Q-LEARN: Optimizing Student Data Analysis With Quantum Computing Algorithms

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Today's technological landscape is rapidly changing, particularly in the field of computer science. Quantum computing and novel algorithms with this technology are gradually being introduced to modern technology. This project explored possible applications for quantum computing algorithms and proposes a program for personalized online learning powered by Grover's Algorithm. Through IBM's Quantum Lab technology and online resources through the quantum software development program, Qiskit, trial data proved the effectiveness of using Grover's Algorithm to search unstructured data sets. IBM Quantum resources are open-source platforms connected to quantum supercomputers where users can run a variety of quantum programs. With these online resources, this project proposes Q-LEARN, a novel program to optimize student data analysis with Grover's Algorithm. This project aims to address difficulties with personalized online learning programs by utilizing quantum computing algorithms to speed-up and increase efficiency in analyzing student academic data and providing tailored learning resources based on individual student needs.

Awards Won: