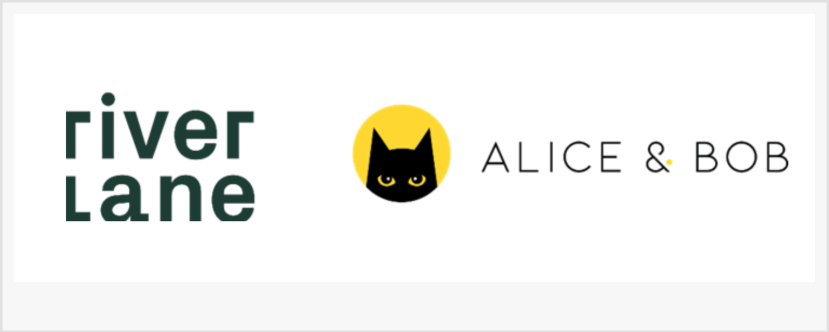
# RIVERLANE AND ALICE & BOB JOIN FORCES TO ACCELERATE QUANTUM ERROR CORRECTION




CAMBRIDGE, UNITED KINGDOM, May 29, 2024 /EINPresswire.com/ -- Riverlane, the global leader in quantum error correction technology, and Alice & Bob, a leading developer of fault-tolerant quantum computers, have signed a collaboration agreement to work on the integration of Riverlane's quantum error correction (QEC) stack within the larger quantum computing system based on cat qubit technology Alice & Bob is developing.

Qubits, the core building blocks of quantum computers, are inherently prone to errors. Two errors disrupt the quantum information in the qubit, bit-flips and phase-flips. Alice & Bob has pioneered the cat qubit, a unique type of superconducting qubit that is protected from bit-flips by design, reducing the scale of the error correction challenge.

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> *Dr Theau Peronnin, Alice & Bob CEO*

This would allow the company to build a large-scale error-corrected quantum computer using 200 times fewer hardware resources than other state-of-the-art approaches.

All quantum computers today, regardless of qubit type, require error correction technology that addresses both bit and phase flip errors in real time. Today's best quantum computers perform thousands of reliable quantum operations. This must scale to a million and, ultimately, trillions of operations to execute those applications that will transform whole industries. Riverlane's patented quantum error correction stack, Deltaflow, comprehensively addresses this challenge as a distinct layer within a quantum computer's overall stack. Deltaflow employs the world's most powerful quantum error decoder.

'Our cat qubits are protected from one of the two errors in quantum computers. But this only

solves part of the challenge." said Dr Theau Peronnin, Alice & Bob CEO. "We need quantum error correction to get rid of the remaining error, the phase-flip. We are partnering with Riverlane because they have the most promising QEC technology for this challenge.'

The two companies just announced their collaboration on stage at the France Quantum conference in Paris. They underlined the importance of solving the all-important challenge of error correction as a prerequisite for quantum computing to deliver on its multi-trillion-dollar promise.

Riverlane's Founder and CEO Dr Steve Brierley said: 'We're excited to begin exploring how best to combine Alice & Bob's cat qubits, which are already one of the most resistant to errors, with our leading quantum error correction technology, to accelerate our shared path to fault-tolerant quantum computing. I'm certain this approach can help them scale further and faster."

To learn more about Riverlane's QEC Stack, watch the video here.

To learn more about Alice & Bob's cat qubit, watch the video here.

About Alice & Bob
Alice & Bob is a quantum computing company based in Paris and Boston whose goal is to create the first universal, fault-tolerant quantum computer. Founded in 2020, Alice & Bob has already raised €30 million in funding, hired over 95 employees and demonstrated experimental results surpassing those of technology giants such as Google or IBM. Alice & Bob specializes in cat qubits, a pioneering technology developed by the company's founders and later adopted by Amazon. Demonstrating the power of its cat architecture, Alice & Bob recently showed that it could reduce the hardware requirements for building a useful large-scale quantum computer by up to 200 times compared with competing approaches. Alice & Bob cat qubit is available for anyone to test through cloud access. Follow Alice & Bob on LinkedIn, X or YouTube, visit their website www.alice-bob.com, or join The Cat Tree on Slack to learn more.

About Riverlane
Riverlane's mission is to make quantum computing useful, sooner. This will transform the future of computing and start an era of human progress as significant as the digital and industrial revolutions. Achieving this requires a 10,000x reduction in the system errors that quickly overwhelm all quantum computers today. Riverlane is building Deltaflow, the Quantum Error Correction (QEC) Stack, that solves this problem in all quantum computers using every type of qubit. At Deltaflow's core is the world's most powerful quantum error decoder. Deltaflow is powered by a new class of patented QEC semiconductors designed and built by Riverlane.

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