NVIDIA Expands Isaac Software Access and Jetson Platform Availability, Accelerating Robotics From Cloud to Edge

Coming to Microsoft Azure, Isaac Sim on Omniverse Cloud provides scalable simulation; Jetson Orin lineup, now in production, delivers accelerated computing capabilities for robotics.

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NVIDIA announced today at GTC that Omniverse Cloud will be hosted on Microsoft Azure, increasing access to Isaac Sim , the company's platform for developing and managing AI-based robots.

The company also said that a full lineup of Jetson Orin modules is now available, offering a performance leap for edge AI and robotics applications.

"The world's largest industries make physical things, but they want to build them digitally," said NVIDIA founder and CEO Jensen Huang during the GTC keynote. "Omniverse is a platform for industrial digitalization that bridges digital and physical."

Building robots in the real world requires creating datasets from scratch, which is time consuming and expensive and slows deployments.

That's why developers are turning to synthetic data generation (SDG), pretrained AI models , transfer learning and robotics simulation to drive down costs and accelerate deployment timelines.

The Omniverse Cloud platform-as-a-service, which runs on NVIDIA OVX servers, puts advanced capabilities into the hands of Azure developers everywhere. It enables enterprises to scale robotics simulation workloads, such as SDG, and provides continuous integration and continuous delivery for devops teams to work in a shared repository on code changes while working with Isaac Sim.

Isaac Sim is a robotics simulation application and SDG tool that drives photorealistic, physically accurate virtual environments. Isaac Sim, powered by the NVIDIA Omniverse platform, enables global teams to remotely collaborate to build, train, simulate, validate and deploy robots.

Making Isaac Sim accessible in the cloud allows teams to work together more effectively with access to the latest robotics tools and software development kits. Omniverse Cloud gives enterprises more options in the cloud with Azure, in addition to the existing cloud-based methods of using Isaac Sim for self-managed containers, or with using it on virtual workstations or fully managed services such as AWS RoboMaker.

And with access to Omniverse Replicator , an SDG engine in Isaac Sim, engineers can build production-quality synthetic datasets to train robust deep learning perception models.

Amazon uses Omniverse to automate, optimize and plan its autonomous warehouses with digital twin simulations before deployment into the real world. With Isaac Sim, Amazon Robotics is also improving the capabilities of Proteus, its latest autonomous mobile robot (AMR). This helps the online retail giant fulfill thousands of orders in a cost- and time-efficient manner.

Working with automation company idealworks, BMW Group uses Isaac Sim in Omniverse to generate synthetic data and run scenarios for testing and training AMRs and factory robots.

NVIDIA is developing across the AI tools spectrum — from computing in the cloud with simulation like Isaac Sim to at the edge with the Jetson platform — accelerating robotics adoption across industries.

NVIDIA Jetson Orin-based modules are now available in production to support a complete range of edge AI and robotics applications. This includes the Jetson Orin Nano — which provides up to 40 trillion operations per second (TOPS) of AI performance in the smallest Jetson module — up to the Jetson AGX Orin, delivering 275 TOPS for advanced autonomous machines.

The new Jetson Orin Nano Developer Kit delivers 80x the performance when compared with the previous-generation Jetson Nano, enabling developers to run advanced transformer and robotics models. And with 50x the performance per watt, developers getting started with the Jetson Orin Nano modules can build and deploy power-efficient, entry-level AI-powered robots, smart drones, intelligent vision systems and more.

Application-specific frameworks like NVIDIA Isaac ROS and DeepStream , which run on the Jetson platform, are closely integrated with cloud-based frameworks like Isaac Sim on Omniverse and NVIDIA Metropolis . And using the latest NVIDIA TAO Toolkit for fine-tuning pretrained AI models from the NVIDIA NGC catalog reduces time to deployment for developers.

More than 1 million developers and over 6,000 customers have chosen the NVIDIA Jetson platform, including Amazon Web Services, Canon, Cisco, Hyundai Robotics, JD.com, John Deere, Komatsu, Medtronic, Meituan, Microsoft Azure, Teradyne and TK Elevator.

Companies adopting the new Orin-based modules include Hyundai Doosan Infracore, Robotis, Seyeon Tech, Skydio, Trimble, Verdant and Zipline.

More than 70 Jetson ecosystem partners are offering Orin-based solutions, with a wide range of support from hardware , AI software and application design services to sensors , connectivity and developer tools.

The full lineup of Jetson Orin-based production modules is now available . The Jetson Orin Nano Developer Kit will start shipping in April.

Learn more about NVIDIA Isaac Sim , Jetson Orin , Omniverse Enterprise and Metropolis .

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