CSC 492/592: Special Topics (Deep Learning)
University of Rhode Island

Homework Assignment #1 (Due on Oct 26th at 11:59p)

This assignment is worth a total of 100 points. You will hand in a report for your solution to the *Music Genre Recognition* competition posted on Kaggle (`https://www.kaggle.com/c/uri-dl-hw-1`). Your report must be submitted via Gradescope in **PDF form** and must follow the structure below.

1. (30 pt) Describe your solution to the Kaggle competition. Here you will include a detailed description of your work and provide a justification for the decisions you made during your implementation. The list below shows a few examples of items to be discussed/presented in your description:

   - have you performed any feature transformation or data preprocessing?
   - what is the structure of your classifier/neural network?
   - what activation functions are being used?
   - what is your loss function? have you tried others?
   - are you implementing any sort of regularization? provide details
   - what types of gradient descent are being explored? batch? stochastic?
   - are you implementing any improved optimization? e.g. learning rate schedules or adding momentum
   - how are you performing model selection? is cross-validation being used?
   - what are the hyperparameters you are tuning in your model selection?

2. (30 pt) Report your public/private scores from Kaggle, and indicate all hyperparameter and characteristics of the model that was used for your final submission. In order to earn points your scores need to be higher than the two provided baselines.

3. (40 pt) Include all the source code for your submission (syntax highlighting is highly appreciated in your source code but avoid screenshots and pictures). Points will be deducted for source code that does not include proper comments/style. Proper training/testing procedures are necessary for obtaining full points.