

A hybrid architecture approach for quantum algorithms.

ABSTRACT

Problem statement: In this study, a general plan of hybrid architecture for quantum algorithms is proposed. **Approach:** Analysis of the quantum algorithms shows that these algorithms were hybrid with two parts. First, the relationship of classical and quantum parts of the hybrid algorithms was extracted. Then a general plan of hybrid structure was designed. **Results:** This plan was illustrated the hybrid architecture and the relationship of classical and quantum parts of the algorithms. This general plan was used to increase implementation performance of quantum algorithms. **Conclusion/Recommendations:** Moreover, simulation results of quantum algorithms on the hybrid architecture proved that quantum algorithms can be implemented on the general plan as well.

Keyword: Hybrid architecture; Quantum algorithm; Quantum computing.