving. The company was among the first to adopt Nvidia Alpamayo 1, incorporating it into Autoware to tackle complex scenarios with advanced reasoning processes and improve explainability via language understanding. This model, consisting of 10 billion parameters, introduces a reasoning layer into the driving stack, employing chain-of-thought processing for interpreting intricate scene dynamics. These advancements allow Tier IV to enhance transparency and traceability in AI decision-making, achieving human-like judgment in navigating unstructured and complex environments. Tier IV plans to test the new models presented at Nvidia GTC 2026 and integrate them into Autoware to expedite safe and scalable commercial deployments.

In the real-world vehicle data space, Tier IV is also expanding its Co-MLOps platform with NVIDIA Cosmos. Since the platform's inception in 2024, Tier IV has spearheaded global efforts to disseminate large-scale data for developing and expanding autonomous driving AI. By merging Nvidia Cosmos with the Co-MLOps platform, Tier IV aims to enhance the open-source software's abilities to handle rare, unpredictable edge cases in autonomous driving that surpass predefined rules and standard training scenarios.

Nvidia Cosmos features various core functions, including Cosmos-Predict, which generates edge cases from multimodal prompts to create synthetic data for addressing detection challenges difficult to capture in real environments. Cosmos-Transfer offers advanced data augmentation by transforming labeled data into diverse environmental conditions, such as heavy rain or varying times of day, using images generated by the automated labeling infrastructure. Lastly, Cosmos-Reason effectively searches, validates, and summarizes extensive driving data using a vision-language model that captures the essence of the physical world.

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CONTACTS

The Americas

+1 877 863 1306

Europe, Middle East & Africa

+44 20 7176 1234

Asia-Pacific

+852 2533 3565

www.spglobal.com/mobility

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