**Abstract**  
This project explores how quantum computing can enhance machine learning for detecting credit card fraud. It focuses on comparing a Quantum Convolutional Neural Network (QCNN) with a traditional Convolutional Neural Network (CNN) to evaluate whether the quantum model provides better results. Detecting fraud is challenging because financial transaction data is large, complex, and often imbalanced, making it difficult for conventional models to identify patterns accurately. Quantum computing offers advantages such as parallel processing and faster computation, which can help address these challenges. In this study, both CNN and QCNN models were trained on the same dataset, and their performance was compared using standard evaluation metrics. The results showed that the QCNN was more effective at recognizing patterns and learning from the data. These findings suggest that quantum-enhanced models have significant potential for improving fraud detection and encourage further research on applying quantum computing to real-world financial data.

**Keywords:** Quantum Machine Learning, Credit Card Fraud Detection, Quantum Convolutional Neural Network, Convolutional Neural Network, PennyLane, SMOTE, PCA