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Movie Recommendation System using Machine Learning

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Abstract: ***A movie recommendation is important in our social life due to its strength in providing enhanced entertainment. Such a system can suggest a set of movies to users based on their interest, or the popularities of the movies. A recommendation system is used for the purpose of suggesting items to purchase or to see. They direct users towards those items which can meet their needs through cutting down large database of Information. A recommender system, or a recommendation system (sometimes replacing 'system' with a synonym such as platform or engine), is a subclass of information filtering system that seeks to predict the "rating" or "preference" a user would give to an item. They are primarily used in commercial applications. MOVREC also help users to find the movies of their choices based on the movie experience of other users in efficient and effective manner without wasting much time in useless browsing.***

Keywords: Movie recommendation, Rating, Genre, Recommender system, Collaborative filtering.

I. INTRODUCTION

Everyone loves movies irrespective of age, gender, race, colour, or geographical location. We all in a way are connected to each other via this amazing medium. Yet what most interesting is the fact that how unique our choices and combinations are in terms of movie preferences. Some people like genre-specific movies be it a thriller, romance, or sci-fi, while others focus on lead actors and directors. When we take all that into account, it's astoundingly difficult to generalize a movie and say that everyone would like it. But with all that said, it is still seen that similar movies are liked by a specific part of the society. Recommender systems area unit a vital a part of the informative websites, business websites and e-commerce system. Recommender system plays a vital role within the social media like Facebook ,Twitter , YouTube etc. Recommender systems usually make use of either or both collaborative filtering and content-based filtering (also known as the personality-based approach),[1] as well as other systems such as knowledge-based systems.Collaborative filtering approaches build a model from a user's past behaviour (items previously purchased or selected and/or numerical ratings given to those items) as well as similar decisions made by other users.This model is then used to predict items (or ratings for items) that the user may have an interest in [2] Content-based filtering approaches utilize a series of discrete, pre-tagged characteristics of an item in order to recommend additional items with similar properties.Users only needed to provide ratings or perform other observable actions; the system combined these with the ratings or actions of other users to provide personalized results. With these systems, users do not obtain any direct knowledge of other users' opinions, nor do they need to know what other users or items are in the system in order to receive recommendations.

II. RELATED WORK

Bartosz Kupisz and Olgierd Unold[3] reported that recommendation systems which use the item-based collaborative filtering algorithm, based on Hadoop and Spark. Data for the research were gathered from a real social portal the users of which can express their preferences regarding the applications on offer. The Hadoop version was implemented with the use of the Mahout library which was an element of the Hadoop ecosystem. The authors original solution was implemented with the use of the Apache Spark platform and the Scala programming language. The applied similarity measure was the Tanimoto coefficient which provides the most precise results for the available data. The initial assumptions were confirmed as the solution based on the Apache Spark platform turned out to be more efficient.

Nimish Kapoor ,Saurav Vishal and Krishnaveni K. S.[4] reported that Movie industry has been booming ever since early days. But not all movies are great and worth users' time. Hence people depend a lot on movie reviews before watching a movie. Classically movies are rated on the basis of rating score. And in addition users also provide comments for review. But the reviews aren't made full use of to add to its rating score and recommendations. And people are very short of time these days so comments are hardly read. So, sentiment analysis are applied on reviews/comments so that they can also add to the ratings of a movie and hence result in better recommendation. In this project, a Sentiment analysis system is built based on the TMDB dataset and used SVM to predict positive negative sentiment from the user's movie review and then movies are rated based on the sentiment analysis and scoring of the reviews.

III.METHODOLOGY

This recommendation system recommends different movies to users. Since this system is based on a collaborative approach [67], it will give progressively explicit outcomes contrasted with different systems that are based on the content-based approach. Content-based recommendation systems are constrained to people, these systems don't prescribe things out of the box. These systems work on individual users' ratings, hence limiting your choice to explore more. While our system which is based on a collaborative approach computes the connection between different clients and relying upon their ratings, prescribes movies to others who have similar tastes, subsequently allowing users to explore more. It is a web application that allows users to rate movies as well as recommends them appropriate movies based on other's ratings

