

HW 5 – LSTM and GRU

For the below results, we trained the models for 5 epochs and used the negative log-likelihood loss.

The test set is obtained after a 0.8 train-test split of the dataset.

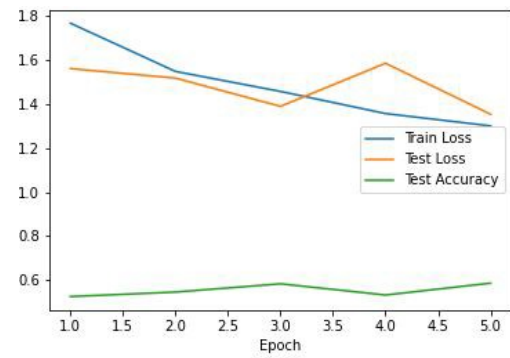
Task1

	Test Set Accuracy for batch_size=1
LSTM, hidden_size=100, layer=1	0.7212
LSTM, hidden_size=200, layer=1	0.7307
LSTM, hidden_size=100, layer=2	0.7558
LSTM, hidden_size=200, layer=2	0.6658
GRU, hidden_size=100, layer=1	0.7237
GRU, hidden_size=200, layer=1	0.7026

Task2

	Graphs of Train/Test Errors and Test Accuracy as a Function of Epoch																								
GRU, hidden_size=200, layer=1, batch_size=1	<table><caption>Data points estimated from the graph</caption><tr><th>Epoch</th><th>Train Loss</th><th>Test Loss</th><th>Test Accuracy</th></tr><tr><td>1.0</td><td>1.20</td><td>1.10</td><td>0.65</td></tr><tr><td>2.0</td><td>0.92</td><td>0.98</td><td>0.71</td></tr><tr><td>3.0</td><td>0.78</td><td>1.02</td><td>0.71</td></tr><tr><td>4.0</td><td>0.68</td><td>1.01</td><td>0.70</td></tr><tr><td>5.0</td><td>0.60</td><td>1.05</td><td>0.71</td></tr></table>	Epoch	Train Loss	Test Loss	Test Accuracy	1.0	1.20	1.10	0.65	2.0	0.92	0.98	0.71	3.0	0.78	1.02	0.71	4.0	0.68	1.01	0.70	5.0	0.60	1.05	0.71
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GRU, hidden_size=200, layer=1,
batch_size=10



GRU, hidden_size=200, layer=1,
batch_size=30

