

## Support Vector Machine based a New Recommendation System for Selecting Movies and Music

P.Ilangovan<sup>a</sup> Shaik.Harshad Ali<sup>b</sup>, Pooja Sharma<sup>c</sup>, and N.Karan<sup>d</sup>

**a**

Assistant Professor, Computer Science and Engineering, Periyar Maniammai Institute of Science and Technology, Thanjavur

**b, c, d**

Final Year, Computer Science and Engineering, Periyar Maniammai Institute of Science and Technology, Thanjavur

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**Abstract:** The current advancements in information technologies made the usage of recommendation systems in our day to day life like ecommerce, shopping portals, and many Over the Top platforms. The OTT platforms play a major role in the entertainment industry. Today entertainment in the form of digital platform is expected for every human life apart from their work. When compared to all the other digital environment music and movie shows remarkable positive effects on human mind apparently human brain. Movie and music are remembered strongly when it is viewed by eyes then listening. Movies and music database got increased and even old movies are available at fingertips through our smart phones. The recent pandemic situation made a new normal environment apart from their regular duties users are facing a lot of challenges in choosing movie and music for them out of the millions in the database. In this paper, we are proposing a new movie music recommendation system using support vector machine. The new recommendation engine will recommend movies and music based on the previous search and users wish to save the time and effort of the users

**Keywords:** Over the Top, Recommendation System, Recommendation Engine, information technology, Entertainment, new normal.

### 1. Introduction

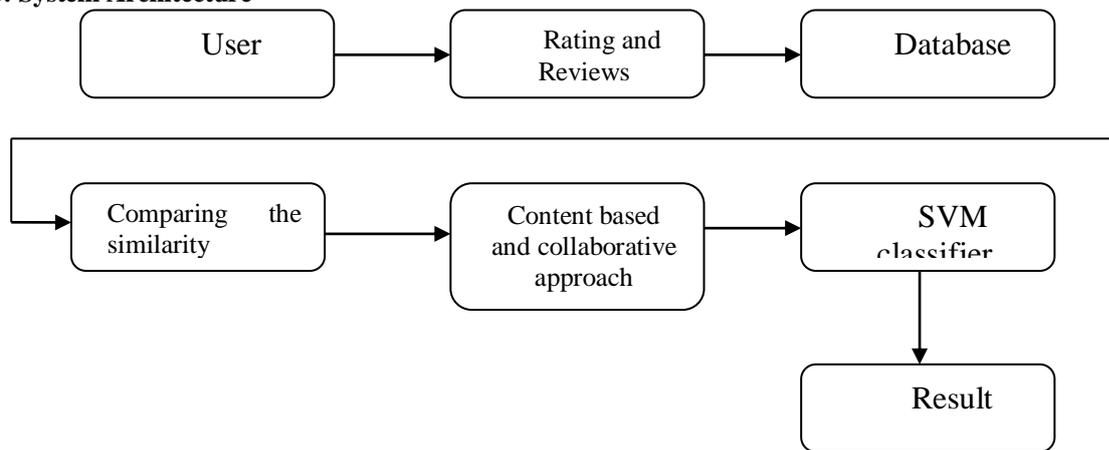
Recommendation System is a search engine which shows the viewers approximately the brand new arrival of movies, music, Internet collection, e-books, e-articles etc. Based on the users search the search engine will endorse the associated films, songs and internet collections. In the cutting-edge pandemic, human beings are compelled to be in brand new virtual surroundings as paintings from domestic. Hence human beings relax and by hearing their favored songs, watching their favorite movies and collection. The utilization of the internet for the direction of looking for 'favorites' has been increasing because of large extent databases being generated for each search. Searching for our favorite songs and films from the massive database is a time taken and tedious process. Today, many researchers are operating in demanding situations to triumph over the boundaries given inside the cutting-edge film song advice device. (Deshmukh, P., & Kale, G); A song advice device is primarily based on the user's song preference. This system enhances the listening skills, finding the correlation among the person records an emotion-conscious customized song advice device (EPMRS) based on cloud architecture. It works on the emotions of the user and advises the engine to endorse the song. (Song, Y., Dixon, S., & Pearce, M, 2012); Today recommender structures are tailored through multiple websites to meet the wishes of the person. Based on the facts furnished by the user a collaborative filtering method is used to suggest the films. (Abdul, A., Chen, J., Liao, H. Y., & Chang, S. H., 2018); The advice device is one of the programs of system mastering that's broadly speaking utilized in looking at books, song, films, news, etc. This advice device is primarily dependent on collaborative filtering and content material filtering methods. Collaborative filtering works on proceeding search by the user. Content material filtering is primarily based on character, person, profile and preference. (Sharma, P. M. B, 2018); In the ocean of content material it's miles hard to look at the content material associated with our search and wish list .The virtual content material builders have commenced attracting on their very own want. (Nayak, R., Mirajkar, A., Rokade, J., & Wadhwa, G, 2018) An up gradation within the cutting-edge exhortation device primarily based on total collaborative filtering method and nearest neighbor set of rules. They decreased the run time of looking at the films which the user wants. (Song, Y., Dixon, S., & Pearce, M , 2012); With the aid of using the facial expression communications of the person the advice engine will suggest films, songs primarily based totally on preceding facial records, feedback and ratings. It collects the dataset within the shape of facial expressions for evaluation functions and it trains the dataset with the usage of supervised mastering for higher performance outcome.

