Quantum Machine Learning for Solar Panel Fault Detection

Trevor Irvin¹, Sameeksha Katoch², Andreas Spanias², Glen Uehara²


- Dataset contains 10 features with 5 classifications: 4 faults and standard test conditions
- Pre-process data (normalization, one-hot encoding, binary classification split, train/test split)
- Train logistic regression, support vector machine, and neural network models
- Adjust hyperparameters (epochs, solver, penalty, activation function, hidden layers)
- Record results (accuracy, recall, precision, F-score)
- Test results against quantum versions of these models

Logistic Regression

SVM

Neural Network

Accuracies:
LR 88.76%
SVM 91.29%
NN 94.88%