Superstaq

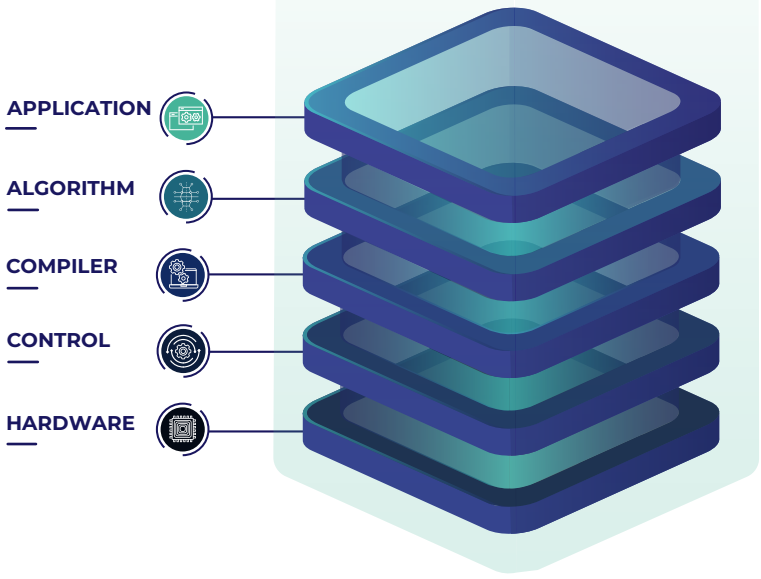
Quantum Software Accelerating Time to Value

Infleqtion

For more information, please contact
software@infleqtion.com

Superstaq uses proprietary cross-layer optimization techniques for superior performance. Building quantum hardware is hard enough. When you've reached the limit with Cirq and Qiskit compilers, turn to Superstaq to unlock greater efficiency. Our software works directly with the underlying device physics so you don't have to develop custom code from scratch.

Join our community of hardware customers who leverage Superstaq to accelerate their time-to-market and boost the computational power of their machines.



Elegant Design...

Superstaq considers the architecture, connectivity, noise levels, and other device characteristics to compile circuits for best execution. We leverage deep optimization techniques – such as advanced mapping and gate decompositions – to combat errors and extend qubit lifetimes. The result is more consistently accurate solutions to quantum programs.

Enhanced Execution
Can improve performance by ≥ 10x

Optimal Decomposition
Exploits the hardware's full set of native operations

Next-generation Error Mitigation
Incorporates techniques like Dynamical Decoupling

"As part of ongoing work on the Advanced Quantum Testbed, Superstaq has provided software tools used to support quantum research and development. Continuing the collaboration supports researcher access to software tools needed for experiments on evolving quantum hardware."

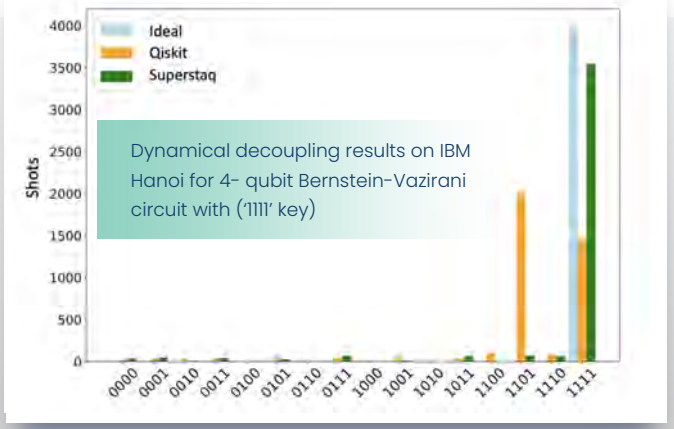
- Chris Spitzer, Quantum Research Program Manager at Lawrence Berkeley National Laboratory

... Superior Power

Through the use of cutting edge techniques – parametric (fractional) gates, dynamical decoupling, swap mirroring, bring-your-own gateset, approximate synthesis, and qutrits – we achieve 10x performance improvements for a wide range of applications.

We have demonstrated a logical neutral atom architecture that integrates atom motion with in-place entanglement to achieve lower overheads than entangling-zone approaches.

Scan the QR to learn more.



Superstaq is able to successfully run applications and obtain distributions that were previously unfeasible.