DSE 512 Assignment 4
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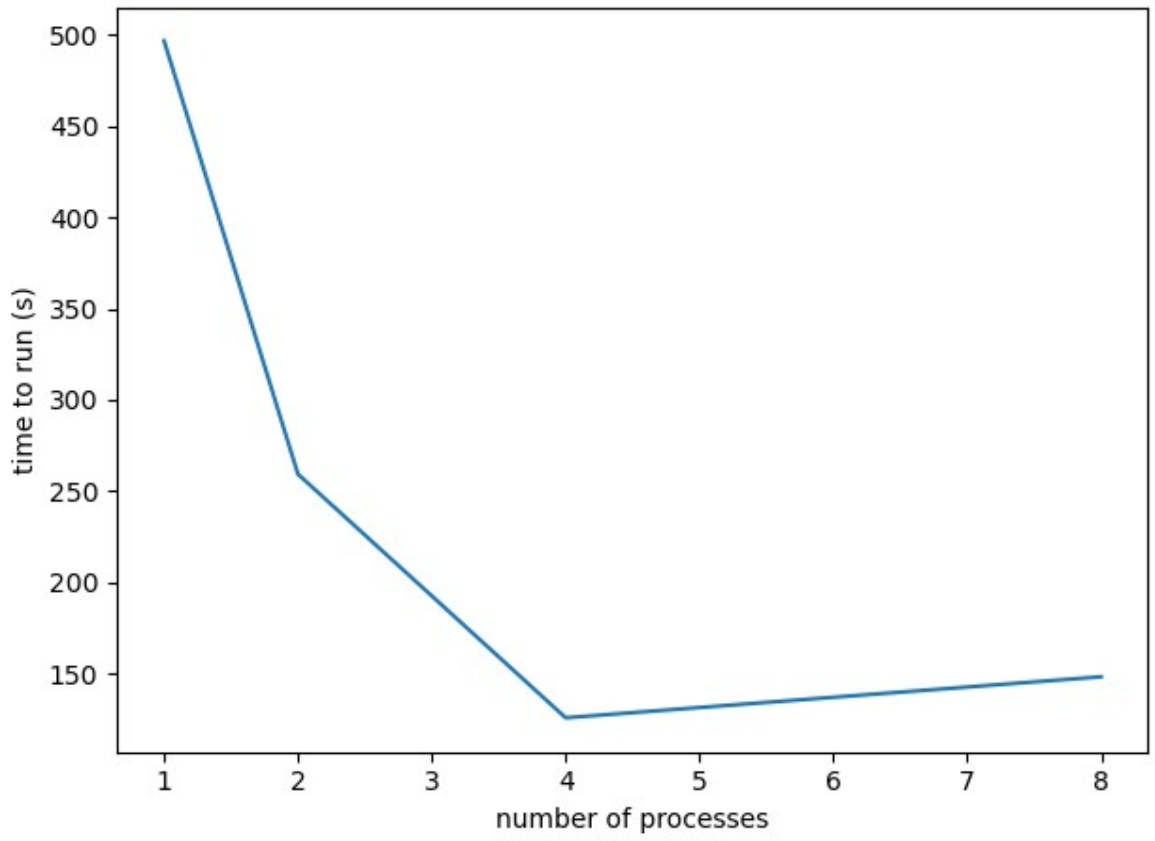
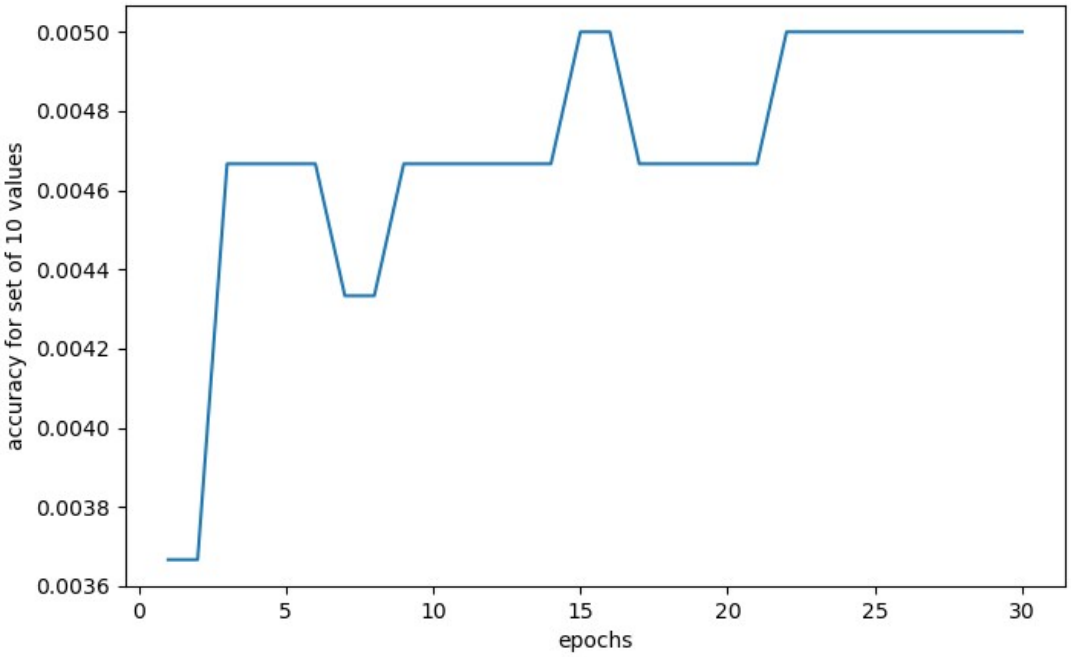
Plots made from results of a modified version training_mnist.py. I also wrote another network in this repo in the file hw4.py which runs correctly before parallelization, but debugging parallelization became very time consuming and it didn't end up getting used.



