FNN From Scratch

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Hyperparameters

1. Learning Rate   0.005, 0.001, 0.0005
2. Batch_size   1024
3. Epochs   20, 30, 50
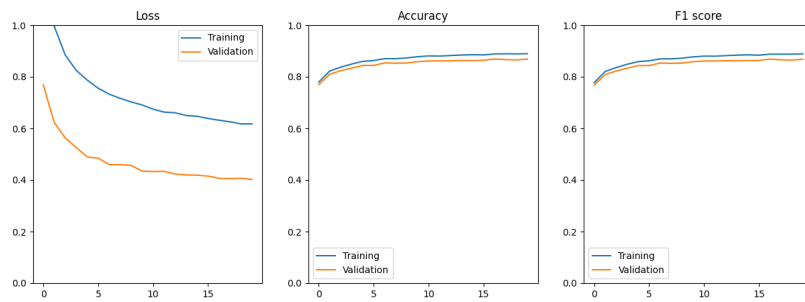4. Weight and Bias saved in pickle
5. Xavier Initialization

Model 1 (Third Best)

```
'id' : 1,
'epochs' : 20,
'batch_size' : 1024,
'model' : [
    Dense(784, 128),
    Dropout(0.5),
    ReLU(),
    Dense(128, 64),
    ReLU(),
    Dense(64, 26),
    Softmax()
],
```

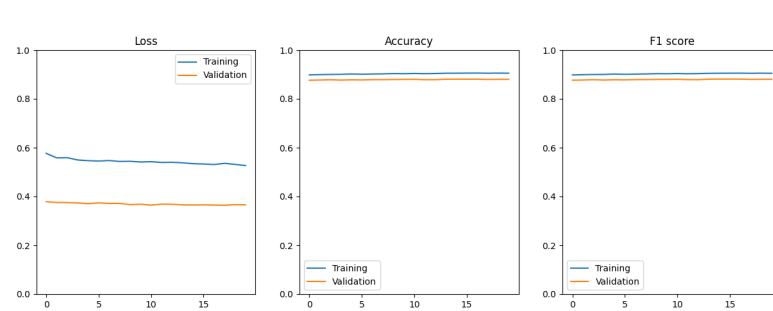LR = 0.005   Test Accuracy: 0.884   Test F1: 0.884

LR = 0.001   Test Accuracy: 0.883   Test F1: 0.882

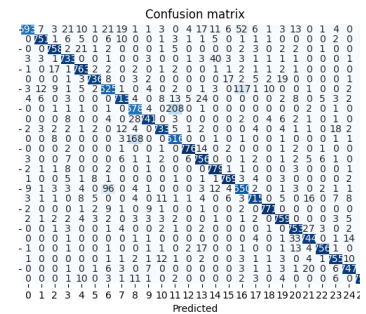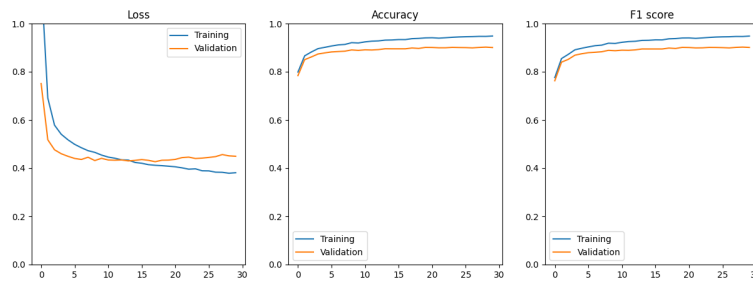LR=0.0005   Test Accuracy: 0.873   Test F1: 0.872
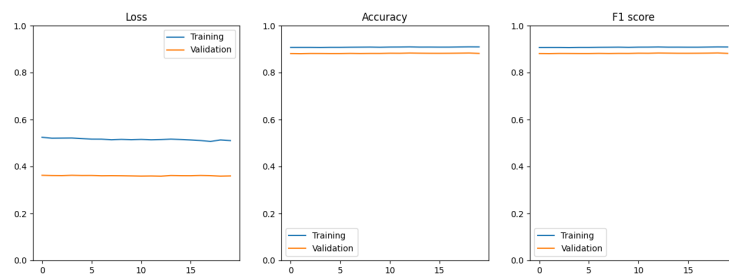
Model 2 (Second Best)

```
'id' : 2,
'epochs' : 30,
'batch_size' : 1024,
'model' : [
    Dense(784, 1024),
    Dropout(0.5),
    ReLU(),
    Dense(1024, 26),
    ReLU(),
    Softmax()
],
```

