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Deep Learning Systems

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Comparison of Execution Time of Different Networks

Execution Time Performance (CPU)					
Networks	Data-Load	Compile	Train	Test	Total
MLP	0.438s	0.124s	68.099s	0.885s	69.546s
CNN	0.412s	0.018s	1187.64s	5.025s	1193.095s
RNN	0.607s	0.944s	124.32s	6.728s	132.599s
LSTM	0.62s	1.523s	373.997s	21.902s	398.042s
Autoencoder	0.521s	0.875s	146.194s	6.035s	153.625s

Execution Time Performance (GPU)					
Networks	Data-Load	Compile	Train	Test	Total
MLP	0.608s	0.111s	11.099s	0.349s	12.167s
CNN	0.577s	0.013s	67.221s	0.596s	68.407s
RNN	0.455s	5.706s	42.82s	1.067s	50.048s
LSTM	0.404s	6.225s	41.686s	1.446s	49.761s
Autoencoder	0.296s	5.686s	12s	1.292s	19.274s

Execution Time Performance (TPU)					
Networks	Data-Load	Compile	Train	Test	Total
MLP	0.361s	0.012s	45.546s	1.425s	47.344s
CNN	0.597s	0.022s	123.921s	1.556s	126.096s
RNN	0.351s	0.335s	41.394s	3.937s	46.017s
LSTM	0.572s	1.304s	112.691s	10.036s	124.603s
Autoencoder	0.355s	0.563s	38.689s	2.28s	41.887s

Execution Time Performance (All Hardware Totals)		
Networks	CPU	GPU	TPU
MLP	69.546s	12.167s	47.344s
CNN	1193.095s	68.407s	126.096s
RNN	132.599s	50.048s	46.017s
LSTM	398.042s	49.761s	124.603s
Autoencoder	153.625s	19.274s	41.887s