



Q-Newsletter

HIGHLIGHT

[Cybersecurity Job Openings: The Quantum Threat to Encryption](#)

The U.S. National Institute of Standards and Technology (NIST) has issued a warning: the encryption that protects our online world could soon be useless.

In a new report, NIST explained that quantum computers will eventually be able to crack the codes behind internet security, online banking, cryptocurrencies, and even government communications. The danger isn't just in the future. Attackers could already be storing encrypted data today, waiting to unlock it once quantum technology matures. Because replacing global encryption systems will take years, NIST is urging organisations to begin the shift to "quantum-safe" cryptography now.

Tech giants like Microsoft, Amazon, and IBM are already racing to build defences, marking the start of a new era in digital security. (If you ever wanted job security, cybersecurity might be the place to find it.)

RESEARCH

[First Evidenced Advatange of QC?](#)

On October 22nd, Google Quantum AI unveiled what they call their first ever demonstration of verifiable quantum advantage, powered by Willow, a new superconducting-qubit processor. Unlike earlier demonstrations that couldn't be independently confirmed, Willow's results can be validated by classical simulation, giving the claim a solid scientific footing. The chip uses high-fidelity transmon qubits linked by tunable couplers, enabling more precise gate operations and reduced noise. Enhanced error-mitigation and verification

techniques make its performance both faster and trustworthy — a major step forward in scaling reliable quantum hardware.

This result marks Google's most significant advance since its 2019 Sycamore experiment. While Willow remains a research prototype, its verified accuracy suggests that superconducting platforms are maturing from "proof-of-concept" experiments into reproducible quantum devices. For the broader field, it demonstrates progress toward fault-tolerant quantum computation — machines that not only outperform classical computers, but whose outputs can be confidently trusted.

MARKET

[HPE Forms "Quantum Scaling Alliance"](#)



Hewlett Packard Enterprise announced the Quantum Scaling Alliance, a consortium of eight organisations focused on making quantum computing scalable and practical. The group's mission is to design a cost-effective quantum supercomputer by combining today's supercomputing, networking, and semiconductor expertise with quantum technologies. HPE frames the effort as moving the field from proof-of-principle demos to industry-scale applications, with an emphasis on hybrid integration of quantum and classical systems and a full-stack approach spanning hardware, control, and software. For buyers and partners, the signal is clear: the roadmap centers on manufacturability, interoperability, and real-world deployment rather than lab-only experiments.