The New Standard in Gaming: GeForce RTX Gamers Embrace Ray Tracing, DLSS in Record Numbers

Uncover the shift in gaming trends as GeForce RTX users fully enable ray tracing and DLSS.

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Creating a map requires masterful geographical knowledge, artistic skill and evolving technologies that have taken people from using hand-drawn sketches to satellite imagery. Just as important, changes need to be navigated in the way people consume maps, from paper charts to GPS navigation and interactive online charts.

The way people think about video games is changing, too. Today, 83% of GeForce RTX 40 Series desktop gamers with RTX -capable games enable ray tracing, and 79% turn on DLSS , showcasing the widespread adoption of these revolutionary technologies. 1

They're also widely adopted among prior RTX 30 Series and 20 Series owners; 56% and 43% turn on ray tracing, while 71% and 68% turn on DLSS, respectively.

At the core of this story: For any media — from movies and music to maps and magazines — technologies don't just define the way people create content, they redefine how it's consumed, ultimately becoming integral parts of its transformation.

That's why it's essential to consider both ray tracing and DLSS when evaluating an RTX 40 Series upgrade — which is how today's gamers achieve the best graphics and performance.

NVIDIA introduced neural rendering with its Turing architecture in the RTX 20 Series five years ago. Neural rendering combines two complementary breakthroughs — real-time ray tracing and DLSS — with the shading techniques long a staple of real-time graphics.

Powered by dedicated Tensor Cores for AI and RT Cores for ray tracing, RTX and DLSS have transformed the gaming industry. The initial implementations were a first critical step. Back in 2018, 37% of RTX 20 Series gamers embraced ray tracing, and 26% turned on DLSS. 2

Fast forward to the present, and the GeForce RTX 40 Series — the third generation of RTX — has established ray tracing and DLSS as the new standard in gaming.

Ray tracing performance has significantly improved thanks to advancements like Shader Execution Reordering, cutting-edge Opacity Micromap and Displaced Micro-Mesh engines.

This week Cyberpunk 2077's Ray Tracing: Overdrive Mode technology preview showcases the evolution of ray tracing into full ray tracing, offering enhanced real-time lighting, shadows and reflections.

These innovations enable even the most demanding games to simultaneously implement multiple ray-tracing effects or even full ray tracing, aka path tracing, for unparalleled realism and immersion.

Meanwhile, DLSS Super Resolution has evolved to deliver significant performance boosts without compromising image quality. Ongoing neural network updates and model training on an NVIDIA supercomputer — with over an exaflop of AI processing power — continue to improve image fidelity and motion quality.

With DLSS 3, AI-powered Frame Generation creates new high-quality frames for smoother gameplay while maintaining great responsiveness through NVIDIA Reflex . AI can now generate seven out of every eight pixels through a combination of Super Resolution and Frame Generation.

This potent combination of third-generation ray tracing and DLSS has resulted in a staggering 16x leap in ray-tracing operations per pixel over the past five years. And where performance goes, PC gamers and game developers follow.

Adoption rates have soared, with over 400 RTX games and applications available and more on the horizon. DLSS 3, in particular, has seen a 7x faster adoption rate than its predecessor.

The popularity of ray tracing and DLSS outpaces other configurations, such as 4K, which is used by 28% of RTX 40 Series desktop gamers, and 144Hz or higher monitors, used by 62%.

As a result, judging a great game like Cyberpunk 2077 with DLSS and ray tracing off doesn't demonstrate how a large and growing number of gamers will experience this game.

As DLSS and ray tracing continue to redefine gaming experiences, raster-only numbers no longer paint the picture gamers are seeing. This is only natural because, as PC gamers know, the full picture is looking better than ever.

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