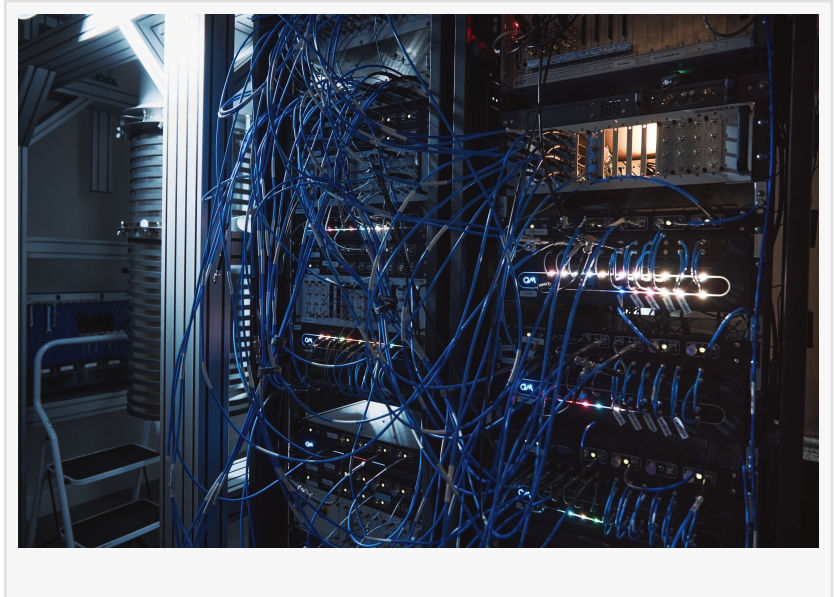


Alice & Bob to Integrate Cat Qubits in Datacenters of the Future, Accelerated by NVIDIA Technology

PARIS, FRANCE, March 20, 2024

[/EINPresswire.com/](https://EINPresswire.com/) -- A quantum computer will serve as an enhancement to advanced computing centers for dealing with advanced physical simulations and optimization problems, alongside CPUs and GPUs.

This is why it is important to link and translate quantum information and quantum computation with their classical counterparts. Alice & Bob, a quantum hardware manufacturer and leading QPU designer, today announced it is working to accelerate the integration of quantum technology into industry by introducing cat qubits into the datacenters of the future.



Alice & Bob integrates [NVIDIA DGX Quantum](#), which combines [NVIDIA GH200 Grace Hopper Superchips](#) and the Quantum Machines' OPX+ control system.

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Tim Costa, Director of HPC and quantum at NVIDIA

DGX Quantum runs hybrid algorithms, quantum error correction, calibration, and control at max performance. Its integration will help bring cat qubit-based quantum computers into the ecosystem. Cat qubits are the innovative quantum bit pioneered by Alice & Bob, enabling the roadmap to building a fault-tolerant quantum computer.

Alice & Bob are also using [NVIDIA CUDA Quantum](#), an open-source platform for integrating and programming quantum processing units (QPUs), GPUs, and CPUs in one system, to enable real-time decoding of complex error

correction codes, such as qLDPC, which are the core of Alice & Bob's roadmap. This will help push the state-of-the-art towards fault-tolerant quantum computing based on cat qubits.

DYNAMIQS is an open-source high-performance quantum systems simulation library developed by Alice & Bob and partners and is available at www.dynamiqs.org. It is accelerated by GPUs. Alice & Bob is working to accelerate the simulation of cat qubits (up to 60 times) and to get more accurate results. This will help democratize understanding of cat qubits and increase the appetite of the research community for this promising technology.

NVIDIA has a long history of integrating a broad selection of application-specific, high-performance computational tasks in the datacenter. They make for an ideal partner in our road towards making quantum useful for businesses, says Théau Peronnin, Alice & Bob's CEO.

"The integration of NVIDIA's technology and expertise in application-specific, high-performance computational tasks in the datacenter is set to help us in our journey towards making quantum useful for businesses," says Théau Peronnin, Alice & Bob's CEO. "This gives our integration in the launch of NVIDIA Quantum Cloud its deeper meaning."

"The integration of Alice and Bob's technology with NVIDIA DGX Quantum is set to help open the door to real-time error correction — an essential step on the road to useful quantum computing," says Tim Costa, director of HPC and quantum at NVIDIA.

Alice & Bob is working to accelerate the successful integration of quantum technology into industry. Cat qubits, thanks to their unique passive error correction, are already regarded as one of the most promising quantum computing platforms to deliver fault-tolerant quantum computing.

About Alice & Bob

Alice & Bob is a start-up based in Paris and Boston whose goal is to realize the first universal, fault-tolerant quantum computer. Founded in 2020, Alice & Bob has already raised €30M in funding, hired over 90 employees, and demonstrated experimental results surpassing those of technological giants like Google or IBM. Alice & Bob specializes in cat qubits, a technology pioneered by the company's founders and later adopted by Amazon. Demonstrating the power of its cat architecture, Alice & Bob recently showed it could reduce hardware requirements to build a large-scale useful quantum computer by up to 200 times compared to competing approaches. Follow Alice & Bob on LinkedIn, X or YouTube, visit our website www.alice-bob.com, or join The Cat Tree on Slack to learn more.

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