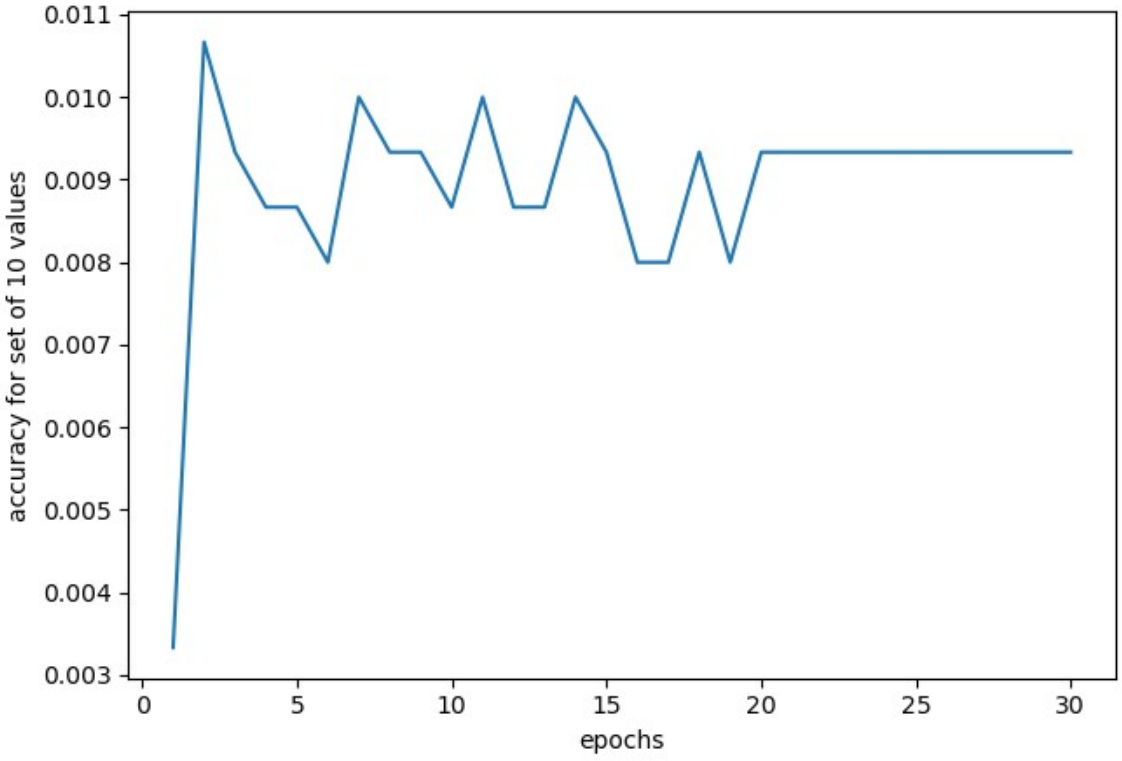
Training time improved up to a point, somewhere around 4 processes. 8 processes didn't show improvement, and was actually slightly slower at least on this run. This is comparable with our introduction to Amdal's law, in that the improvement is significant up to a point and levels off.

Accuracy plots for each number of processes are below. Overall the accuracy was the most accurate a single process, was more or less similar for 2 and 4 process, and became much less accurate for 8 processes. The accuracy measurements seem low since the way I was checking was looking at the accuracy for the tensor of 10 values for each loop.

