Project Title: Image-Based Classification of Indian Currency Notes using Classical, Quantum, and Hybrid ML

Objective: Classify images of ₹100 vs ₹200 notes using three approaches and evaluate each using a unified set of 10 performance metrics.

Workflow Overview

Stage	Description
1. Data Collection & Preprocessing	Currency note image dataset (real or synthetic), resized and normalized
2. Feature Engineering	Raw pixel or extracted visual features
3. Model Training	3 approaches: Traditional CNN, Quantum CNN, and Hybrid CNN+QML
4. Evaluation	Apply 10 performance metrics
5. Analysis	Compare results, interpret metrics

Work allocation (Tentative):

Data Collection, Pre-processing & Feature Engineering	RC Goud
Model Training (Traditional CNN)	Khirod
Model Training (Quantum & Hybrid)	Ravishankar
Evaluation & Analysis	Anjali

Performance metrics:

📏 Performance Metrics (Generalized)

Metric	Traditional AI	Quantum	Hybrid
Accuracy	✓	✓	✓
F1-score / Precision / Recall	✓	✓	✓
Training Time	✓	✓	✓
Inference Time	✓	✓	✓
Quantum Circuit Depth	–	✓	✓
Qubit Usage	–	✓	✓
Fidelity	–	✓	✓
Noise Tolerance	✓	✓	✓
Model Complexity (Params, FLOPs)	✓	✓	✓
Explainability (e.g., SHAP, Circuit Traceability)	✓	✓	✓