

NVIDIA Provides Transportation Industry Access to Its Deep Neural Networks for Autonomous Vehicles

Developers Also Gain Access to NVIDIA Advanced Learning Tools to Leverage DNNs Across Multiple Datasets While Preserving Data Privacy

NVIDIA today announced that it will provide the transportation industry with access to its [NVIDIA DRIVE™](#) deep neural networks (DNNs) for autonomous vehicle development on the [NVIDIA GPU Cloud \(NGC\) container registry](#).

NVIDIA DRIVE has become a de facto standard for AV development, used broadly by automakers, truck manufacturers, robotaxi companies, software companies and universities. Now, NVIDIA is providing access of its pre-trained AI models and training code to AV developers. Using a suite of NVIDIA AI tools, the ecosystem can freely extend and customize the models to increase the robustness and capabilities of their self-driving systems.

"The AI autonomous vehicle is a software-defined vehicle required to operate around the world on a wide variety of datasets," said Jensen Huang, founder and CEO of NVIDIA. "By providing AV developers access to our DNNs and the advanced learning tools to optimize them for multiple datasets, we're enabling shared learning across companies and countries, while maintaining data ownership and privacy. Ultimately, we are accelerating the reality of global autonomous vehicles."

AI is central to the development of safe, self-driving cars -- allowing them to perceive and react in real time to their surroundings for intelligent operation. At its core are dozens of DNNs that tackle redundant and diverse tasks, ensuring accurate perception, localization and path planning.

"NVIDIA leads the world in developing the deepest and broadest suite of DNNs and AI tools for the transportation industry," said Luca De Ambroggi, senior research director of Artificial Intelligence at IHS Markit. "Making these algorithms available to others, along with the tools and workflow infrastructure to customize them, will help enable the deployment of safe autonomous transportation."

NVIDIA has spent years developing and training DNNs that run on the [NVIDIA DRIVE AGX™ platform](#), turning raw sensor data into a deep understanding of the world. These DNNs cover such tasks as traffic-light and sign detection, object detection (for vehicles, pedestrians, bicycles) and path perception, as well as gaze detection and gesture recognition inside the vehicle.

Advanced Learning Tools for AI Development:

In addition to providing access to the DNNs, NVIDIA announced the availability of a suite of advanced tools so developers can customize and enhance NVIDIA's DNNs using their own datasets and target feature set. These tools allow the training of DNNs using active learning, federated learning and transfer learning:

- Active learning improves model accuracy and reduces data collection costs by automating data selection using AI, rather than manual curation.
- [Federated learning](#) enables companies to utilize datasets across countries and with other companies while maintaining data privacy and protecting their intellectual property.
- [Transfer learning](#) gives DRIVE customers the ability to speed development of their perception software by leveraging NVIDIA's significant investment in AV development, then further developing these networks for their own applications and target capability.

By providing access to its AI models on NGC and introducing advanced training tools, NVIDIA strengthens its end-to-end platform for AV development and deployment.

About NVIDIA

[NVIDIA's](#) (NASDAQ: NVDA) invention of the GPU in 1999 sparked the growth of the PC gaming market, redefined modern computer graphics and revolutionized parallel computing. More recently, GPU deep learning ignited modern AI — the next era of computing — with the GPU acting as the brain of computers, robots and self-driving cars that can perceive and understand the world. More information at <http://nvidianews.nvidia.com/>.

Certain statements in this press release including, but not limited to, statements as to: NVIDIA providing the transportation industry with full source access to NVIDIA DRIVE deep neural networks for autonomous vehicle development on the NVIDIA GPU Cloud (NGC) container registry; the benefits and impact of NVIDIA DRIVE, providing partners source access of NVIDIA's deep neural networks, and NVIDIA's advanced learning tools for AI development; NVIDIA accelerating the reality of global autonomous vehicles; AI as central to the development of safe, self-driving cars; NVIDIA leading the world in developing the deepest and broadest suite of DNNs and AI tools for the transportation industry are forward-looking statements that are subject to risks and uncertainties that could cause results to be materially different than expectations. Important factors that could cause actual results to differ materially include: global economic conditions; our reliance on third parties to manufacture, assemble, package and test our products; the impact of technological development and competition; development of new products and technologies or enhancements to our existing product and technologies; market acceptance of our products or our partners' products; design, manufacturing or software defects; changes in consumer preferences or demands; changes in industry standards and interfaces; unexpected loss of performance of our products or technologies when integrated into systems; as well as other factors detailed from time to time in the most recent reports NVIDIA files with the Securities and Exchange Commission, or SEC, including, but not limited to, its annual report on Form 10-K and quarterly reports on Form 10-Q. Copies of reports filed with the SEC are posted on the company's website and are available from NVIDIA without charge. These forward-looking statements are not guarantees of future performance and speak only as of the date hereof, and, except as required by law, NVIDIA disclaims any obligation to update these forward-looking statements to reflect future events or circumstances.

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