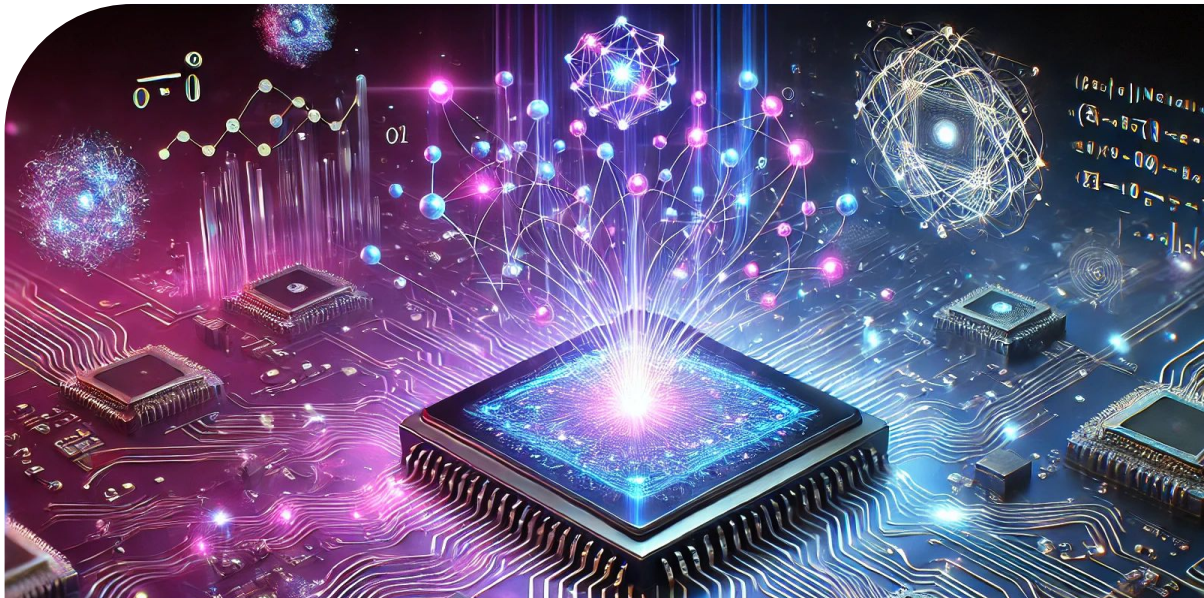
Automated Discovery and Optimization of Quantum Error Correction Codes Using ML

Course: IITM-DA6300(QML)
Faculty: Chandrashekar, Dhinakaran



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Progress

- **Study Quantum Error Correction (QEC) Basics**
- **Set Up the Development Environment** – Install Qiskit, PennyLane, PyTorch/TensorFlow for ML, and Jupyter Notebooks.
- **Implement Basic QEC Code**

What's Next?

- Qiskit and PennyLane handson and tutorials
- Understand stabilizer codes, Shor Code, Surface Code, and their mathematical foundations.
- **Understand Noise Models** – Simulate quantum noise (depolarizing, amplitude damping) in quantum circuits.