ML_Report_3

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1 Performance Reports

1.1 Model1

```
<code>Description: Dense(28*28, 50) ReLU() Dense(50, 27) Softmax() batch_size = 128 epochs = 500 learning_rate = 0.001 limit = 128 * 760</code>
```

1.2 Model2

```
<code>Description: Dense(28*28, 50) Dropout(.01) ReLU() Dense(50, 27) Softmax() batch_size = 128 epochs = 100 learning_rate = 0.002 limit = 128 * 760</code>
```

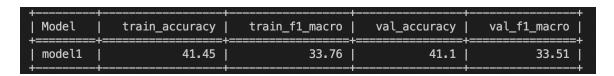


Figure 1: model1 train validation performance

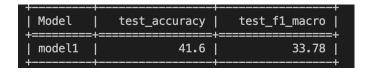


Figure 2: model1 test performance

1.3 Model3

Description: Dense(28*28, 1000) ReLU() Dense(1000, 27) Softmax()

 $batch_size = 128$

epochs = 30

 $learning_rate = 0.005$ limit = 128 * 1400

++ Model	train_accuracy	train_f1_macro	val_accuracy	+ val_f1_macro
model2	3.88 	 0.98 	3.92	 0.95

Figure 3: model2 train validation performance

Model	test_accuracy	test_f1_macro
model2	3.94	1.13

Figure 4: model2 test performance

+ Model	train_accuracy	train_f1_macro	val_accuracy	+ val_f1_macro
model3	47.51	43.78	47.66	43.81

Figure 5: model3 train validation performance

+	test_accuracy	+ test_f1_macro
model3	47.42	43.62

Figure 6: model3 test performance