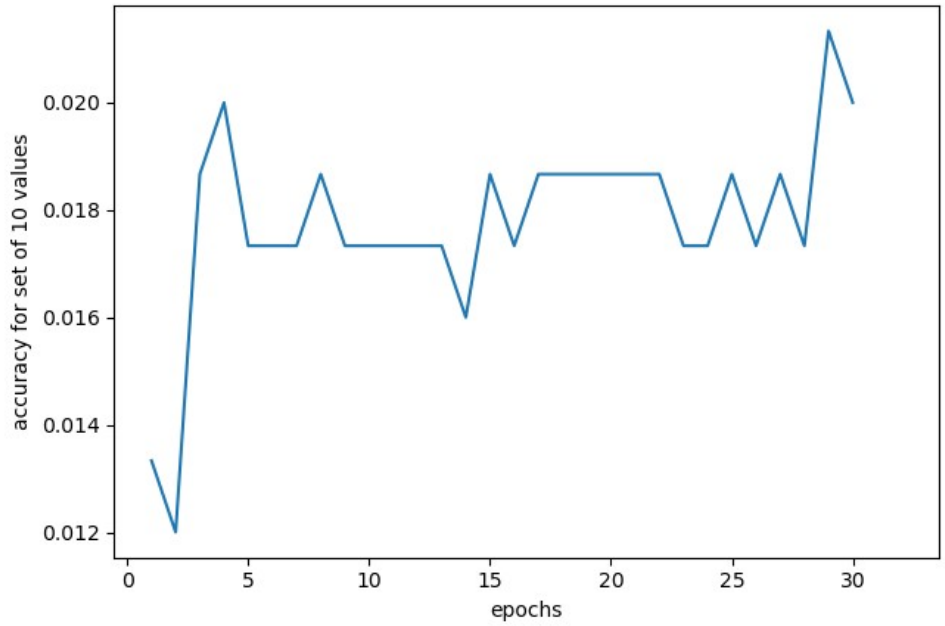
P = 1


0.0050
0.0048
0.0046
0.0044
0.0042
0.0040
0.0038
0.0036
accuracy for set of 10 values
0
5
10
15
20
25
30
epochs

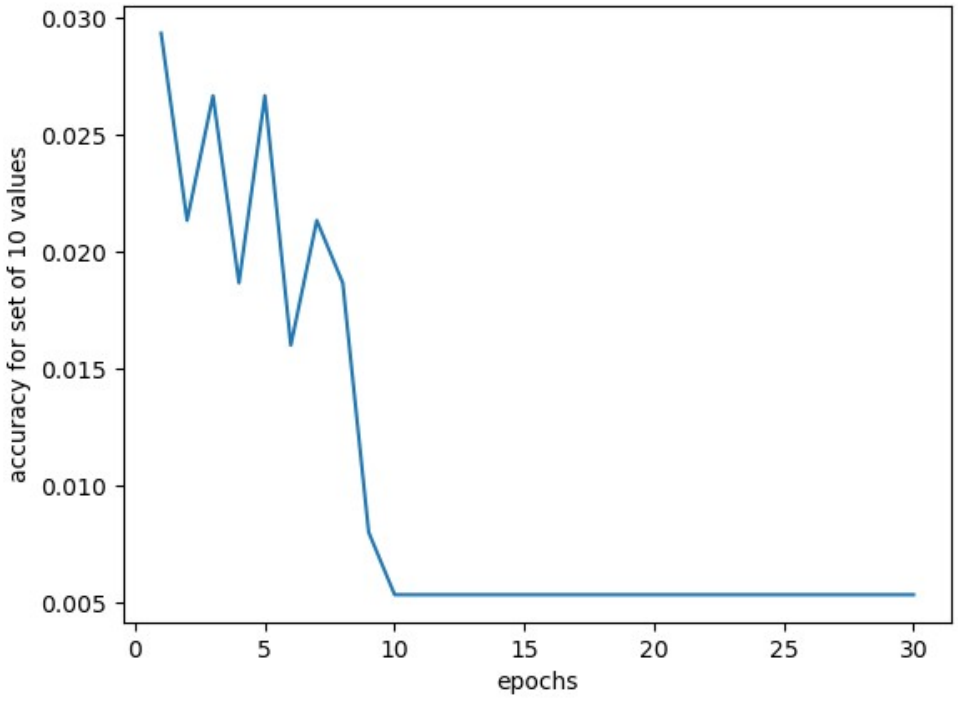
P = 2


0.011
0.010
0.009
0.008
0.007
0.006
0.005
0.004
0.003
accuracy for set of 10 values
0
5
10
15
20
25
30
epochs

P = 4


0.020
0.018
0.016
0.014
0.012
accuracy for set of 10 values
0
5
10
15
20
25
30
epochs

P = 8


0.030
0.025
0.020
0.015
0.010
0.005
accuracy for set of 10 values
0
5
10
15
20
25
30
epochs