A Survey of Design an Approach for Prediction of Music System

Neelu Sharma[1], Rajesh Boghey[2], Sandeep Rai[3]

[1]M.Tech Scholar, Department of CSE, TIT Excellence, Bhopal (M.P), India[1]
[2]Assistant Professor, Department of IT, TIT, Excellence, Bhopal (M.P), India[2]
[3]Professor & Head, Department of IT, TIT, Excellence, Bhopal (M.P), India[3]

ABSTRACT

: Data mining and machine learning is very necessary and very relevant acts from last decade now this data mining is shifted to Machine Learning. Machine Learning comes by Artificial Intelligence and Mathematical Stats. Machine learning is classified into supervised, unsupervised and reinforcement. In this Paper Authors explains with the progress of technology in music players, especially in inventive cell phones, users have access to large archives. Here we analyse the music portal KKBOX in this work we analyse the different dependent attributes their behaviour and others. Authors used here many algorithms to create different model so that after comparison of different model we can able to say that which will give better result for given data or similar type of data.

Keywords: *Classification Algorithm, Machine Learning, Deep Learning, Decision Tree & Random Forest, ensemble Techniques, CNN.*

I. INTRODUCTION

We know that Data is very crucial item for any industries. We are concentrating over data from 18th century. Then in 19th century computer was evolved after then importance of data is increasing day by day. With the time many technologies come into existence like Database, Datamining, machine learning & Deep learning. We know that the above technology needs abundant amount of data. The use of this work is basically we can detect the prediction of music by any prediction system. We know that rating is very important these days every industry is concentrated the reviews and rating of any product. Previous knowledge will help to predict any behaviour in songs, types of songs, authors etc.

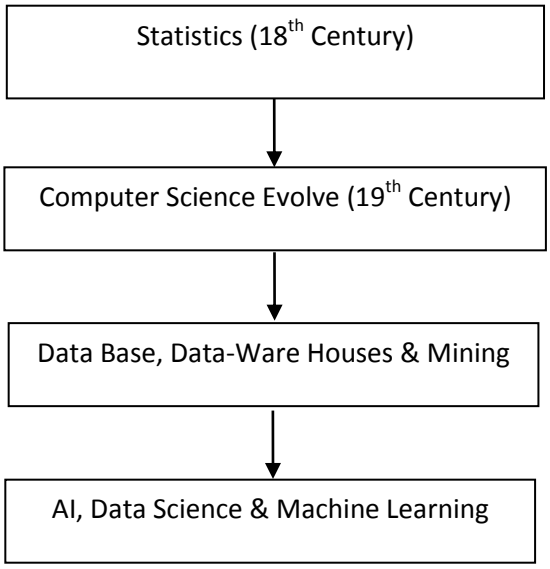

Figure 1: Journey of Data Science

1.1 Data Mining Process

Data mining process contains many steps like Data cleaning, Data integration, Data selection, Data transformation, Data mining, Pattern evaluation, Knowledge presentation.

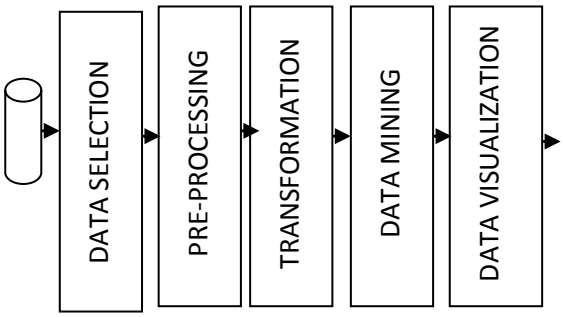

Figure 2: Process of Data Mining

Since we know that data mining process is complex process where we have to apply number of intermediate process. During Intermediate process we concentrate that how data can be filter or refine to the pattern generation.

1.2 Data Mining Techniques

Data mining Algorithms is categorized into different which is given below:

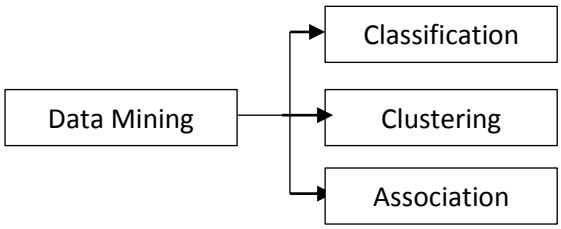

Figure 3: Types of Data Mining

Data mining is categorized in three parts i.e. classification, Clustering & Association. Classification deals with supervision of some level where we classify on the basis of some parameters. Clustering deals with unsupervised mechanism. Finally, Association deals with how one data create penetration over another data.

