

# CSE472: Machine Learning

ID: 1905065

## Instruction to train:

Need to run all cells till this line of code:

```
results, best_model, best_config = find_best_model(learning_rates, architectures, X_train, y_train, X_val, y_val)
```

## Instruction to evaluate:

Need to load X\_test and y\_test in desired format:

```
test_dataset = datasets.FashionMNIST(root='./data', train=False, download=True)
X_test = test_dataset.data.numpy().reshape(-1, 28*28) / 255.0
y_test = test_dataset.targets.numpy()
```

Then, we need to run the last cell for evaluation.

## Evaluating on Test set

```
# Load the best model configuration
with open('best_model_config.pkl', 'rb') as f:
    best_config = pickle.load(f)

# Load the best model
best_model = create_model(hidden_dims=best_config['arch']['hidden_dims'], dropout_rate=best_config['arch']['dropout_rate'], learning_rate=best_config['arch']['learning_rate'])
# print('layer size', len(best_model.layers))
best_model.load_weights('best_model_weights.pkl')

# Evaluate the model on the test set
test_loss, test_acc, test_f1, test_predictions = evaluate(best_model, X_test, y_test)

print(f"Test Loss: {test_loss:.4f}")
print(f"Test Accuracy: {test_acc:.4f}")
print(f"Test F1 Score: {test_f1:.4f}")
```