

# NVIDIA Announces Major Release of Omniverse With New USD Connectors and Tools, Simulation Technologies and Developer Frameworks

**Company Unveils Avatar Cloud Engine; DeepSearch AI 3D Search Engine; NeuralVDB AI Upgrade for Sparse Volume Data; Connection to NVIDIA Modulus for Scientific Digital Twins; Updates to PhysX, MDL and More**

**SIGGRAPH**—NVIDIA today announced a new range of developer frameworks, tools, apps and plugins for [NVIDIA Omniverse™](#), the platform for building and connecting metaverse worlds based on [Universal Scene Description \(USD\)](#).

The expansion of Omniverse includes several AI-powered tools and features that deliver artists, developers and engineers the power to build virtual worlds and content easier than ever, and more seamlessly connect to today's leading 3D applications, including PTC Creo, SideFX Houdini, Unity and solutions from the Siemens Xcelerator platform.

Omniverse, a multi-GPU scalable computing platform for building virtual worlds, is already in use by some 700 leading companies globally to enhance [architectural](#) and product design, simplify [visual effects workflows](#) and build [digital twins](#) of factories, cities and the planet.

"The metaverse is a multitrillion-dollar opportunity that organizations know they can't ignore, but many struggle to see a clear path forward for how to engage with it," said Rev Lebedian, vice president of Omniverse and simulation technology at NVIDIA. "NVIDIA Omniverse closes the gap between the physical and virtual worlds, and these new tools, technologies and collaborations make it possible to leap into the 3D internet today."

## New Applications and Frameworks

In addition to launching the [NVIDIA Omniverse Avatar Cloud Engine](#) — a suite of cloud-native AI models and services for building and deploying lifelike virtual assistants and digital humans — the company unveiled the following platform updates:

- **Omniverse Kit** — a toolkit for building native Omniverse extensions and applications:
  - Major updates to [PhysX®](#) in Omniverse, including real-time, multi-GPU, scalable soft body and particle cloth simulation, helping bring more physical accuracy to virtual worlds and objects.
  - **New OmniLive Workflows** — an overhaul of USD-based collaboration in Omniverse, bringing increased speed and performance to multiple app 3D workflows, and enabling non-destructive USD workflows to make collaboration between artists and developers easier than ever.
- [Omniverse Audio2Face](#) — an AI tool that can create facial animations directly from an audio file introduces a major leap in AI-driven animation with the new ability to infer and generate realistic emotions and animates all facial features.
- [Omniverse Machinima](#) — an app for easily building 3D cinematics and animated films launches hundreds of new, free 3D assets from *Post Scriptum*, *Beyond the Wire* and *Shadow Warrior 3* games, plus a suite of new AI animation tools like Audio2Gesture, an AI that generates realistic arm and body motion from an audio file.
- **Omniverse DeepSearch** — now available for [Omniverse Enterprise](#) customers, DeepSearch helps teams use AI to intuitively and accurately search through massive, untagged 3D asset databases of visuals using natural language like "red, rusty barrel." DeepSearch is a game-changing tool for game developers or VFX studios who have hundreds of thousands of untagged assets that pose an immense challenge to search through. The award-winning studio [Industrial Light & Magic](#) is leveraging DeepSearch to unlock its ever-growing library of hundreds of thousands of environment assets.

Additionally, NVIDIA Modulus, a physics machine-learning framework, is newly available as an [Omniverse Extension](#). Delivering near-real-time performance, Modulus-trained Physics ML models are [4,000x](#) and even 100,000x faster depending on the application, while providing unprecedented accuracy closer to high-fidelity simulations. Modulus is one of the cornerstones of scientific digital twins, including [NVIDIA's Earth-2](#).

## Building the Metaverse with USD Connectors

As part of a collaborative effort with its partners in the industrial, design, simulation and CAD software ecosystems, NVIDIA also unveiled 11 new [Omniverse Connectors](#), which are USD-based plugins, further opening Omniverse workflows to companies in the industrial and scientific communities. These bring the total number of Connectors to the Omniverse USD ecosystem to 112.

Newly available in beta are Connectors for PTC Creo, Visual Components and SideFX Houdini. NVIDIA announced the ongoing development of Connectors for Blender, Autodesk Alias and Autodesk Civil 3D, Siemens JT, SimScale, Open Geospatial Consortium, and Unity, which will further unlock metaverse workflows for manufacturing, engineering and design

companies.

NVIDIA also released major updates to the core simulation technologies that represent materials, physics and light in metaverse worlds.

- [NVIDIA MDL](#) — which has served for 10 years as the material standard for physically accurate representation of 3D materials — is now fully open sourced, enabling developers to bring material definition language support to any renderer.
- [NeuralVDB](#), coming soon to beta, is the next evolution of OpenVDB and brings AI and GPU optimization to sparse volume datasets and reduces memory footprint of these massive datasets by up to 100x.

Learn more about [NVIDIA Omniverse](#) and watch NVIDIA's [SIGGRAPH special address](#).

### **About NVIDIA**

Since its founding in 1993, NVIDIA (NASDAQ: NVDA) has been a pioneer in accelerated computing. The company's invention of the GPU in 1999 sparked the growth of the PC gaming market, redefined computer graphics and ignited the era of modern AI. NVIDIA is now a full-stack computing company with data-center-scale offerings that are reshaping industry. More information at <https://nvidianews.nvidia.com/>.

Certain statements in this press release including, but not limited to, statements as to: the benefits, performance, impact, and availability of our products and technologies, including the Omniverse platform, Omniverse Avatar Cloud Engine, Omniverse Kit, PhysX, OmniLive Workflows, Omniverse Audio2Face, Omniverse Machinima, Omniverse DeepSearch, NVIDIA Modulus, Omniverse Connectors, NVIDIA MDL and NeuralVDB; the impact of the expansion of Omniverse; the multitrillion-dollar opportunity of the metaverse; and our collaborative efforts with third parties 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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