AI Physics to Transform Simulation Speed and Efficiency

Customer Spotlight

How GM Motorsports Accelerates High Speed Racing with AI Physics

GM Motorsports is pioneering new AI-accelerated aerodynamics optimization to dramatically reduce R&D cycle time and lap times on the track. In vehicle development for the Formula One racing series where milliseconds matter, Andretti Cadillac engineers leverage AI Physics on Rescale powered by NVIDIA to optimize every aspect of chassis aerodynamics. By automating physics-based AI predictions on Rescale with the latest technologies from NVIDIA, Microsoft Azure, and Navasto, GM Motorsports accelerates R&D decision-making with greater performance and efficiency.

AI Engineering Drives Results

AI Physics has been used by customers to deliver staggering results in range of domains including:

100+ hours of crash analysis in 15 seconds (2.4 million times faster)

72,000x faster analysis for CPG material exploration

3x faster overall product development for heat sink thermal management

AI Physics Enhances Engineering Simulation

In an era where technological advancements are rapidly transforming industries, Rescale's announcement of AI Physics at the NVIDIA GTC stands as a testament to the future of simulation speed and efficiency. AI Physics, powered by NVIDIA, is set to redefine the landscape of research and development (R&D). The collaboration between Rescale and NVIDIA introduces AI Physics, a groundbreaking tool that empowers engineers with state-of-the-art technologies to deploy custom AI models.

The practical usefulness of AI continues to reach new heights. As AI software developers and hardware developers achieve new milestones, they unlock new possibilities for domain specialists driving innovation in various industries – nuclear physicists, vaccine researchers, and aerospace engineers, for example.

Recent advancements in specialized, physics-based algorithms make it possible to reduce the computational complexity and time required to solve even the most challenging problems. The result is lightning-fast AI predictions with near 99% accuracy, which is already transforming the way GM Motorsports and others develop new products at unprecedented pace.

Driving Impact Across Domains

The impact of AI-driven R&D is vast and varied. In the automotive industry, for example, companies like General Motors Motorsports can now test the aerodynamics of their vehicles rapidly and more extensively and efficiently, leading to designs that are both faster and safer. Similarly, aerospace companies can simulate aircraft performance under a wider range of conditions to ensure safety and efficiency, while life sciences firms can model complex biological processes at speeds that can accelerate the path to new discoveries. To put the potential of AI Physics into perspective, consider the field of computational fluid dynamics (CFD). Traditional CFD simulations are notoriously resource-intensive. With AI Physics, engineers can train AI models with existing simulation data, drastically reducing the computational load for new simulations. This capability can transform industries reliant on fluid dynamics, such as automotive, aerospace, and energy, by enabling more frequent and comprehensive simulations. Another example is the design and testing of materials at the nanoscale, crucial for the semiconductor and manufacturing industries. AI Physics can accelerate the discovery of new materials with desired properties by predicting material behavior faster and more accurately than ever before.

