

# Entertainment Recommendation System Using Artificial Intelligence

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## -----ABSTRACT-----

**Recommendation systems have gained a huge popularity over the past few years. Our aim is to use the on movies. The existing system have only genre wise categorization. Our system extracts the expression of the user using emotion analyzing questions and also face recognition. The user will be answering the questions provide or they can upload their photo to detect the emotions they give on the picture. The psychometric questions we provide will help us to find the current mood of the user and we will suggest the movies based on them. The face expression recognition system gives the emotion, age, gender and it will help us to find the emotions and based on that we suggest the movies and series. This recommendation system helps and simplifies the searching for movies based on their tastes and current mood of them. The existing websites have only genre based classification of movies. In our system we added the features emotion detection and face expression detection to find the current mood of user and suggest movies based on their current need.**

**Keywords - Emotion detection, Recommendation system.**

## I. INTRODUCTION

World is progressing very fast today. The growth of entertainment also increased in large numbers. Nowadays people have lot of opportunities to watch plenty of movies not only on theatre but also on mobile phones and laptops. They have lot of movie streaming platforms. In these movies streaming platforms they give trending movies and highly rated movies and series. People get lot of confusion on selecting the movies based on their tastes and mood. It is difficult to find the movie which will suitable for their current mood. The various movie streaming platforms are trying to get lot of user and the business growth of those websites are enormous in recent years. The users using these websites are also increasing daily. In this time, we provide the recommendation system to help the user to choose the movies based on their mood and taste.

The system will extract the emotion of the user by the psychometric questions and by the responses we get we find the current mood of the user and suggest the movies based on the responses we get and emotion we detected.

In our system, we also implement the face recognition and extract the emotion, age, gender of the user and it will suggest the list of movies based on the mood and face expression they give in the picture. The implementation of these two emotion detection method we provide the list of movies. The paper is organized in such a way that section I is focused on motivation. System components are diagnosed in the section II. Section III shows the proposed system. The Section V reflects the system operational description. The paper is concluded with discussion on conclusions and future works.

## II. MOTIVATION

### 2.1 Recommendation system

There are lot of movie streaming applications in recent days where they provide lot of movies for their users and the problem we try to solve in our project is to solve the confusion of the users of choosing the movies they should. We recommend the list of movies for their emotions extracting them from the psychometric tests and face emotion detection mechanism. We implement these emotion detection mechanism in the already existed genre classification.

Thus this system developed in this paper provides the necessary solution for the problem.

## III. SYSTEM COMPONENTS

The system components have software sections. These are elaborated as under:

### 3.1 Software Section

#### 1. Genre classification system

In this page we give the genre selection options and the user can choose on which genre they need to watch the movies by simply clicking on the genres displayed. Here we have displayed eight genres like Action, drama, comedy, horror, historical. Each genre may have more than 30 movies which were arranged in the order of highly rated to low rated. On clicking any on the genre, it will list the movies in that genre. This will simplify the work of searching the required genre movies.

In the list you can select the movies you would like to watch. The one used in our system is shown in Figure 1.

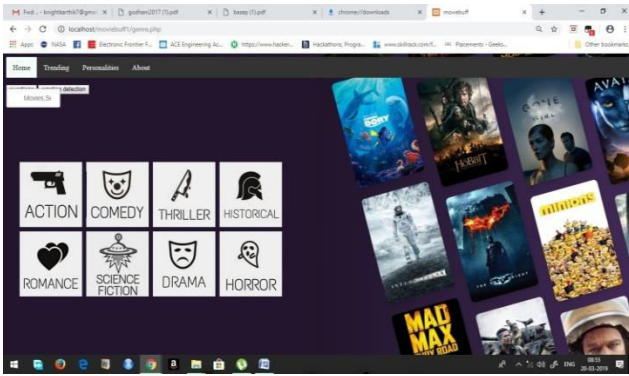


Fig 1: Genre classification

2. Search operation

In our search box, the user can type the required movie or series name, we will give the complete information about the searched movie. The search operation is showed in fig.2.

