Technical Report

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PROJECT NAME: AI-Powered Image Classification System

1. Model Architecture and Reasoning:

The model implemented is a **Convolutional Neural Network (CNN)** built to classify images from the **CIFAR-10** dataset
Input Layer: 32×32×3 RGB image.

2. Data Preprocessing Methods:

The CIFAR-10 dataset was loaded from TensorFlow/Keras datasets and preprocessed to improve learning performance and model generalization. Steps Applied: Normalization

3. Key Challenges and Improvements Made:

Training models took time about 30 to 45 minutes.

Solution is to Reduced batch size.

4. Final Test Results:


```
test_loss, test_acc = model.evaluate(X_test,y_test, verbose = 1)

print(f'Test Accuracy : {test_acc}\nTestLoss: {test_loss}')
```

```
313/313 ─────────── 29s 93ms/step - accuracy: 0.8152 - loss: 0.7037
Test Accuracy : 0.8162999749183655
TestLoss: 0.7030190229415894
```