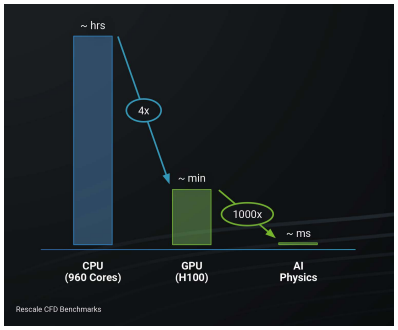


Image: AI Physics Acceleration Compared to Hardware Acceleration

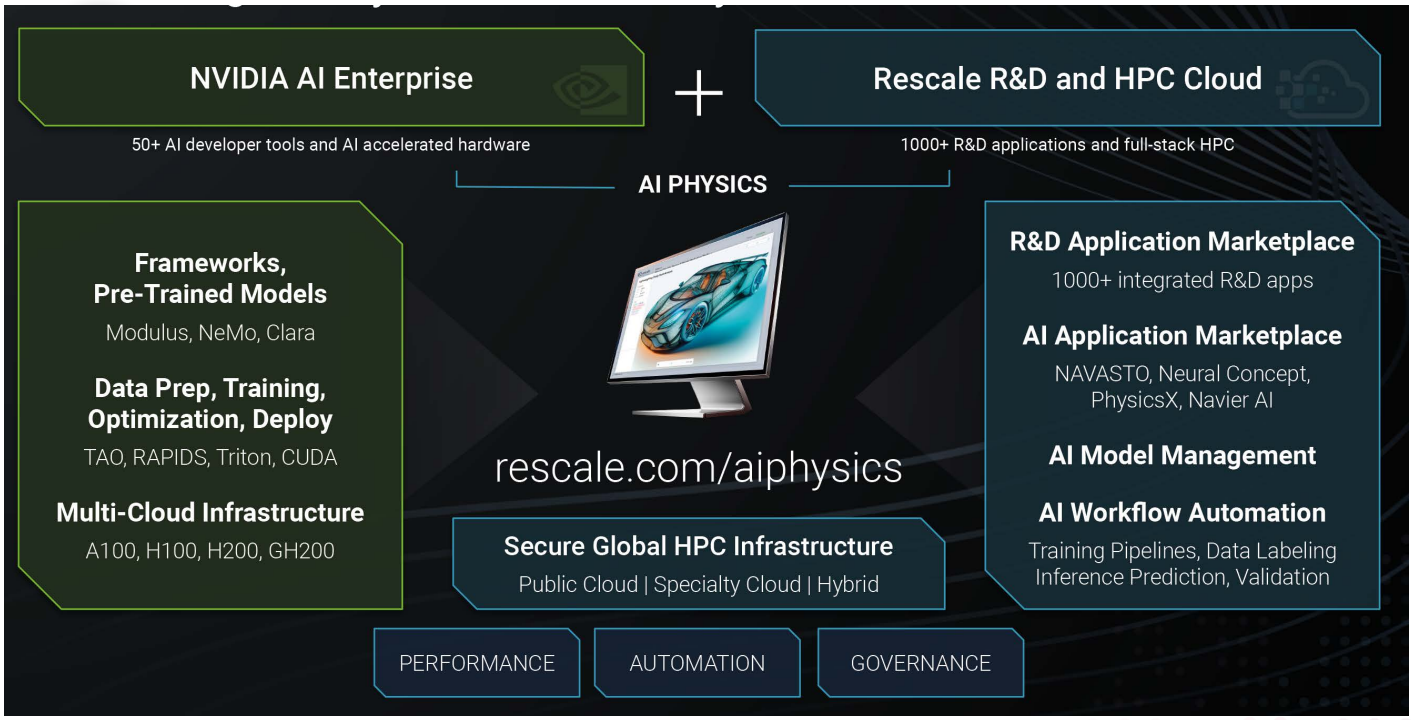
Harnessing AI Physics to Accelerate Engineering Velocity

Rescale AI Physics unifies the latest AI software and hardware on the market with a broad ecosystem of powerful simulation capabilities to enhance computational engineering and science, the lifeblood of innovation in virtually every industry. As traditional simulation techniques reach the limits of computational speed, R&D teams are looking for new ways to explore even more possibilities in shorter periods of time, a seemingly impossible task before recent advances in AI.

By synergizing Rescale's cutting-edge platform with NVIDIA's accelerated computing architectures, GM Motorsports propels R&D decisions forward. This powerful collaboration ensures superior performance and efficiency, driving innovation in the automotive industry.

Scan the QR code to watch the Rescale and GM motors session on Fueling the Future: How GM Motorsports Accelerates High Speed Racing with AI Physics

Rescale's Platform Advantage for AI



AI Physics Powered by NVIDIA: Explore the First Turnkey, Full-Stack AI-Accelerated R&D Platform

The integration of neural networks is particularly exciting, offering efficient approximations for complex simulations through streamlined algorithms and GPU acceleration.

Rescale's AI Physics platform, powered by NVIDIA, seamlessly merges applied AI Physics with cutting-edge NVIDIA technologies. From weather predictions to Molecular Dynamics, Biomechanics simulations, Cardiovascular CFD, Heat Exchanger Optimization, and Turbomachinery flows.

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About Rescale

Rescale's AI-powered cloud high performance computing (HPC) platform makes accelerating innovation possible for any organization. Innovators use Rescale to provide R&D teams the world's largest library of fully managed software applications and performance-driven computing architectures, robust data security, intelligent controls, and a seamless AI-driven experience. Leveraged by a majority of Fortune 500 companies to accelerate time to market, Rescale has been recognized by Gartner as a Cool Vendor for Cloud Infrastructure, by Deloitte as a Technology Fast 500 company, and by the World Economic Forum as a Global Innovator Unicorn. Learn more at rescale.com.