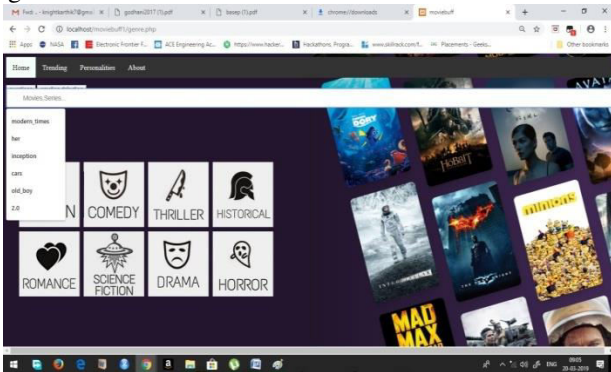


Fig 2: Search operation

3. Emotion detection system

In the homepage, we have a button as “emotion detection” as shown in Figure 3, on clicking the button page will be navigated to the emotion detection page as shown in Figure 4, in that page the user should upload their picture, where we can identify the emotions and display the set of movies based on their mood and the facial expressions.

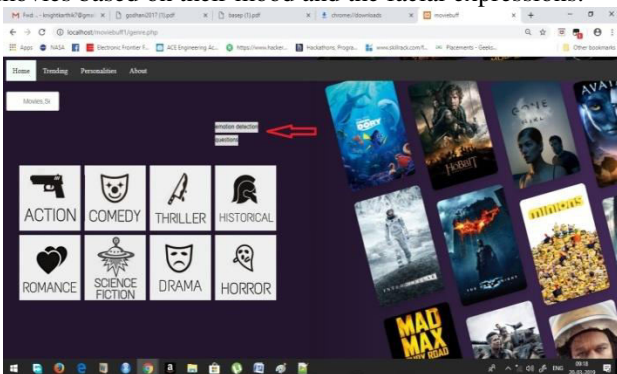


Fig : 3

It shows the position of button and where it is located on the website.

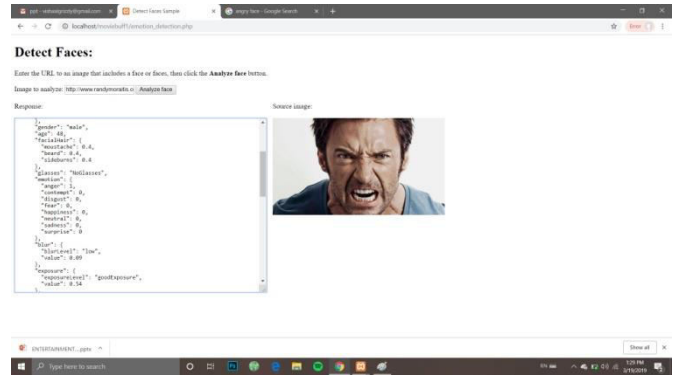


Fig :4

In the above window, we get the picture of the user and find the emotion with their facial expression in the picture. With the information we get in the picture analysis.

4. Movie information window

In this module, the complete information about the movie will be displayed. The movie which is searched and the final information of every action we did in before modules. It contain name and the detailed information of the movies.

It is shown in figure 5

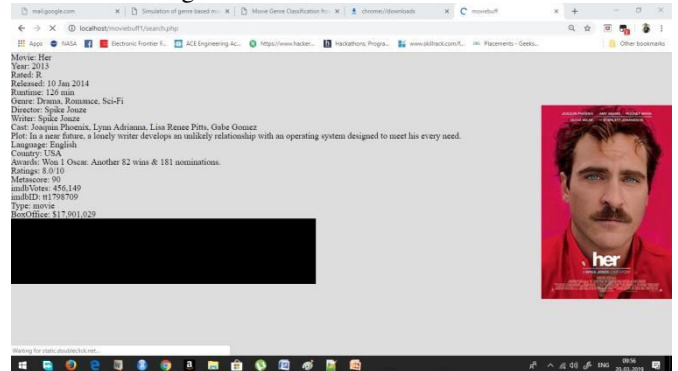


Fig 5: Movie information window

The final display of any operation done in this website came to end at this window which shows the complete information about movies which were searched and suggestions we provided.