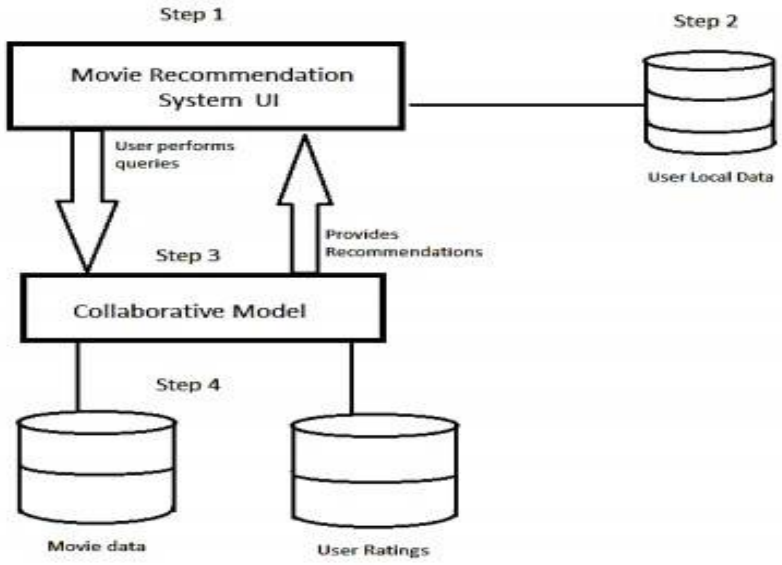

Fig: The architecture of movie recommendation system.

1) First, a new user is provided with a screen that contains a search bar that allows him to search for a particular movie. If the user is an existing one, he will be provided a different screen.
2) In this step, the user's local data, which is the movies he has previously watched and the ratings provided by him will be stored in a separate database.
3) In this step, all the information about movies such as genre, abstract, the title will be stored in a "Movie data" database and all the other users' global ratings will be stored in a database called "User ratings".

Collaborative filtering works based on users that have similar tastes. In the given below Table , since users A and B have given similar ratings to 'Reggae' they both are considered users having similar likes and dislikes. A has rated 4 for 'Trance', so next time when user B requests for a recommendation, the system will recommend
'Trance' to B since user A has rated 4 to 'Trance'.

Genre/Users	EDM	Pop	Reggae	Trance
A	1		5	4
B	2	3	4	
C	4	5		2
D	2		4	5

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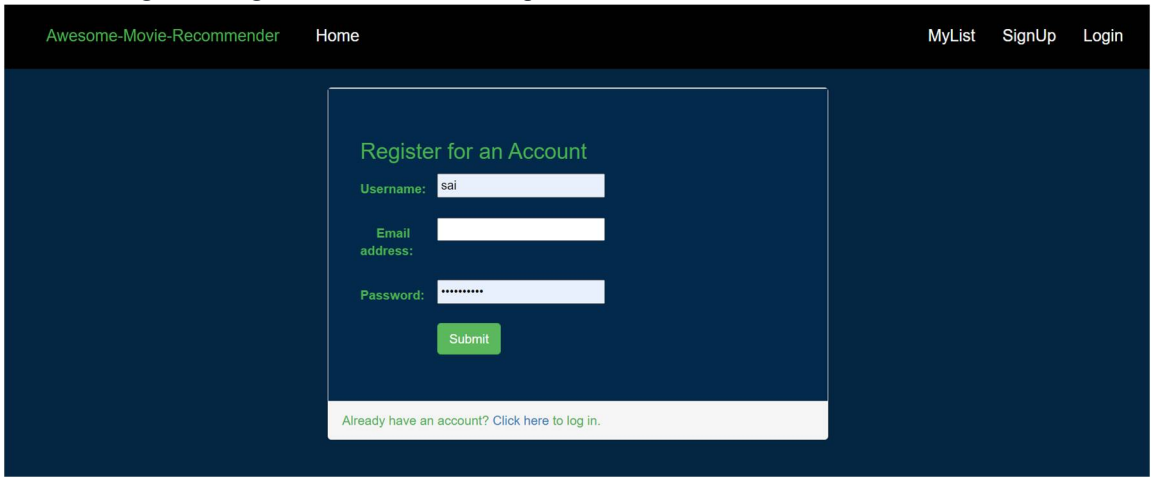
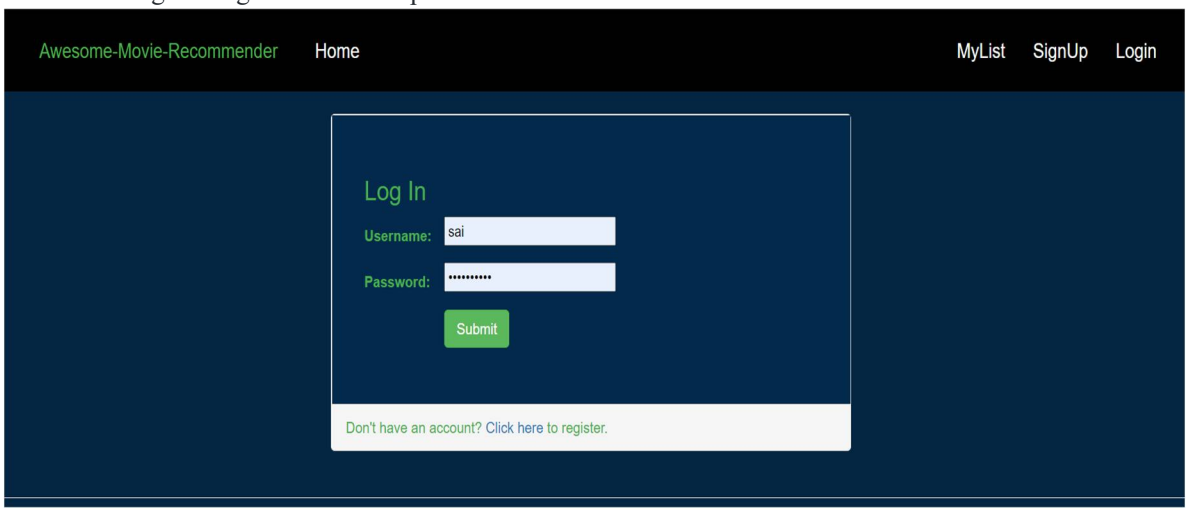
IV. EXPERIMENTAL RESULTS

