Comparison Report

Model Parameters :

vector_size = 28
no_vectors = 28
no_classes = 10
batch_size = 32
learning rate = 0.001
epochs = 20

LSTM

No of Hidden Units	TrainingAccuracy	Test Accuracy
32	81.25	81.87
64	87.5	83.92
128	90.63	84.5
256	87.5	84.29

GRU

No of Hidden Units	TrainingAccuracy	Test Accuracy
32	84.34	78.91
64	87.5	81.21
128	87.5	81.99
256	84.37	81.44

Observation : The performance of GRU is on par with LSTM, but it is computationally more efficient than LSTM because it has less complex structure than LSTM. LSTM has memory unit and 3 gates, while GRU has only 2 gates and no memory unit. So, GRU trains faster than LSTM and easy to modify. For this problem it is giving best results for no of hidden units = 128 for both, LSTM and GRU.

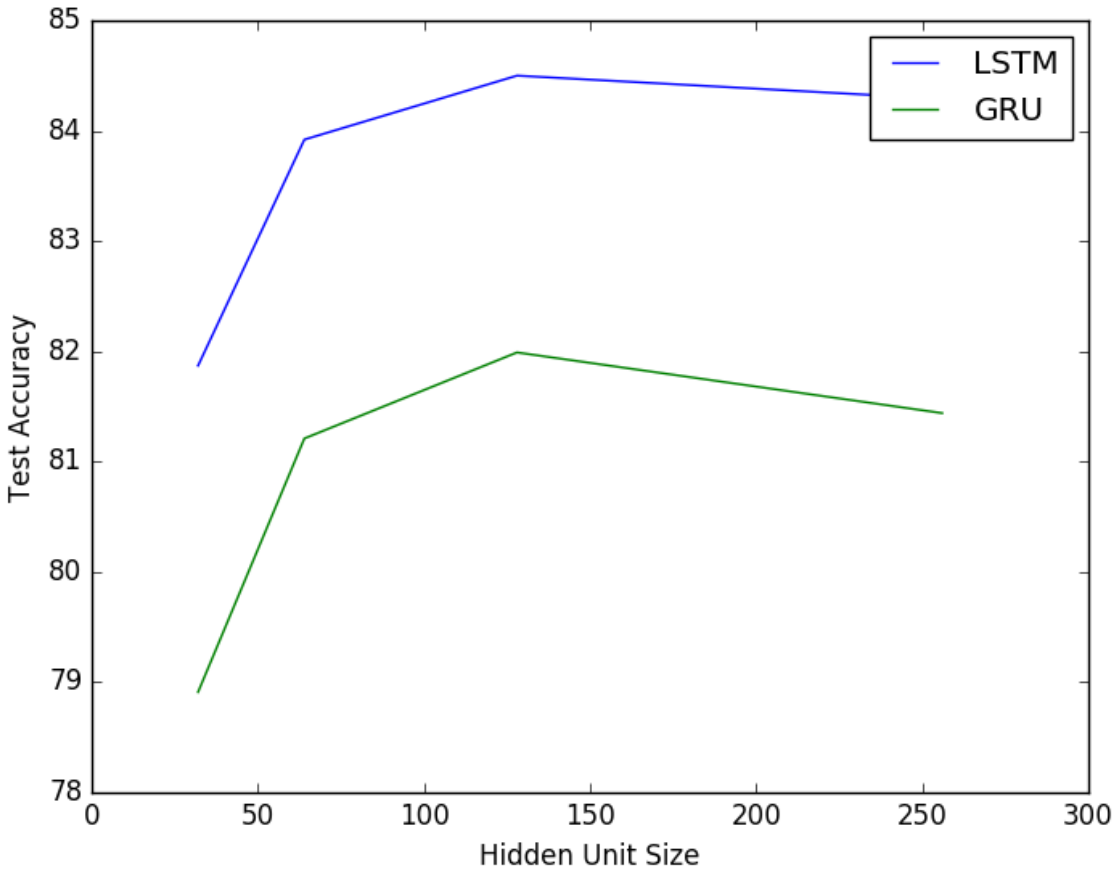

Fig. 1 Performance Comparison