Explore the Impact of Quantum Computing Chips on Data Science and AI

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This talk is to explore the effect of quantum computing on data science and AI, looking at the fundamental concepts of quantum computing and the key terms used in the field. It also covers the challenges that lie ahead for quantum computing and how they can be overcome. Quantum computing involves specialized computers that solve mathematical problems and run quantum models that are quantum theory principles. This powerful technology allows data scientists to build models related to complex processes such as molecular formations, photosynthesis, and superconductivity. Information is processed differently from regular computers, transferring data using qubits rather than in binary form. Qubits are vital in terms of delivering exponential computational power in quantum computing as they can remain in superposition. Using a wide range of algorithms, quantum computers can measure and observe vast amounts of data. The necessary algorithms will be input by the user, and the quantum computer will then create a multidimensional environment that makes sense of the various data points to discover patterns and connections. Quantum machine learning and quantum artificial intelligence are two underappreciated but fast-growing fields within data science. This is because machine learning algorithms are becoming far too complex for traditional computers and require the capabilities of quantum computing to process them effectively. Eventually, this is expected to lead to major advancements in artificial intelligence.

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