Quantum future

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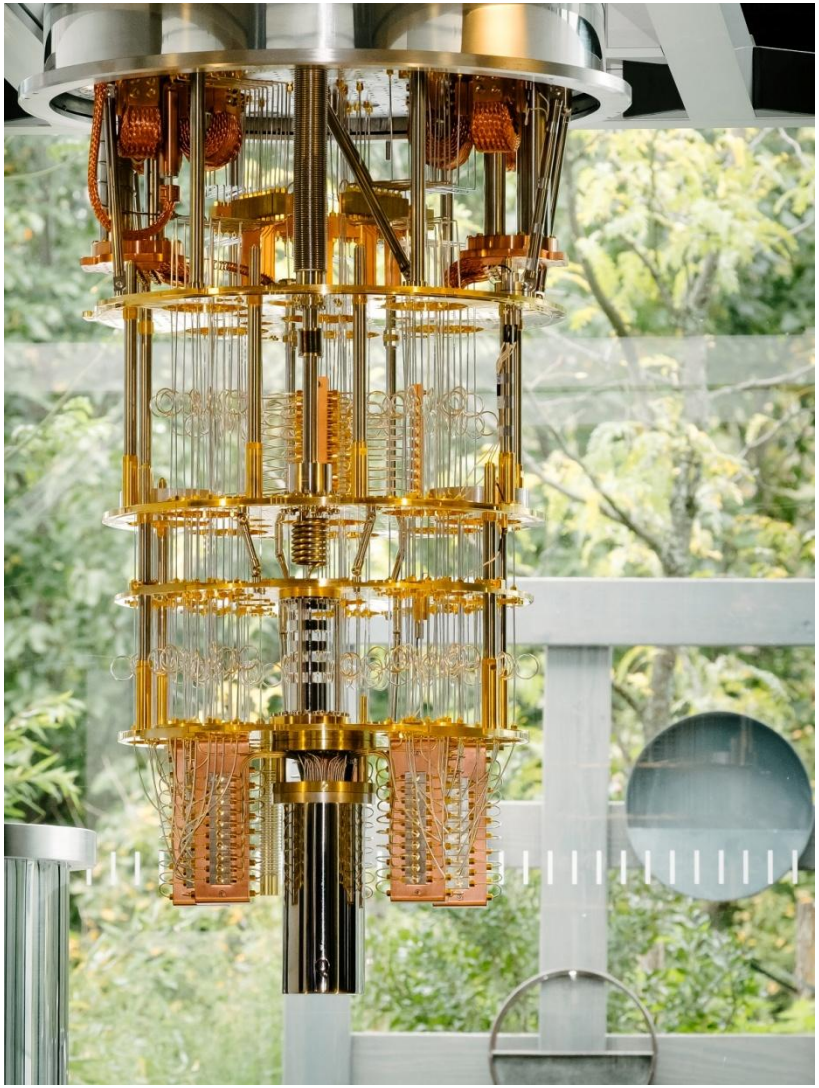
What it is?

- Quantum computer is a computing device that uses the phenomena of quantum superposition and quantum entanglement to transmit and process data.
- A quantum computer does not operate on bits, but on qubits that have values of both 0 and 1. Theoretically, this allows you to process all possible states simultaneously, achieving significant superiority over ordinary computers in a number of algorithms



Why are they not yet, even though they already exist?

- Universal quantum computer is still a hypothetical device, abilities of which are associated with the serious development of quantum theory in the field of many particles and difficult experiments.

Possible uses

- Cryptographic applications
- Due to the enormous speed of decomposition into prime factors, a quantum computer will allow decrypting messages encrypted with the widely used RSA cryptographic algorithm. Until now, this algorithm is considered relatively reliable, since the effective method of decomposing numbers into prime factors for a classical computer is currently unknown.

- Artificial Intelligence Studies
- Quantum computers are in theory well suited for machine learning needs. They manipulate large amounts of data in a single pass and are able to simulate a neural network of exponential size.

- Molecular modeling
- It is assumed that with the help of quantum computers it will be possible to accurately simulate molecular interactions and chemical reactions. Chemical reactions are quantum in nature. For classic computers, only relatively simple molecules can be calculated.

Thanks for attention