

Quantum Brilliance Releases Open-Source Software for Miniature Quantum Computers

Quantum Brilliance's Qristal SDK moves into broad release for developing on-premise and edge applications for compact, room-temperature quantum accelerators

SYDNEY, AUSTRALIA, June 8, 2023 /EINPresswire.com/ -- [Quantum Brilliance](#), the leading



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Mark Luo, CEO and co-founder of Quantum Brilliance

developer of miniaturised, room-temperature quantum computing products and solutions, today announced the full release of the [Qristal SDK](#), an open-source software development kit for researching applications that integrate the company’s portable, diamond-based quantum accelerators.

Previously in beta, the Quantum Brilliance Qristal SDK is now available for anyone to develop and test novel quantum algorithms for real-world applications specifically designed for quantum accelerators rather than quantum mainframes. Potential use cases include classical-quantum hybrid applications in data centres, massively parallelised

clusters of accelerators for computational chemistry and embedded accelerators for edge computing applications such as robotics, autonomous vehicles and satellites.

“With enhancements based on input from beta users, the Qristal SDK allows researchers to leverage quantum-based solutions in a host of potential real-world applications,” said Mark Luo, CEO and co-founder of Quantum Brilliance. “We believe this powerful tool will help organizations around the world understand how quantum accelerators can enable and enhance productisation and commercialisation.”

Qristal SDK users will find fully integrated C++ and Python APIs, NVIDIA CUDA features and customizable noise models to support the development of their quantum-enhanced designs. The software also incorporates MPI, the global standard for large-scale parallel computing, allowing users to optimise, simulate and deploy hybrid applications of parallelised, room-temperature quantum accelerators in high-performance computing (HPC) deployments from supercomputers to edge devices.

Quantum Brilliance’s quantum systems use synthetic diamonds to operate at room temperature

in any environment. Unlike large mainframe quantum computers, Quantum Brilliance's small-form devices do not require cryogenics, vacuum systems or precision laser arrays, consuming significantly less power and enabling deployment onsite or at the edge.

Currently the size of a desktop PC, the company is working to further miniaturise its technology to the size of a semiconductor chip that can be used on any device, wherever classical computers exist today, unlocking practical quantum computing for everyone.

[The Qristal SDK source code can be downloaded here](#). The source code includes extensive application libraries for VQE, QAOA, quantum machine learning, natural language processing and more.

To learn more about Quantum Brilliance, visit www.quantumbrilliance.com.

About Quantum Brilliance

Founded in 2019, Quantum Brilliance is a venture-backed quantum products and solutions company developing diamond quantum computers supported by software and applications. Quantum Brilliance's goal is to enable mass deployment of its quantum technology to propel industries to harness edge computing applications and next-generation supercomputers. Quantum Brilliance has global partnerships in the Americas, EMEA and Asia Pacific, working with governments, supercomputing centres, research organisations and industry.

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