

## CS 6304 Deep Learning [50 points]

**Purpose:** The purpose of this assignment is to test concepts on building and training LSTM models.

**What to submit:** Submit Jupiter notebook that contains code and proper comments. You do not need to submit the data sets.

Refer to the **Time Series Classification.ipynb** jupyter notebook under week 4. This notebook illustrates how to build and train 1D CNN models to recognize 6 different kinds of human activity based on time series data of 9 features. In this assignment, you will use the same data sets used in the same notebook.

Your goal is to build four models that match the same architecture as the following models in **TextClassification\_LSTM.ipynb** but on the human activity recognition data set. **TextClassification\_LSTM.ipynb** jupyter notebook is under week 5 which illustrates text classification using different LSTM Models.

- **layer1\_lstm\_model**
- **layer2\_lstm\_model**
- **cnn\_lstm\_model**
- **bi\_lstm\_model**

For training parameters such as batch size, optimization algorithm etc, you can use the same provided in the notebook **TextClassification\_LSTM.ipynb**. Use early stopping criterion and save the best model. Report the accuracies on the test set.