**EL 9123 Intro to Machine Learning Project Plan**

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**Title:** Music Type Detection By Using Deep-Learning

**DataSet:** Million Song Dataset [1] [2]

**Data Size:** Total: 20000 samples**.** 10 Types of Music, 1500 for each type as training, 500 for each type as testing.

**Abstract:**

With the dataset of labeled audio features, the model which can most correctly classify the type of the music is wanted. The Million Song Dataset will be used, and the Deep Learning Convolution Neural Network (CNN) model will be trained based on the samples provided by the dataset. After training the CNN model, another test dataset of the samples for each type will be used as input of the model, to predicted and compared with the correct label in order to evaluate the test accuracy.

**Milestones:**

Discard stereo,

Extract short information slices of the song,

convert audio to frequency domain.

Shown as spectrogram,

Choose Model (CNN?) Tensorflow

Split training and test data.

Reference:

[1] Thierry Bertin-Mahieux, Daniel P.W. Ellis, Brian Whitman, and Paul Lamere.

The Million Song Dataset. In Proceedings of the 12th International Society

for Music Information Retrieval Conference (ISMIR 2011), 2011.

[2] Million Song Dataset, official website by Thierry Bertin-Mahieux,

available at: http://labrosa.ee.columbia.edu/millionsong/