LR = 0.005   Test Accuracy: 0.918   Test F1: 0.918
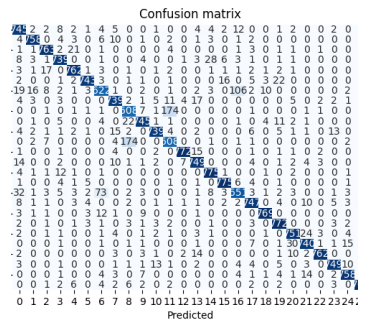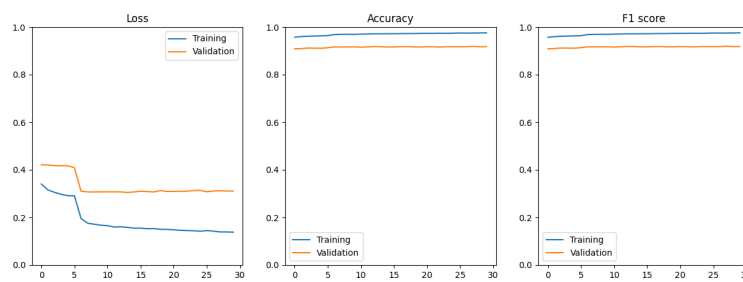
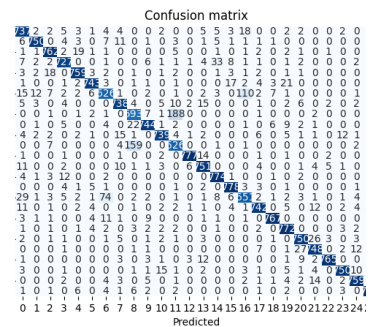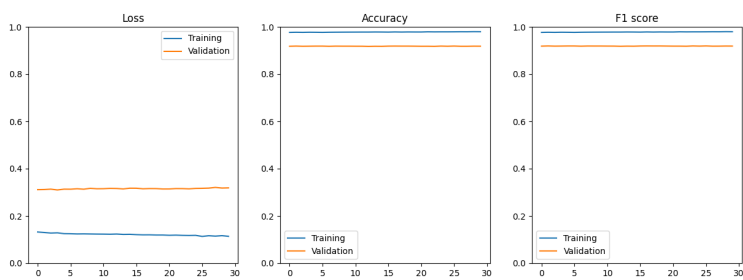

LR = 0.001   Test Accuracy: 0.919   Test F1: 0.919

LR=0.0005   Test Accuracy: 0.905   Test F1: 0.905
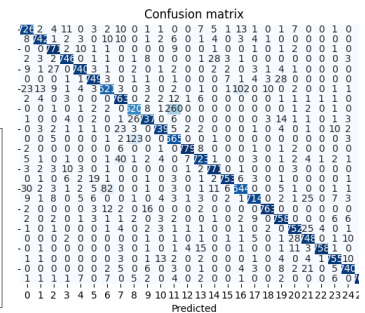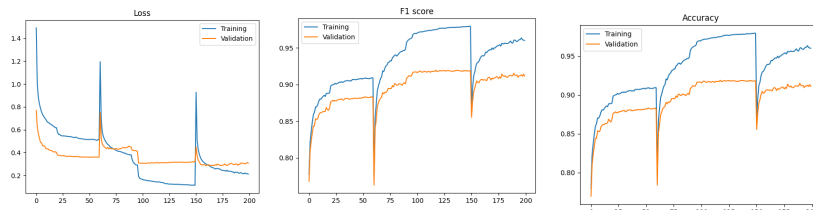
Model 3 (Best)

```
'id' : 3,
'epochs' : 50,
'batch_size' : 1024,
'model' : [
    Dense(784, 1024),
    Dropout(0.5),
    ReLU(),
    Dense(1024, 512),
    ReLU(),
    Dense(512, 26),
    Softmax()
]
```

LR = 0.005   Test Accuracy: 0.924   Test F1: 0.924
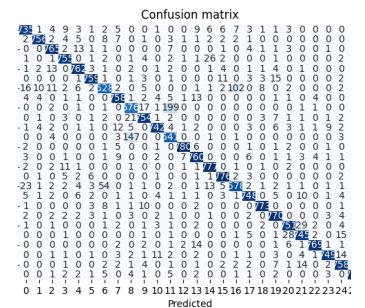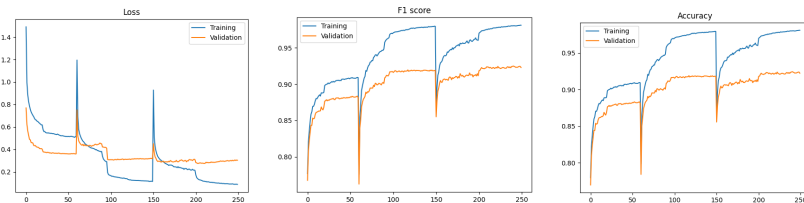

LR = 0.001 (Best)   Test Accuracy: 0.925   Test F1: 0.925

LR=0.0005   Test Accuracy: 0.910   Test F1: 0.911