### 2. Related Works

The related works observed and studied from various literature states that different accuracy levels found on the recommendation system using the concepts of artificial intelligence and filtering techniques. The OTT platforms like Amazon, Ghana, spotify are working on the principles of user choice. In all these platforms they collect reviews

from the user and based on the review the recommendation system suggests music on user choice. (Nagamanjula, R., & Pethalakshmi, 2019); A based on the review collected from the user and it is stored in the database and data pre-processing techniques are applied to the data for ranking the movies and music. (Babanne, V., Borgaonkar, M., Katta, M., Kudale, P., & Deshpande, V, 2020); By using the techniques of face acquisition, feature extraction the recommendation system works to recommend movies and music. (Iyer, A. V., Pasad, V., Sankhe, S. R., & Prajapati, K, 2017); An android apps is developed to capture the facial expression of the user and based on the facial expression the recommendation system works to advice the movies and music. By adding additional values to the existing system our proposed system works by using the methodology of collaborative based filtering, content based filtering and hybrid based filtering techniques and the support vector machine classification algorithm recommends movies and music in a single platform to the user.

**3. System Architecture**



**Figure.1** Process flow of the new movie music recommendation system

The Fig. 1 shows the process flow of the new movie music recommendation system. The user rating and reviews are recorded in the database and comparing the similarities between the rating and reviews based on the content based filtering and collaborative based filtering approach the support vector machine algorithm classifies the movie and music and recommended the entertainment on the user wish. The main objective of this work is without switching over to multiple platforms the user can select the movie and music in a single platform.

**4. Recommendation System for movie and music**

The proposed new movie music recommendation system has four working phases. They are, User rating and reviews, comparing the similarity among the users, filtering approach and data analysis techniques and recommendation system.

**4.1 User rating and reviews**

The user enters to the software by entering the login credentials in the user interface provided to him. He is allowed to watch movies and music in the database and based on his wish he can rate and review the movies and music. The rating and reviews are stored in the database and displayed in the portal.

**4.2 Comparing the similarity among the users**

In this phase if two users have given same reviews for the music and movies the similarity among the two reviews are analyzed which possibility will be high enough to recommend the movie and music.

**4.3 Filtering approach and data analysis techniques**

The database is applied to undergo filtering approaches and data analysis techniques. In this work collaborative based filtering and content based filtering approaches are applied to the database. (Shakirova, E, 2017); Collaborative filtering is based on user preference on movie and music and content based filtering is on like provided by the user.

