**Fashion MNIST**

**Baseline**

Classification report:

precision recall f1-score support

0.0 0.85 0.84 0.84 1000

1.0 0.99 0.97 0.98 1000

2.0 0.81 0.80 0.80 1000

3.0 0.90 0.89 0.89 1000

4.0 0.80 0.82 0.81 1000

5.0 0.99 0.88 0.93 1000

6.0 0.75 0.65 0.70 1000

7.0 0.86 0.98 0.91 1000

8.0 0.98 0.96 0.97 1000

9.0 0.83 0.95 0.89 1000

micro avg 0.87 0.87 0.87 10000

macro avg 0.88 0.87 0.87 10000

weighted avg 0.88 0.87 0.87 10000

**Confusion matrix**:

[[840 3 14 16 6 2 83 11 6 19]

[ 1 969 0 17 3 0 3 2 0 5]

[ 12 2 800 11 95 0 50 10 0 20]

[ 17 4 11 888 35 0 25 5 2 13]

[ 1 1 78 28 818 0 47 4 1 22]

[ 0 0 0 0 0 884 0 58 0 58]

[120 0 87 22 61 0 654 12 9 35]

[ 0 0 0 0 0 4 0 977 0 19]

[ 0 0 3 3 4 1 8 14 958 9]

[ 0 0 0 0 0 1 1 44 0 954]]

**Accuracy**: 87.42

**Non-Accelerated Run time:** 20:21:54

**Accelerated Run time:** 03:24:41

**Misclassified Only**

Classification report:

precision recall f1-score support

0.0 0.89 0.73 0.80 1000

1.0 0.99 0.96 0.97 1000

2.0 0.81 0.73 0.77 1000

3.0 0.93 0.82 0.87 1000

4.0 0.84 0.71 0.77 1000

5.0 0.97 0.91 0.94 1000

6.0 0.74 0.59 0.66 1000

7.0 0.69 0.90 0.78 1000

8.0 0.99 0.94 0.96 1000

9.0 0.61 0.97 0.75 1000

micro avg 0.84 0.84 0.84 10000

macro avg 0.85 0.84 0.84 10000

weighted avg 0.84 0.84 0.84 10000

**Confusion matrix**:

[[732 1 7 14 1 1 109 89 5 41]

[ 1 960 0 9 3 0 2 11 0 14]

[ 9 4 735 6 59 0 45 39 0 103]

[ 11 3 4 822 25 0 13 67 0 55]

[ 0 2 93 20 706 0 29 38 0 112]

[ 0 1 0 0 0 908 0 36 0 55]

[ 72 1 61 10 47 0 588 82 4 135]

[ 0 2 0 0 0 17 0 902 0 79]

[ 2 0 5 3 2 4 3 18 938 25]

[ 0 0 0 0 0 2 1 22 0 975]]

**Accuracy**: 84.55

**Non-Accelerated Run time:** 22:28:56

**Accelerated Run time:** 04:31:22

**Misclassified + Marginal**

Classification report:

precision recall f1-score support

0.0 0.85 0.84 0.84 1000

1.0 1.00 0.97 0.98 1000

2.0 0.80 0.80 0.80 1000

3.0 0.90 0.88 0.89 1000

4.0 0.80 0.83 0.81 1000

5.0 0.99 0.89 0.93 1000

6.0 0.77 0.63 0.69 1000

7.0 0.80 0.97 0.88 1000

8.0 0.98 0.95 0.97 1000

9.0 0.86 0.95 0.91 1000

micro avg 0.87 0.87 0.87 10000

macro avg 0.87 0.87 0.87 10000

weighted avg 0.87 0.87 0.87 10000

Confusion matrix:

[[838 1 17 15 6 2 71 37 5 8]

[ 1 972 0 16 4 0 3 3 0 1]

[ 12 0 804 6 94 0 49 19 0 16]

[ 16 3 12 883 33 0 17 28 2 6]

[ 0 0 77 29 828 0 43 7 1 15]

[ 0 0 0 1 0 885 0 63 1 50]

[119 0 92 22 71 0 631 32 9 24]

[ 0 0 0 0 0 5 0 975 0 20]

[ 0 0 3 4 4 3 7 15 954 10]

[ 0 0 0 0 0 1 1 46 0 952]]

**Accuracy**: 87.22

**Non-Accelerated Run time:** 32:43:47

**Accelerated Run time:** 09:51:45