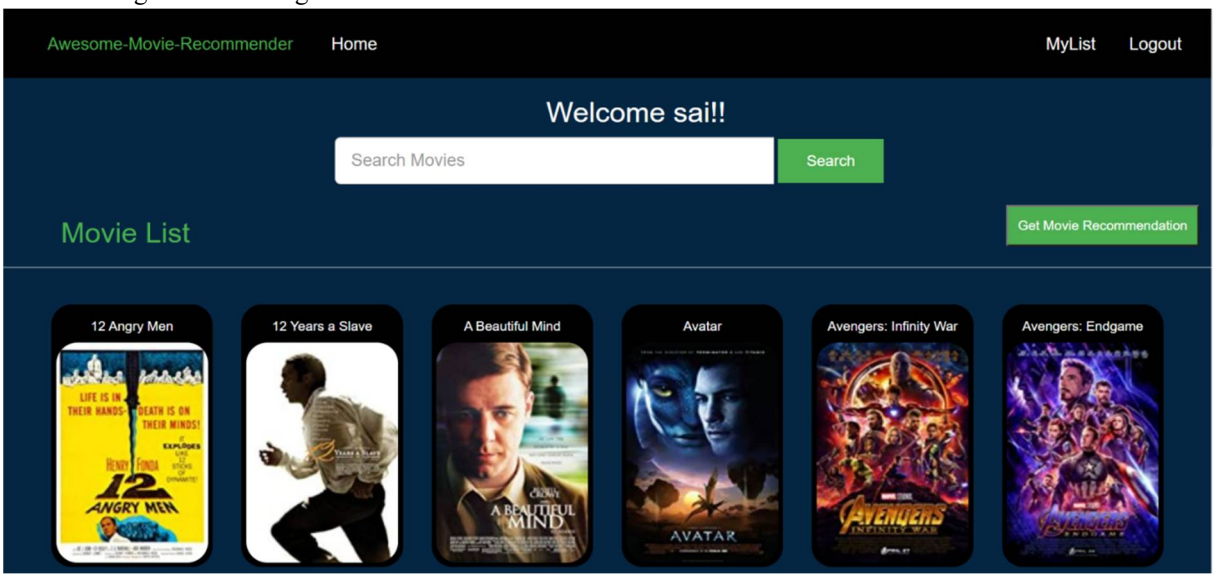
1) *Step – 1:* User can register using username, email id and password.



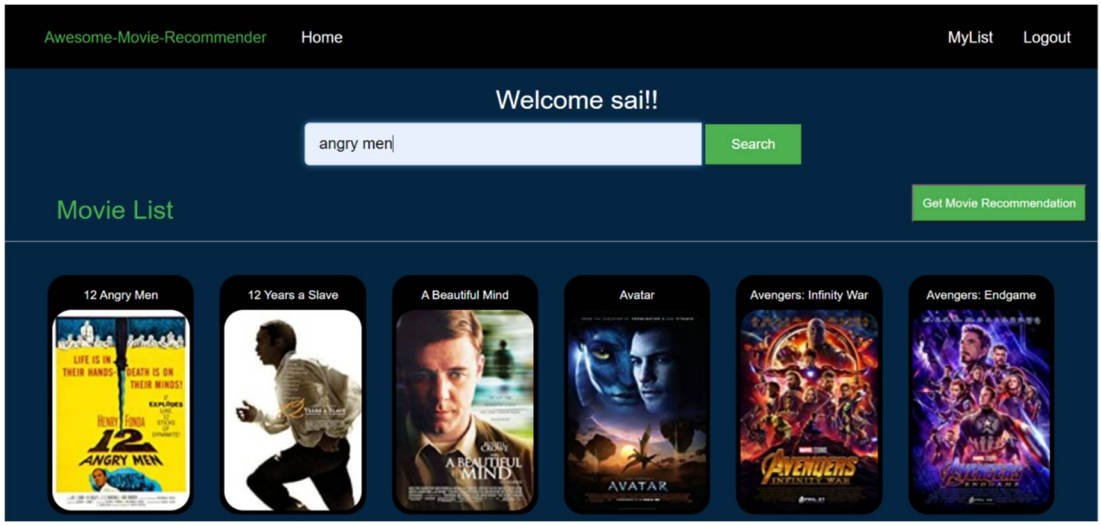
2) *Step –2:* User can login using username and password.



