

QUANTUM COMPUTING AS A TECHNOLOGICAL BREAKTHROUGH OF THE FUTURE

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Technological segment still stays in a state of permanent development and its level is getting higher and higher. Therefore, it is inevitable that any brand-new invention or discovery will seem even more complicated as compared to previous. However, any revolutionary breakthrough requires some time to be applied and integrated in our lives. There is a well-known Edward Teller's quote: “The science of today is the technology of tomorrow.” One of the most prominent cases which may confirm these words is Quantum Computing. The entire generations were united to achieve such an advanced technology even though the very first steps in this field were at the level of abstraction.

Quantum Science symbolically starts in 1900 after Max Planck made an attempt to debunk the myth about infinite energy. He made a theoretical assumption which set the trend for the whole century. Later it became clear that the theory was true. Such famous scientists as Einstein, Maxwell, De Broglie and others gathered their knowledge to create a link between Electricity, Thermodynamics, Relativity and Quantum Mechanics. The year after, Werner Heisenberg aimed his efforts on a practical part of Quantum Study. His researches and conclusions, including other, mentioned before, led Erwin Schrodinger, another brilliant scientist, to derive the equation. It is known as the fundamental equation of Quantum Mechanics. This small line was the quintessence of an incredibly enormous amount of an intellectual resource. It changed the world in the 20th century. And everything points that Quantum Mechanics will change the world in the 21st as well.

Quantum Computing is a new field of advanced Computer Science that uses the unique properties of Quantum Mechanics to solve problems beyond the power of even the most powerful classical computers. According to Cambridge Open

Academy, it is mentioned as one of ten new Technology Trends in 2025. There are some existing computers based on this mechanism but they are too imperfect and need to be developed. Nevertheless, this technology has a sky-high potential and seems to be a great substitution to the classical binary computers. The main reason to be sure in it is hidden in the root. We almost achieved the limit of the binary system, 0s and 1s, representing the on or off state of a current. In return, Quantum Computing proposes so-called qubits, which can exist in both states simultaneously. The power of these machines is predicted to be really outstanding.

Nowadays, this technology is still raw, but just keep in mind Teller's quote. Anything made a long way to be put to use in our lives. Quantum computers are halfway. The past, present and future are united. The whole study started from one question in 1900 and ends up with something unbelievable, which probably is going to dictate the tempo of human scientific development. Anyway, we should expect numerous breakthroughs in this field.

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