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Movie Recommendation System Using Machine Learning

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Abstract: In todays world ,the recommendation system are grownly important. Peoples now days finding out best services or products for themselves.
Due to this, the recommendation system are important as they helping to make the right choice, without expending the cognitive resource.
In this article, we aim to reduce human efforts by giving him the suggestion, to the users on the basis of their interest. we use Collaborative recommendation by implementing K-Nearest Neighbors algorithm.
Collaborative filtering technique most widely used by recommendation system. Collaborative filtering predicts the user choice in item selection based on the known user rating of the items. It is effective for solving the information overload problem.'
Collaborative filtering can be divided into two main branches, Memory based collaborative filtering and model based collaborative filtering.

Keyword: Recommendation System, Movie Recommendation System, KNN, Machine Learning.

INTRODUCTION

Machine learning , Deep learning, data mining, the Internet of things (IoT), etc this are brings us by the evolution of technology. We use this technology to satisfy need of the society in each work. Power shell, IoT, cloud computing, AI, Virtualization of image, this are the real life applications and many more.
For utilize the information, communicate, store and fetch, we use the mode which is IT. To preserve and share the information all are the industries, organization and every individual using this computer systems. Nowadays, everybody is moving towards the accomplishing their objectives as we know the world is becoming quicker day by day. this all things are prompted the innovation of recommendation systems.
Recommendation system is become very well known nowadays, because personal need some more time for the market for purchase things, not simply that, they don't have that opportunity to pich right between things. Few years ago user need to confirm what book to purchase, and what music to tune in to, and what kind of pictures to watch and many more.
That's why ancient Recommendation Systems is compulsory for the enthusiasm for customers and movie service providers. The day by day improvement of movie recommendation system, customer have no pain to settle on choices and the industries can keep their client gather in a new clients by to improve user satisfaction.
And now, Modern technologies which is ML, Deep learning plays the important role for the process flexible technology for the day by day tasks.

I.LITERATURE SURVEY

MOVREC proposed by Kumar et al., movie recommendation system which is based on collaborative filtering approach. this filtering technique takes the data from all the users and based on that it generates recommendations for the user's.
Virek et al. proposed A Hybrid recommendation system. This technique combines the both content based and collaborative filtering technique.
De Campos et al. also made analysis of both of this recommendation filtering techniques.
As both of these techniques have certain parameters/setbacks, he proposed another system which is combo. of Bayesian Network and collaborative filtering technique.
Kuzelewska proposed clustering were analyzed. Chiru et al. presents Movie recommendation system, a system that uses user's history in order to generate recommendation, The various kinds of techniques used for recommendations, collaborative, hybrid and content-based technique recommendations analyzed by sharma and maan.

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The previous recommendation system had certain gaps in them:
The content-based recommendation system only make recommendation based on existing interest of the user.
Over-specialization is the most common problem faced by content-based approach recommendation.
content-based recommendation systems always face the problem of a slow start.
As most of the users do not provide ratings, the ratings matrix becomes very sparse.

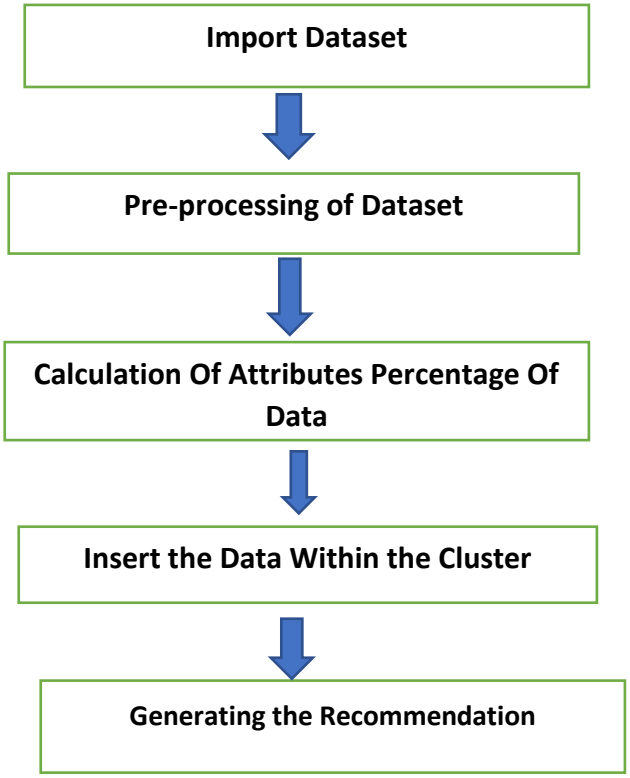
Therefore, this motivates us to provide a new model for user's
The advantage for collaborative filtering technique is that user's can get broader exposure to many different products.
The problem of over specialization is resolved using neighborhood-based collaborative technique.
It improve sparsity by using ratings as mandatory.

II.METHODOLOGY

The method we are use in this process is the collaborative filtering technique.

***COLLABORATIVE FILTERING TECHNIQUE:**
The collaborative filtering is method of making filtering prediction which is automatic prediction about the interest of a user by collecting reviews, preference the tastes information from many users. Recommendation system that is recommends movies/items through the user's collaborations and this is the most widely used and proved method of providing recommendation. collaborative filtering is a technique that filter out items that a user might like on the basis of reactions by similar users. It works by the searching of a large group of peoples and finding a smaller set of users with tastes similar to a random user.

***KNN ALGORITHM:**
KNN is a K-Nearest Neighbor algorithm. Neighbor based classification is a type of lazy learning as it does not attempt to construct a general interval model, but simply stores instances of the training data.(Also known as instance based learning). Classification is computed from a simple majority vote of the K-Nearest Neighbor of each value of k.
After determining K value, it will find the distanced value near to K value & will be classified in that particular group.



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Distance of value are find by the Euclidean Method.
To understand K-value have to through many iteration, such as K-value from 2 to 20. This have to run in for loop with different K-value with this need to find out the accuracy of model. Out of 100% which model will give best accuracy with K-value to nearest neighbor will consider as best model with k-value which will give accuracy to 100% or approx of it. If suppose we already know the k-value then it does not require to iterate.
In this technique, for prediction the neighbor that we are going to use also makes an influence on the recommendation that are going to be generated. determination of neighbor must be accomplish more carefully to not influence the nature of suggestions created. we choosing the most related neighbor who have the highest match compared to others, this value must be chosen more delicately.
For the user, to whom we to predict movie for which he hasn't rated, should be predicted using similar weights that are calculated in the previous step.

III.CONCLUSION

This movie recommendation system recommends various types of movies to users. from this system is based on collaborative filtering technique approach, it will give progressively clear outputs contradicted with different recommendation systems which are based on content-based filtering approach.
The peoples are restricted to the content-based recommendation system. this types of recommendation systems are don't suggest things out of the box.
Content-based approach work on the individual user's rating's, that's why limiting user's choices to explore more.
On the other hand our collaborative filtering technique approach calculates the connection in between various clients and depending upon their ratings, suggests the movies to other who have similar kind of tastes, after that permitting users to explore more.
It is the system to recommends the appropriate movies based on the user's ratings.

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