1.3 Types of Classification Algorithms

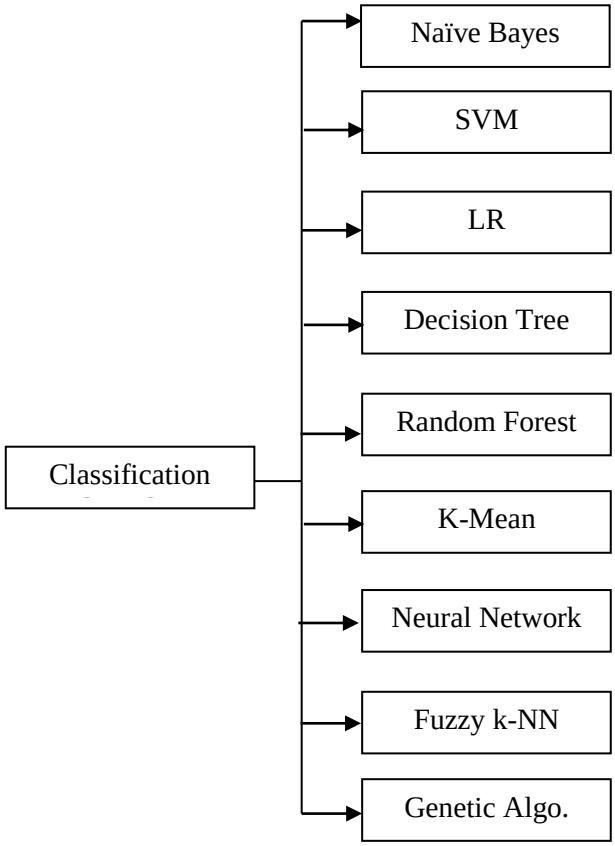

Figure 4: List of classification Algorithms

In the above figure we explained about different classification Algorithms used in Data mining or machine learning domains. In the above image we have different types of classification algorithms like supervised algorithms, Unsupervised Algorithms & Neural networks algorithms which gives much support in deep learning techniques. Fuzzy logic and genic algorithms is very important these days.

1.4 Application of Data Mining

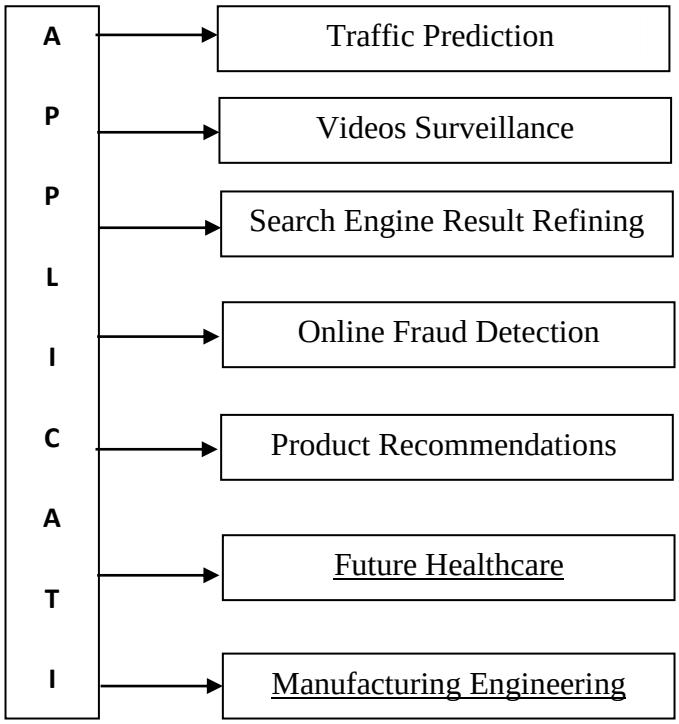

Figure 5: Application of Data mining & ML

II. LITERATURE SURVEY

According to the paper, an integrated music recommendation system is proposed, which includes the functions of automatic music genre classification, automatic music emotion classification and music similarity query. A novel tempo feature, designated as the log-scale modulation frequency coefficient, is presented in this paper. With the AdaBoost algorithm, the proposed tempo feature is combined with timbre features and improves the performance of musical style and emotion classification. [1].

