Research in quantum computing is getting a lot of resources, development, and attention. Select a news item from the past 12 months and share a summary of a recent development. Explain who is working on what problem and how they have contributed to the advancement of quantum computing.

One of the primary challenges in quantum computing is managing and correcting quantum errors. Unlike classical bits, qubits are prone to errors due to their highly sensitive nature. IBM's research focused on developing more sophisticated error correction algorithms and techniques, which are vital for scaling up quantum computers to more practical and powerful configurations. They introduced new methods to measure and mitigate errors, leading to an increase in what's known as "quantum volume," a metric that assesses the overall capability and error rate of a quantum computer.

Alongside software and algorithmic advancements, IBM also invested in enhancing the hardware aspect of their quantum computers. This includes improvements in qubit coherence times (the duration a qubit can maintain its quantum state), and innovations in quantum chip design, which allow for more qubits to be added to their systems without a proportional increase in error rates.

IBM has been collaborating with various academic, private, and government entities to foster a robust quantum computing ecosystem. This includes providing access to their quantum computers through cloud services, engaging in research partnerships, and contributing to educational initiatives to train the next generation of quantum computing professionals.

IBM's advancements contribute significantly to the field of quantum computing by addressing some of the fundamental challenges that have hindered its progress. By improving error rates and scaling up the number of qubits, they are moving closer to achieving "quantum advantage," where quantum computers can solve problems that are infeasible for classical computers. This progress not only demonstrates the potential of quantum computing but also lays the groundwork for future innovations and applications across various fields like cryptography, materials science, and complex system modeling.

This development is a part of the broader global effort in quantum computing, where various organizations, including Google, Microsoft, and numerous startups and academic institutions, are also making significant strides. The competition and collaboration among these entities are rapidly accelerating the advancement of quantum technologies.

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