



NVIDIA Announces Omniverse Replicator Synthetic-Data-Generation Engine for Training AIs

First Omniverse Replicator-Based Applications, DRIVE Sim and Isaac Sim, Accelerate Development of Autonomous Vehicles and Robots

GTC—NVIDIA today announced NVIDIA Omniverse Replicator, a powerful synthetic-data-generation engine that produces physically simulated synthetic data for training deep neural networks.

In its first implementations of the engine, the company introduced two applications for generating synthetic data: one for NVIDIA DRIVE Sim™, a virtual world for hosting the digital twin of autonomous vehicles, and another for NVIDIA Isaac Sim™, a virtual world for the digital twin of manipulation robots.

These two replicators allow developers to bootstrap AI models, fill real-world data gaps, and label the ground truth in ways humans cannot. Data generated in these virtual worlds can cover a broad range of diverse scenarios, including rare or dangerous conditions that can't regularly or safely be experienced in the real world.

Autonomous vehicles and robots built using this data can master skills across an array of virtual environments before applying them in the physical world.

"Omniverse Replicator allows us to create diverse, massive, accurate datasets to build high-quality, high-performing and safe datasets, which is essential for AI," said Rev Lebedian, vice president of simulation technology and Omniverse engineering at NVIDIA. "While we have built two domain-specific data-generation engines ourselves, we can imagine many companies building their own with Omniverse Replicator."

Omniverse Replicator augments costly, laborious human-labeled real-world data, which can be error prone and incomplete, with the ability to create large and diverse physically accurate data tailored to the needs of AV and robotics developers. It also enables the generation of ground truth data that is difficult or impossible for humans to label, such as velocity, depth, occluded objects, adverse weather conditions or tracking the movement of objects across sensors.

Already an invaluable data-generation engine for NVIDIA's DRIVE autonomous vehicle and Isaac robotics teams, Omniverse Replicator will be made available next year to developers to build domain-specific data-generation engines.

Omniverse Replicator is part of [NVIDIA Omniverse](#), a virtual world simulation and collaboration platform for 3D workflows. Learn more about Omniverse Replicator for [DRIVE Sim](#) and for [Isaac Sim](#).

Register for free to learn more about NVIDIA Omniverse during [NVIDIA GTC](#), taking place online through Nov. 11. Watch NVIDIA founder and CEO Jensen Huang's [GTC keynote address](#) streaming on Nov. 9 and in replay.

About NVIDIA

[NVIDIA](#)'s (NASDAQ: NVDA) invention of the GPU in 1999 sparked the growth of the PC gaming market and has redefined modern computer graphics, high performance computing and artificial intelligence. The company's pioneering work in accelerated computing and AI is reshaping trillion-dollar industries, such as transportation, healthcare and manufacturing, and fueling the growth of many others. More information at <https://nvidianews.nvidia.com/>.

Certain statements in this press release including, but not limited to, statements as to: the benefits, impact, features, performance, and availability of NVIDIA Omniverse Replicator, NVIDIA DRIVE Sim, NVIDIA Isaac Sim and NVIDIA Omniverse; high-quality, high-performing and safe datasets being essential for AI; many companies many companies building their own domain-specific data-generation engines with Omniverse Replicator; and Omniverse Replicator enabling the generation of ground truth data that is difficult or impossible for humans to label 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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