

Unlocking the future of engineering with AI

AI-powered physics simulation from Flexcompute reduces development times and enables faster, smarter and more sustainable product designs.

Business needs

For industries such as aerospace, automotive and renewable energy, high-speed computation and real-time insights are critical for innovation. Flexcompute addresses the limits of traditional simulations, which are slow, costly and resource intensive. Partnering with Dell Technologies and NVIDIA, Flexcompute advances physics intelligence, a combination of multi-physics simulation, geometry-native reasoning and neural memory that learns from simulations. This scalable, energy-efficient approach enhances design capabilities and accelerates innovation.

Business results



Achieves 100x faster design speeds with Flexcompute's simulation technology.



Boosts performance for engineers by 10x for design optimization cycles.



Reduces simulation times for customers from days to minutes to accelerate the end-to-end development cycle.



Lowers costs and emissions for customers with a significant reduction in reliance on physical prototypes.

Solutions at a glance

- [Dell PowerEdge XE-Series Servers with NVIDIA accelerated computing](#)
- [Dell PowerSwitch Ethernet data center switches](#)
- [NVIDIA Quantum InfiniBand Switches](#)



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Pioneering next-generation engineering with physics intelligence

Engineering software-as-a-service provider Flexcompute is transforming the engineering landscape with its groundbreaking physics intelligence platform, which develops next-generation physics simulation tools to help customers innovate faster, cut costs and reduce risks. For industries like aerospace, automotive, consumer electronics, transportation and renewable energy, traditional simulation approaches have long been hindered by slow processing speeds and high costs. These challenges limit innovation, increase environmental impact and force engineers to spend more time navigating complex tools versus designing. Flexcompute's physics intelligence platform turns the laws of physics into a shared framework for engineers and AI agents, addressing a pressing need for a new generation of solutions that bridge the gap between speed and sustainability.

Physics intelligence is set to change how we design and build across all physical industries. "With Dell and NVIDIA, we are bringing physics insights close to real time and helping design the future faster and better," states Vera Yang, co-founder and president, Flexcompute.

Delivering real-time results across industries

Flexcompute recognized an opportunity to drastically enhance simulation efficiency and speed by leveraging advanced AI and GPU-native architectures and overcame the limitations of legacy high-performance computing (HPC) environments.

Flexcompute's platform provides simulation speeds that are 100 times faster for computational fluid dynamics (CFD) and electromagnetic (EM) models. Engineers also gain a 10 times performance boost for design optimization cycles supporting rapid, AI-driven simulations across industries such as aerospace and electric vehicle (EV) design.

Powered by Dell PowerEdge XE-Series servers with NVIDIA accelerated computing, Dell PowerSwitch Ethernet data center and NVIDIA Quantum InfiniBand switches, Flexcompute is able to reduce project timelines from hours to minutes, bringing physics insights close to real-time.

For example, JetZero, an aerospace startup reinventing aircraft with a blended-wing design, uses Flexcompute's physics intelligence to build a rich aerodynamic database in just hours. This allows their team to explore more concepts, reduce risk earlier in the development cycle and move forward with confidence. "JetZero uses our CFD platform to dramatically speed up aviation certifications while reducing design risk," states Wang.

Similarly, NIO, a global leader in the smart EV industry, uses the platform as an aero intelligence layer that learns from every simulation. "NIO achieves aerodynamic optimization with more iterations in minutes rather than days, pushing the limits of EV design evolution," notes Yang. This allows designers to test bold ideas quickly and turn them into reliable products faster than ever.



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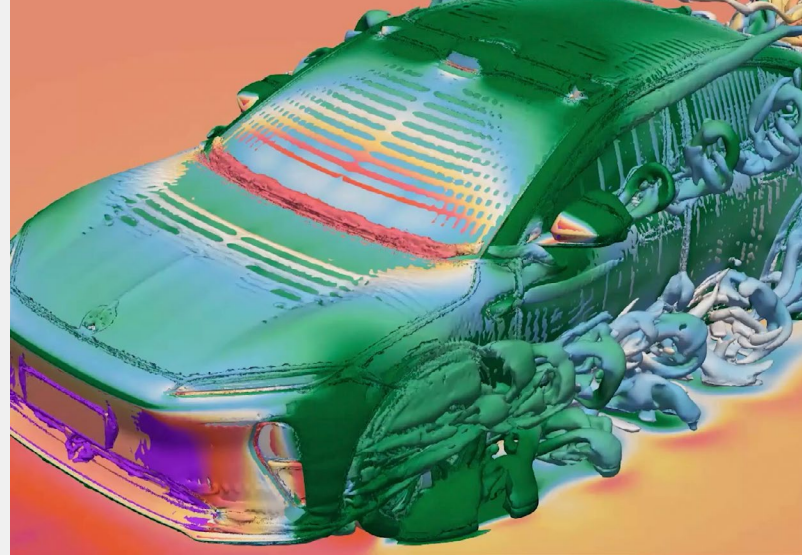
Vera Yang,
Co-Founder and President, Flexcompute

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Thanks to our partnerships with Dell and NVIDIA, we can run thousands of simulations in parallel. This removes one of the biggest bottlenecks in innovation: waiting.

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Vera Yang,
Co-Founder and President, Flexcompute



Innovating with sustainability as a core value

Flexcompute's AI-driven infrastructure offers more than performance, it fosters environmental responsibility. By reducing the need for physical prototypes and improving energy efficiency, the physics intelligence platform cuts carbon emissions for more sustainable innovation. This aligns with the company's mission to combine technological advancement with environmental stewardship. "For us, the collaboration with Dell and NVIDIA is about more than just speed," explains Yang. "It's about enabling safe, fast and accessible hardware innovation at a scale never thought achievable."

Envisioning future possibilities

With a vision to make physical product development as agile as software development, Flexcompute is leading the charge toward smarter, faster and more efficient solutions. By continuing its partnership with Dell Technologies and NVIDIA, the company is not only setting industry benchmarks but also redefining what's possible for engineering innovation. "This partnership not only enhances efficiency but also accelerates breakthroughs in sustainable engineering design innovation," concludes Yang.

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Vera Yang,
Co-Founder and President, Flexcompute

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