



NVIDIA Announces Omniverse Microservices to Supercharge Physical AI

NVIDIA Omniverse Cloud Sensor RTX Generates Synthetic Data to Speed AI Development of Autonomous Vehicles, Robotic Arms, Mobile Robots, Humanoids and Smart Spaces

CVPR—NVIDIA today announced [NVIDIA Omniverse Cloud Sensor RTX™](#), a set of microservices that enable physically accurate sensor simulation to accelerate the development of fully autonomous machines of every kind.

Sensors, which comprise a growing, multibillion-dollar industry, provide autonomous vehicles, humanoids, industrial manipulators, mobile robots and smart spaces with the data needed to comprehend the physical world and make informed decisions. With NVIDIA Omniverse Cloud Sensor RTX, developers can test sensor perception and associated AI software at scale in physically accurate, realistic virtual environments before real-world deployment — enhancing safety while saving time and costs.

“Developing safe and reliable autonomous machines powered by generative physical AI requires training and testing in physically based virtual worlds,” said Rev Lebedian, vice president of Omniverse and simulation technology at NVIDIA. “NVIDIA Omniverse Cloud Sensor RTX microservices will enable developers to easily build large-scale digital twins of factories, cities and even Earth — helping accelerate the next wave of AI.”

Supercharging Simulation at Scale

Built on the [OpenUSD](#) framework and powered by [NVIDIA RTX™](#) ray-tracing and neural-rendering technologies, Omniverse Cloud Sensor RTX accelerates the creation of simulated environments by combining real-world data from videos, cameras, radar and lidar with synthetic data.

Even for scenarios with limited real-world data, the microservices can be used to simulate a broad range of activities, such as whether a robotic arm is operating correctly, an airport luggage carousel is functional, a tree branch is blocking a roadway, a factory conveyor belt is in motion, or a robot or person is nearby.

Research Wins Drive Real-World Deployment

The Omniverse Cloud Sensor RTX announcement comes at the same time as NVIDIA’s first-place win at the Computer Vision and Pattern Recognition conference’s Autonomous Grand Challenge for [End-to-End Driving at Scale](#).

NVIDIA researchers’ winning [workflow](#) can be replicated in high-fidelity simulated environments with Omniverse Cloud Sensor RTX — giving autonomous vehicle (AV) simulation developers the ability to test self-driving scenarios in physically accurate environments before deploying AVs in the real world.

Ecosystem Access and Availability

[Foretellix](#) and MathWorks are among the first software developers to which NVIDIA is providing Omniverse Cloud Sensor RTX access for AV development.

Omniverse Cloud Sensor RTX will also enable sensor manufacturers to validate and integrate digital twins of their sensors in virtual environments, reducing the time needed for physical prototyping.

[Sign up](#) for early access to Omniverse Cloud Sensor RTX, which will be available later this year.

About NVIDIA

[NVIDIA](#) (NASDAQ: NVDA) is the world leader in accelerated computing.

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