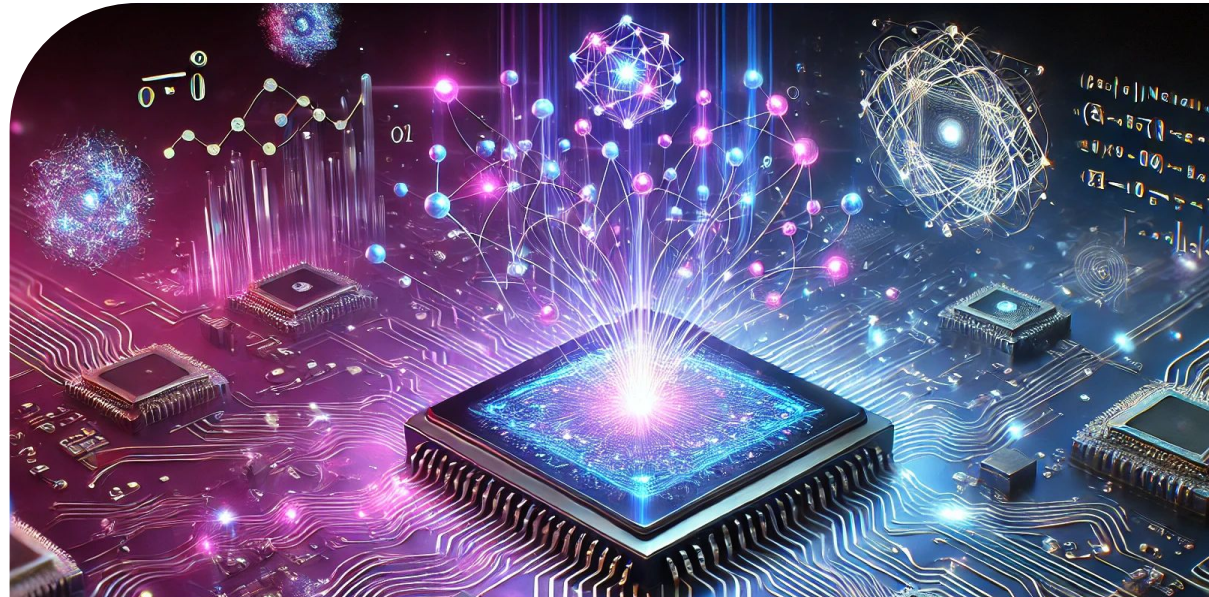# Automated Discovery and Optimization of Quantum Error Correction Codes Using ML

Course: IITM–DA63OO(QML)
Faculty: Chandrashekar, Dhinakaran
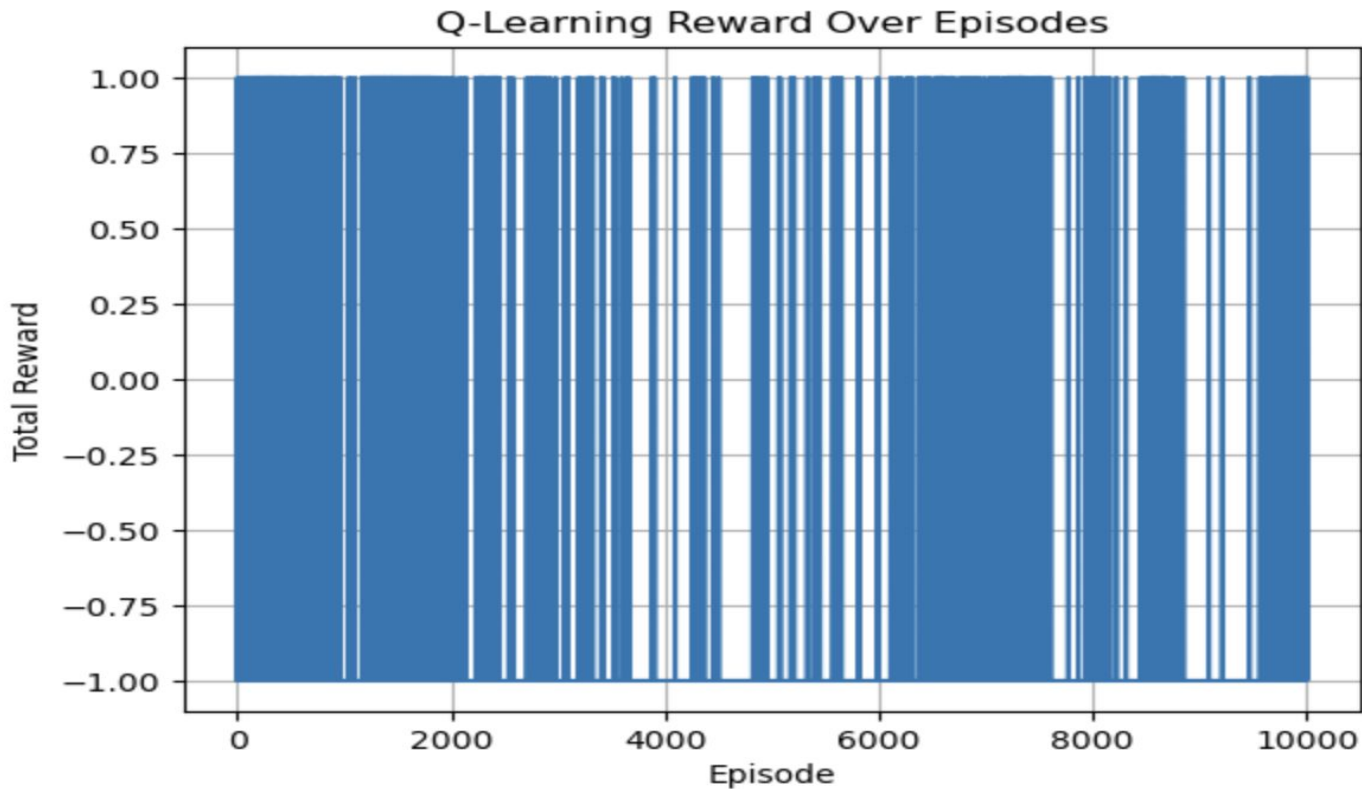
Neeraj Kumar

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Update

- Train and show reward curve
- Prove that RL improves QEC

Cont...

Baseline (random policy) Accuracy: 11.00%

Q-Learning Reward Over Episodes

Trained RL Agent Accuracy: 40.00%

What's Next?

➔ **Move to Surface Code**

◆ Replace bit-flip code with surface code

◆ Encode logical qubit using surface code circuits