**CS 6375.001 MACHINE LEARNING - SPRING’16**

**PROJECT PROPOSAL**

**Team Members:**

Naveenraj Palanisamy: nxp154130@utdallas.edu

Aparna Pavithran**:** [axp161730@utdallas.edu](mailto:axp161730@utdallas.edu)

**SCENARIO:**

Music is an art, which is enjoyed by almost all sorts of people. It has the power to change the mood of us, release stress, cure diseases etc. But different people listen to music in different ways based on their choice of selection. If you have a collection of songs, which is played by a music player in a shuffled order, will you like a rock song followed by a melody? No one will like to listen to music from one end to another extreme type of music.

**PROPOSED SOLUTION:**

We are proposing a solution for the above scenario, by recommending a song from the given song lists based on the type or genre of the current playing one. We will be using unsupervised learning to associate songs to different clusters and each cluster will be classified accordingly using neural networks. If a new song is added to the current play lists, then it will be classified based on the genre of the newly added one. This can be done by using naïve-based algorithm; hence will give the probability of song belonging to particular cluster. Based on this associated probability song will be suggested to the user. For example: If a user is listening to hip hop song then song with more hip hop probability among the lists will be suggested to user to play next.

**IMPACT:**

Our proposed work will help user to keep mindset in constant phase and enjoy the music to the core.

**RELATED WORK:**

Lot of research is going on in this area to predict songs that user likely to listen next, ours is just once step refined approach by using unsupervised clustering with neural networks and naïve based.

Listed below some related paper works:

* [1]. Music Genre Classification Using Machine Learning Techniques by Sam Clark Danny Park Adrien Guerard
* [2]. Identifying the Emotional Polarity of Song Lyrics through Natural Language Processing Ashley M. Oudenne Swarthmore College Swarthmore, PA aoudenn1@cs.swarthmore.edu Sarah E. Chasins Swarthmore College Swarthmore, PA [schasi1@cs.swarthmore.edu](mailto:schasi1@cs.swarthmore.edu)
* [3]. RHYME AND STYLE FEATURES FOR MUSICAL GENRE CLASSIFICATION BY SONG LYRICS Rudolf Mayer1, Robert Neumayer1,2, and Andreas Rauber1 1Department of Software Technology and Interactive Systems, Vienna University of Technology, Vienna, Austria 2Department of Computer and Information Science, Norwegian University of Science and Technology, Trondheim, Norway

**DATASET:**

We haven’t got the entire data set we are looking for. Looking forward to use some of the data sets from the below given sites which contains wide range of datasets related to songs.

* <http://labrosa.ee.columbia.edu/millionsong/musixmatch>
* <http://www.cp.jku.at/datasets/musiclef/>

**SOFTWARES PLANNING TO USE:**

1. Eclipse
2. Python IDE

**REFERENCES:**

* T. Zhang and C. C. J. Kuo, "Content-based classification and retrieval of audio", Conf. on Advance Signal Processing, Architectures and Implementations VIII
* Unsupervised Content Classification Based Nonrigid Registration of Differently Stained Histology Images Y. Song, D. Treanor, A. J. Bulpitt, N. Wijayathunga, N. Roberts, R. Wilcox, and D. R. Magee
* Classification of Musical Playing Styles using MIDI Information Chet N. Gnegy Center for Computer Research in Music and Acoustics (CCRMA) Stanford University [chet@ccrma.stanford.edu](mailto:chet@ccrma.stanford.edu)