**4.4 Recommendation system**

The recommendation system works on the principle of support vector machine algorithm to recommend the movies and music in a single platform. This may reduce the time of searching the movies and music in the OTT platform.

**5. Working Methodology**

The Fig. 2 explains the proposed working methodology of the movie music recommendation consist of phases are database management, data retrieval, building a new recommendation system, integration of recommendation system, and recommended result.

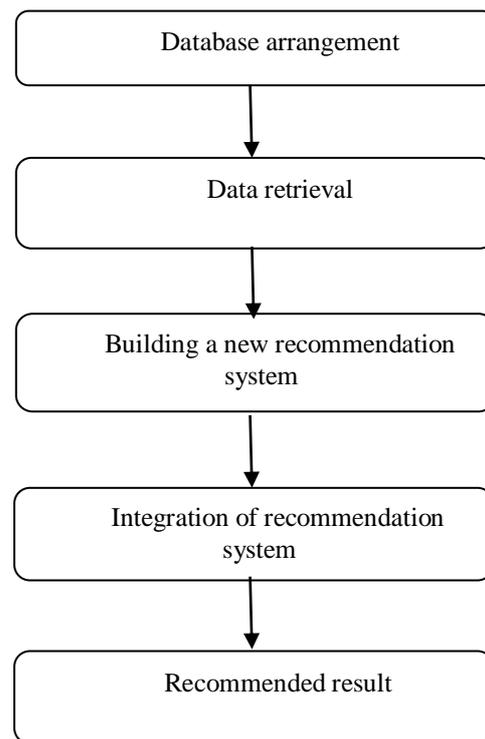


Figure 2 Phase of the movie music recommendation system

5.1 Database arrangement:

Dataset plays a major role in this proposed recommendation system. Most of the datasets are obtained from the internet sources like kaggle and movie lens.com. The fig. 3a and fig. 3b is the database downloaded from the internet. The rich unorganized data are collected and converted into organized form of attributes like movie name, year of release, genre etc. The collected database is related to each other because the movie will be retrieved or the music will also be retrieved in the same way. A special attention is been given to the dataset used in this proposed recommendation system

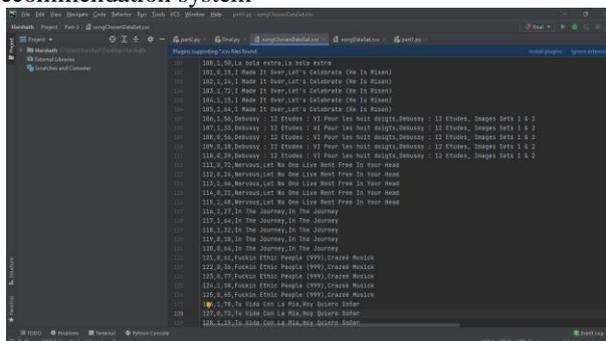


Figure 3 a. database of the movie

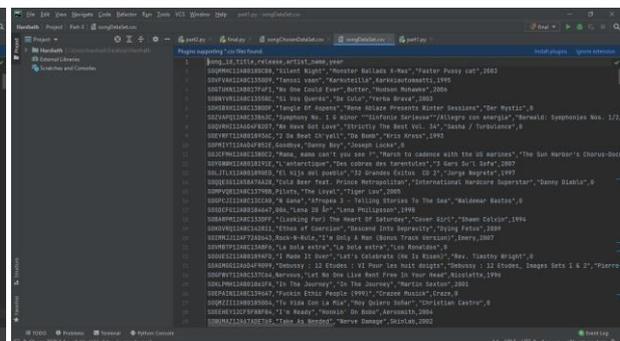


Figure 3 b database of music

5.2 Data retrieval

The user data collected as rating and reviews and these rating and review are taken as deciding factors in this proposed work. By using user reviews and rating the recommendation system makes the dataset personalized. The user parameters like name, age, gender, genre he would like to watch are some of our parameters collected from the user and stored in the database. In this stage data pre-processing techniques are applied to remove the noisy and null data from the database.