With Cold start for new users or items is a major challenge for systems recommending the problem. New items can be deployed within existing objects using a similarity metric to estimate their ratings. However, the computation of similarity varies by domain and available resources. In this paper, we propose a content-based music referral system, which is based on a set of characteristics derived from psychological studies of music preference. These characteristics, namely, melodious, interpretive, refined, profound and contemporary (music), describe the underlying factors of musical preference compared to superior musical styles [2].

III. PROBLEM IDENTIFICATION

Authors read number of papers relative to music recommendation system and find that many problems is present in many papers which can be improved with following mechanism. We know that all music giant available online Here we are trying to analysis the performance of some of the existing classification

algorithms. For claiming their performance, we have to find the Accuracy and many more parameters. We can take KKBOX Music Portal for analysis because 10 Million tracks available at this platform. This abundant amount of data will help in machine learning algorithms performance detection.

IV. CHALLENGES

There are different challenges in our work some of them is given below:

Dataset Selection: Since we know that in data mining data set play important role in our experiment and analysis. So, we took much time to select data set.

Comparison in Classification: We have number of classification algorithm firstly we have to select 2-3 algorithms to apply some comparison on the basis of different parameters. Finally, we concentrate of Boosting and Ensemble methods because that gives more accurate and better result for this data set.

Language Selection: we know that we have number of programming language by which we can complete our analysis.eg firstly we spend some time on Weka Tools but this tool have some limitation that is why we migrates from weka to Python because this tools or platform have maximum support in Data mining and Big Data. But after reading much documentation we planned for Python Language. And we select Anaconda Framework to accomplish our experiment and analysis.

Figure 5: Block Diagram for languages

V. CONCLUSION

We After studying number of papers and research article related to product recommendation and Music prediction system we conclude that we have numbers of algorithms available to solve these kind of problems we have to apply number of ML Algorithms and find their performance parameter values then we can able to say that which algorithms will give better result. the observation about the previous technique. Our observation different terms and condition. This represents our work should have new approach it may be from ensemble techniques. we adjust training and testing splitting (% values) by this mechanism we get better result. Even though we can take different data set with same algorithms to compare the performance.

REFERENCES

[1] Z. Hyung, J. S. Park, and K. Lee, "Utilizing context-relevant keywords extracted from a large collection of user-generated documents for music discovery," Info. Processing and Management, vol. 53, no. 5, pp. 1185-1200, 2017.

[2] J. B. Schafer, D. Frankowski, J. Herlocker, and S. Sen, "Collaborative filtering recommender systems,"The Adaptive Web: Methods and Strategies of Web Personalization, pp. 291-324, 2007.

[3] M. J. Pazzani and D. Billsus, "Content based recommendation systems," The Adaptive Web: Methods and Strategies of Web Personalization, pp. 325-341, 2007.

[4] E. J. Humphrey, J. P. Bello, and Y. LeCun, "Moving beyond feature design: deep architectures and automatic feature learning in music informatics," in Proc. 13th Int'l Conf. Music Info. Retrieval, pp. 403-408, October 2012.

[5] C. W. Hsu, and C. J. Lin, "A comparison of methods for multiclass support vector machines,"IEEE Tran. Neural Networks, vol. 13, no. 2, pp. 415-425, 2002.

[6] R. E. Fan, K. W. Chang, C. J. Hsieh, X. R. Wang, and C. J. Lin, "LIBLINEAR: a library for large linear classification," J. Machine Learning Research, vol. 9, pp. 1871-1874,2008. [7] A. V. Oord, S. Dieleman, and B. Schrauwen, "Deep content-based music recommendation," in Proc. 26th Int'l Conf. Neural Info. Process. Systems, pp. 2643-2651, December 2013.

[8] J. Salamon, and J. P. Bello, "Deep convolutional neural networks and data augmentation for environmental sound classification," IEEE Sig. Processing Letters, vol. 24, no. 3, pp. 279-283, March 2017.