



NVIDIA to Build Accelerated Quantum Computing Research Center

New Center in Boston to Advance the Development of Quantum Computing Architectures and Algorithms in Collaboration With Leading Hardware and Software Makers

GTC--NVIDIA today announced it is building a Boston-based research center to provide cutting-edge technologies to advance [quantum computing](#).

The NVIDIA Accelerated Quantum Research Center, or [NVAQC](#), will integrate leading quantum hardware with AI supercomputers, enabling what is known as accelerated quantum supercomputing. The NVAQC will help solve quantum computing's most challenging problems, ranging from qubit noise to transforming experimental quantum processors into practical devices.

Leading quantum computing innovators, including [Quantinuum](#), Quantum Machines and [QuEra Computing](#), will tap into the NVAQC to drive advancements through collaborations with researchers from leading universities, such as the Harvard Quantum Initiative in Science and Engineering (HQI) and the Engineering Quantum Systems (EQuS) group at the Massachusetts Institute of Technology (MIT).

"Quantum computing will augment AI supercomputers to tackle some of the world's most important problems, from drug discovery to materials development," said Jensen Huang, founder and CEO of NVIDIA. "Working with the wider quantum research community to advance CUDA-quantum hybrid computing, the NVIDIA Accelerated Quantum Research Center is where breakthroughs will be made to create large-scale, useful, accelerated quantum supercomputers."

Propelling Quantum Innovation

Through the NVAQC, commercial and academic partners will work with NVIDIA to use state-of-the-art NVIDIA GB200 NVL72 rack-scale systems, the most powerful hardware ever deployed for quantum computing applications. This enables complex simulations of quantum systems and the deployment of the low-latency quantum hardware control algorithms essential for quantum error correction. NVIDIA GB200 NVL72 systems will also accelerate the adoption of AI algorithms in quantum computing research.

To address the challenges of integrating GPU and QPU hardware, the NVAQC will employ the [NVIDIA CUDA-Q™](#) quantum development platform, enabling researchers to develop new hybrid quantum algorithms and applications.

The HQI -- a community of researchers dedicated to advancing the science and engineering of quantum systems and their applications -- will collaborate with the NVAQC to advance their research on next-generation quantum computing technologies.

"The NVAQC is a very special addition to the unique Boston area quantum ecosystem, including world-leading university groups and startup companies," said Mikhail Lukin, Joshua and Beth Friedman University Professor at Harvard and a co-director of HQI. "The accelerated quantum and classical computing technologies NVIDIA is bringing together has the potential to advance the research in areas ranging from quantum error correction to applications of quantum computing systems, accelerating quantum computing research and pulling useful quantum computing closer to reality."

Researchers from the EQuS group, a member of the MIT Center for Quantum Engineering -- which serves as a hub for research, education and engagement in support of quantum engineering -- will use NVAQC to develop techniques like quantum error correction.

"The NVIDIA Accelerated Quantum Research Center will provide EQuS group researchers with unprecedented access to the technologies and expertise needed to solve the challenges of useful quantum computing," said William Oliver, professor of electrical engineering and computer science, and of physics, leader of the EQuS group and director of the MIT Center for Quantum Engineering. "We anticipate the future will also include other members of the Center for Quantum Engineering at MIT. Integrating the NVIDIA accelerated computing platform with qubits will help tackle core challenges like quantum error correction, hybrid application development and quantum device characterization."

The NVAQC is expected to begin operations later this year.

Learn more about NVIDIA's quantum computing initiatives and hear from industry leaders by joining [Quantum Day](#) at NVIDIA GTC, which runs through March 21.

About NVIDIA

[NVIDIA](#) (NASDAQ: NVDA) is the world leader in accelerated computing.

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Alex Shapiro
Corporate Communications
NVIDIA Corporation
press@nvidia.com