

NVIDIA RTX Extends Reach Across Top Applications, Bringing Ray Tracing, AI to Millions of Creatives

RTX On: Adobe, Autodesk, Blender, Foundry, Luxion, Others Debut RTX Support at SIGGRAPH

SIGGRAPH -- One year after [NVIDIA RTX™ technology](#) was unveiled at SIGGRAPH 2018, ray tracing has emerged as the new industry standard for product design, architecture, gaming, effects and scientific visualization.

The world's leading software makers have introduced over [40 applications](#) with RTX technology, which will enable tens of millions of users to harness ray tracing and AI, which had previously been too computationally demanding for working with interactively. This includes seven applications from top ISVs being introduced this week at SIGGRAPH.

Customers as diverse as Pixar, Renault, New Balance, Woods Bagot and Siemens Healthineers are using ray tracing in their workflows. The gaming industry's leading engines -- Unity and Unreal Engine -- support ray tracing with RTX, and RTX technology is integrated by visual computing giants like Adobe, Autodesk, Blackmagic Design and Dassault Systèmes.

"Around the world, designers and artists, OEMs and software providers have embraced real-time ray tracing and AI acceleration as the new industry standard in product design and content creation," said Greg Estes, vice president of corporate marketing and developer programs at NVIDIA. "From RTX Studio laptops used by millions of creatives to data centers managed by global businesses, the power of NVIDIA RTX can be accessed from anywhere to design better products and produce richer, more immersive entertainment faster than ever."

Ray tracing calculates each photon of light in a scene as it interacts with materials and surfaces. This provides far more accurate and lifelike images than traditional computer graphics. The NVIDIA RTX platform, which includes software tools and hardware acceleration of ray tracing and AI, enables interactive ray tracing for the first time.

RTX On: Top Applications Take Content Creation to New Heights

RTX allows designers to interactively iterate their product, model or building and see accurate lighting, shadows and reflections. Digital artists in the entertainment field can apply the same principles to their animations and visual effects.

RTX technology can also be used in servers for batch rendering of scenes too complex to visualize in real time, or for "light baking" -- pre-calculating how textures will look in certain environments for games and other interactive visualization. And the AI acceleration facilitates denoising, pose estimation and other advanced capabilities that enable new features for animators and visual artists of all kinds.

At SIGGRAPH, seven top ISVs debuted new applications with support for NVIDIA RTX, including:

- Adobe Substance Painter: RTX ray tracing accelerates baking performance up to 192x faster than CPUs.
- Autodesk Flame: RTX Tensor Cores dramatically accelerate the new machine learning feature set of Autodesk Flame v2020.1. The built-in machine learning analysis algorithms help artists isolate, extract and modify common objects in moving footage, dramatically accelerating visual effects and compositing workflows.
- Blender Cycles: NVIDIA OptiX™ 7 with CUDA® dramatically accelerates performance of open source renderer.
- Dimension 5 D5 Fusion: RTX ray tracing via UE4's implementation of DXR allows architects and designers to quickly simulate ground truth lighting and shadows.
- Daz 3D Daz Studio: NVIDIA Iray® allows creators to assemble scenes with interactive RTX accelerated ray tracing to quickly build their artistic composition and render out in full fidelity.
- Foundry MODO: RTX performance through OptiX in the completely redesigned MODO path-traced renderer offers a significant performance boost over CPU rendering.
- Luxion KeyShot: RTX accelerated ray tracing and AI denoising for photorealistic visualization of 3D data for product design reviews, marketing, animations, illustrations and more via OptiX support in KeyShot 9.

These complement important applications for design and content creation, which offer their users RTX-powered capabilities and dramatic speed increases.

"For artists, getting different texture maps prepared and baked for 3D painting is time-consuming. RTX-accelerated bakers in Substance Painter deliver up to 192x faster performance than CPU for ambient occlusion and 10-15x overall performance gain when baking all maps," said Sébastien Deguy, vice president of 3D and Immersive at Adobe. "We believe NVIDIA RTX ray tracing performance is a game-changer, significantly reducing the time for baking, so artists can quickly iterate between modeling and painting, and bring better designs to life faster."

"Autodesk Flame AI / ML features are accelerated by NVIDIA Quadro GPUs. In Flame v2020.1, the RTX 6000 card offers dramatic acceleration based on dedicated tensor compute cores," said Steve McNeill, director of product research and development at Autodesk.

Popular apps like Adobe Dimension CC and Chaos Group V-Ray provide users the ability to create fluidly, with incredible realism powered by RTX technology's RT Cores. Adobe Substance designer can deliver speed increases of up to 800 percent compared with previous CPU-based technology by integrating RTX through DXR for light baking.

[The latest version of Blackmagic Design's DaVinci Resolve](#) with DaVinci Neural Engine is transforming video production with AI by using the NVIDIA AI libraries and Tensor Cores found on NVIDIA RTX GPUs to accelerate inferencing.

"At Chaos, we build our products to take full advantage of the latest hardware to give our customers maximum creative speed," said Vlado Koylazov, co-founder and CTO at Chaos Group. "Our upcoming RTX acceleration makes this truer than ever, enabling artists to render production scenes far faster with V-Ray GPU

and explore their creations in fully ray traced real-time with Project Lavina."

"Our mission is to share this exciting universe of 3D creation with everyone, as free and open source software. Having NVIDIA actively contributing to this goal is a huge compliment for our work," said Ton Roosendaal, chairman of Blender Foundation. "As a result, Blender Cycles users can enjoy hardware-accelerated ray tracing on NVIDIA RTX graphics cards."

It's On: RTX Everywhere

In under 12 months, RTX has become widely available everywhere. Every major 3D design application in the world has committed to supporting RTX by year's end. The entire gaming industry is on board with a robust ecosystem that includes support in industry-standard APIs such as DirectX 12 and Vulkan, as well leading game engines like Unity and Unreal Engine.

Every major global OEM has unveiled RTX-powered systems. [27 RTX Studio laptops and mobile workstations](#) purpose-built for creative workflows enable desktop-level performance on the go. A new breed of high-performance RTX workstations has revolutionized the work of millions of designers, artists, researchers and scientists by enabling them to render photorealistic scenes in real time and add new AI-based capabilities to their workflows.

In the data center, [NVIDIA RTX Servers](#) -- which include fully optimized software stacks available for OptiX RTX rendering, gaming, VR and AR, and professional visualization applications -- deliver cinematic-quality graphics enhanced by RTX ray tracing for far less than the cost of electricity for a CPU-based rendering cluster with the same performance.

Learn more about [NVIDIA RTX](#) at SIGGRAPH in NVIDIA booths 1303 and 1313, including hands-on demonstrations and many [talks and sessions](#).

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