## Columbia University IEOR4742 – Deep Learning for OR & FE (Hirsa) Assignment 3 – Due 11:40 am on Thursday March 26th, 2020

Problem 1 (Convolutional Neural Networks): In the sample code code example\_CNN.jpynb

- (b) add two more convolutional layer with max pooling and assess the impact of extra convolutional layers on accuracy
- (a) what are the number of parameters we are trying to learn in the original code and the new one with two extra layers?

Problem 2 (Batch Normalization): For the first problem assess the impact of batch normalization on learning (speed & accuracy)?