5.3 Building a new recommendation system:

The proposed recommendation system recommends the music and movies are designed with a user interface designed and developed in python. The dataset is loaded into the user interface as csv files. The content based filtering and collaborative based filtering approaches are used to implement internally and it works separately on movies and music.

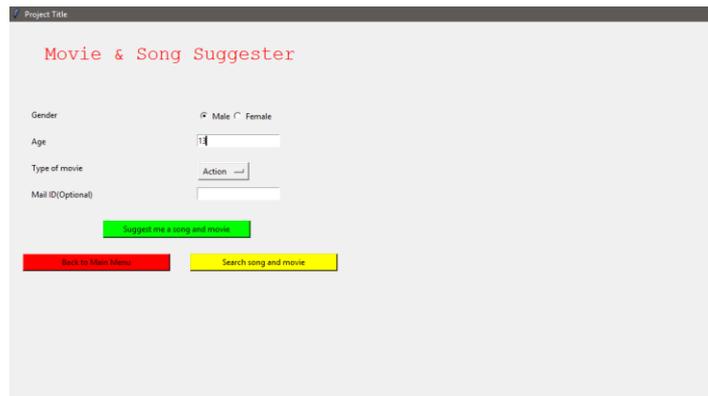


Figure 4 screenshot of the movie and song suggesting menu

**5.4 Integration of recommendation system**

In the fourth phase the recommendation systems which recommend movie music are integrated by using hybrid filtering techniques. The support vector machine algorithm of machine learning is used to recommend both music and movies based on the classification. Other than this if user wants to search something he could enter the key word or movie name or song name the system will perform search action and fetch his output



Figure 5 a Search bar for movies



Figure 5 b Search bar for music

**5.5 Recommended result**

Now the recommendation system is ready for the user. He can get the desired movie or music based on the search data available in the database. Support Vector Machines are supervised models in machine learning. By using the support vector classification algorithm the recommendation system classifies the rating and review of the user given for a movie and music. The classification results recommend the movie and music for the user as per his wish list. The Fig. 6 shows the recommendation system recommends the movie and music to the user. The proposed recommendation system works on the accuracy rate of 85% towards their users search and fetches the result as per his wish. Additionally the user want to search through the search bar the search result of movie and music will be suggested to him through email besides the user will get onscreen notification of his search.

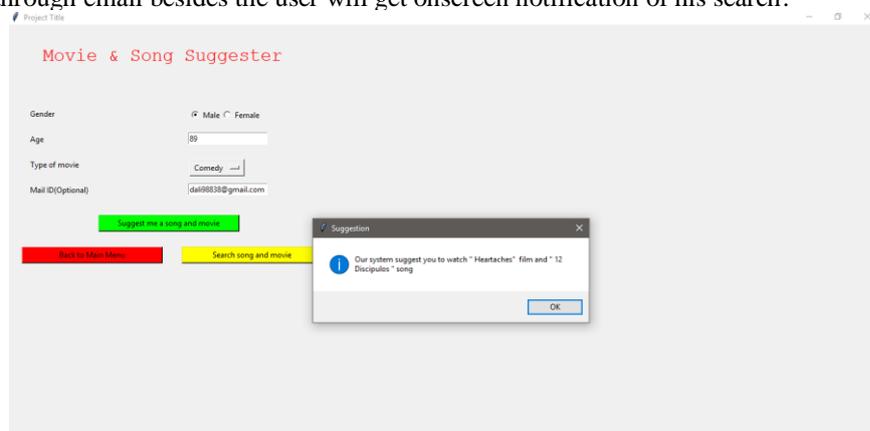


Figure 6 the recommendation system recommends the music to the user

**Conclusion**

The proposed movie music recommendation system saves time for the user to search his favourites and provides the user all in one platform. This could be an easy mechanism in the over the top platforms which gives a new experience in the online entertainment industry. In the current advancement of technology the new recommendation

system using SVM classification can suggest movies and music. In future the deep learning techniques can be used to improve the recommendation system and overcoming its drawbacks.

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