

Hybrid Quantum-Classical Networks characteristics and optimization for Error Correction and Noise Mitigation

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Hybrid Quantum-Classical Networks (HQCNs) have emerged as a promising paradigm for harnessing the power of both classical and quantum computing. This paper explores the characteristics and optimizations associated with these networks. Firstly, the characteristics of HQCNs are discussed, including the integration of classical and quantum components, task allocation, parallel processing, and the exploitation of quantum speedup. The paper then delves into optimization techniques in hybrid networks, such as dynamic task allocation, workload distribution, and resource management. Optimizations for error correction and noise mitigation in HQCNs involve fault-tolerant protocols that enhance the resilience of quantum computations to errors and noise. The paper concludes by emphasizing the importance of understanding the characteristics and optimizations in HQCNs to fully leverage their potential for solving complex computational problems efficiently and effectively.

Author: Dr POPIRLAN, Claudiu Ionut (University of Craiova)

Presenter: Dr POPIRLAN, Claudiu Ionut (University of Craiova)

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