IV. PROPOSED SYSTEM

The system reduces the confusion of users over selecting the movies they need to watch. They get into lot of confusions while they use movie streaming applications. There are plenty of movie streaming applications available in the digital market and people get more opportunity to watch more movies and they get confused on selecting the movie which would be suitable for them to spend time with. We recommend the movies which would be suitable for their mood and the emotions based on the face detection mechanism and the psychometric analysis. By using these mechanism we suggest list of movies they can watch on their preferred movie streaming applications. In the face expression detection, we extracts their age, gender, current mood for suggesting the movies based on the expression they gave in the picture. This will help the user to reduce their confusion over selecting the movies based upon their emotions and mood.

## V. SECURITY SYSTEM USED

The Advanced Encryption Standard (AES) is a symmetric-key block cipher algorithm and U.S. government standard for secure and classified data encryption and decryption. The AES has three fixed 128-bit block ciphers with cryptographic key sizes of 128, 192 and 256 bits. Key size is unlimited, whereas the block size maximum is 256 bits. The AES design is based on a substitution-permutation network (SPN) and does not use the Data Encryption Standard (DES) Feistel network. The AES replaced the DES with new and updated features. Block encryption implementation. It uses 128-bit group encryption with 128, 192 and 256-bit key lengths. Symmetric algorithm requires only one encryption and decryption key.

## VI. SYSTEM ARCHITECTURAL DESIGN

Our system is depicted in Figure 6

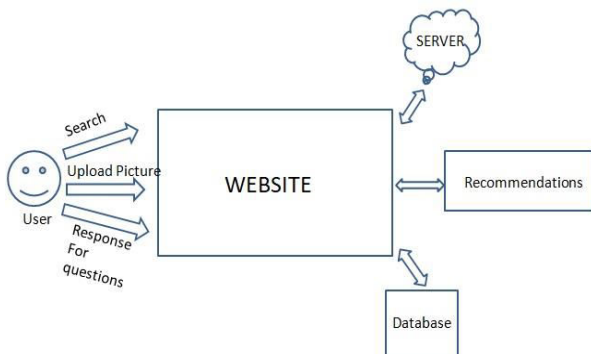


Fig 6:Block Diagram.

Our recommendation system consists of some input methods which will help us to suggest the movies for them to watch. There are 3 ways of inputs to the website. One input is done by the search bar where the user can search the movies they needed. They will get the movie information they have searched. The next way of input is through answering the psychometric questions we provide to the user. They need answer the questions. The next way of giving input to the website is by uploading the picture and after uploading we will analyse the picture. These are input methods of the website. Our website works on the local server on the xampp application by which we can run the website on local host. We use the online database and by the APIs available on the google. The database contain the information of every movies and the we extract the information from them using he API key. We filter the required information by some input methods. The next step after getting information from the database and the inputs we analyse and display the list of movies required for the user of their current emotional status and the facial expression gave in the picture. With the above operations we can extract the feeling and emotion of user and we can suggest the movies as such. The final page gives the detailed information of the movies they suggested and also they have searched. It will surely reduce the time of searching for right movie to watch and spend time in that.

It will reduce the confusion over selecting the streaming application which provide enormous number of movies. The implementation of the psychometric test and face detection mechanism can help the user to get the list of movies as per their mood.

## VII. CONCLUSION & FUTURE WORK

The users and the viewers can get the movies as per their taste and current mood. This is the solution we tried to give in our project and we had done it. The implementation of the face recognition is the advanced feature of our project which can extract us the emotion and additional information about the picture. The implementation of psychometric test is also added to extract the emotion and mood of the viewers. The future works of our project is to add our project to other online streaming platforms and also suggest the movies according to their previously watched movies and extracting their taste of movie watching and suggesting based on their in genre wise and also their personal wise.

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