Quantum Computing – Current Status and Perspectives

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In recent years, quantum computing has become popular due to its potential ability to solve problems that are beyond possibilities of classical computing infrastructures. The research is still in its early stage, however there are many theoretical quantum algorithms already available, such as famous polynomial time Shor factorization or $O(\sqrt{N})$ complexity Grover search in unsorted database. In this talk, we present introduction to quantum algorithms and current status of publicly available quantum hardware. We also give overview of the new perspectives in research on that topic.