



# QuEra: Advancing the Path to Fault-Tolerant Quantum Computing

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# QuEra: State of the Art and Technology Outlook

## Scientific Validation: The Blueprint for Scale

- **Logical magic-state distillation** for universal computation, *Nature* 645, 620 (2025)
- **Scientific impact:** Aquila enables demonstration of 2D **string breaking**, *Nature* 642, 321 (2025)
- **Continuous operation at scale:** 3,000-atom array running 2+ hours, *Nature* 646, 1075 (2025)
- **Verified fault-tolerant architecture:** up to 96 logical qubits, below-threshold, *Nature* (2025)



## From Science to Industrialization

- **\$230M Series B** led by Google Quantum AI, SoftBank; strategic NVIDIA investment.    **NVIDIA**
- **Hybrid compute integration:** AIST on-premise system next to **ABCI-Q** (NVIDIA); HPC integration with **Dell**.
- **DARPA QBI:** U.S. validation of QuEra's scalable architecture.

**Outlook:** With the core architecture validated, QuEra is moving toward logical-qubit demonstrations and workflows that accelerate adoption across HPC and industry.