3) *Step – 3:* Once login is done we get all movies.



4) *Step – 4:* By using search bar we can find the movie

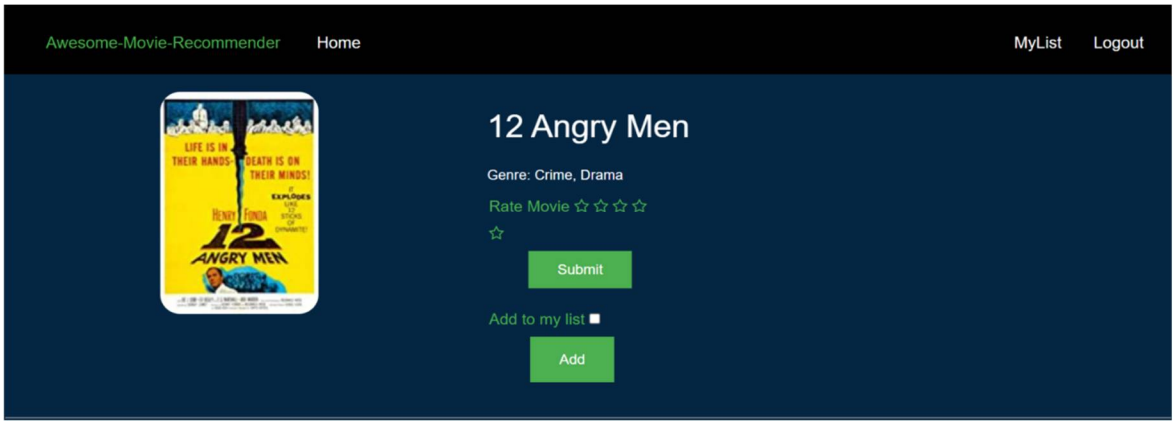


5) *Step – 5*

a) Once we click on movie we will give review for particular movie and its also add to list also.

b) User can give rating to the movies.

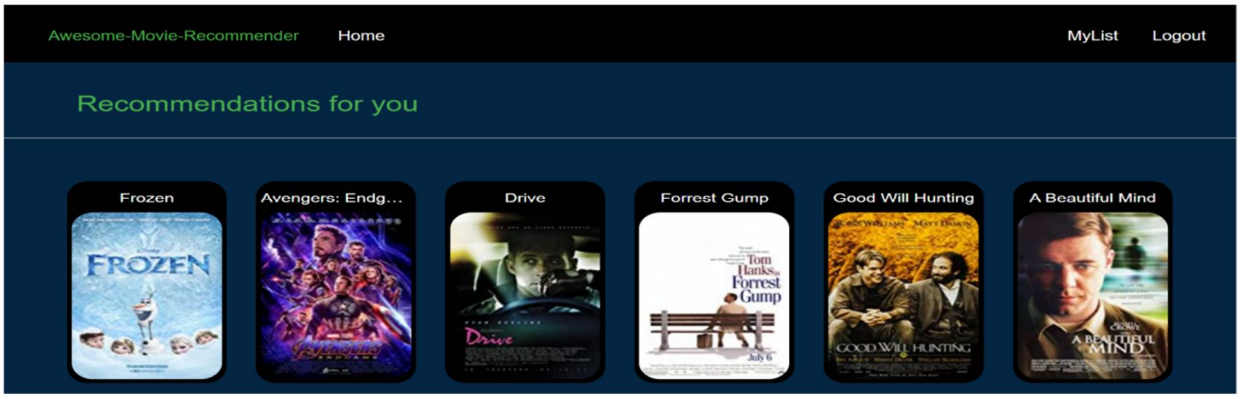
c) User can add movie to their watch list.



6) *Step – 6*

a) If we click on movie recommendation, all movie recommend for you is display is page.

b) User can get movie recommendation (Recommendation algorithm(Collaborative Filtering) which suggests new movies based on the ratings given by user.)



V. CONCLUSIONS

This recommendation system recommends different movies to users. Since this system is based on a collaborative approach, it will give progressively explicit outcomes contrasted with different systems that are based on the content based approach. Content-based recommendation systems are constrained to people, these systems don't prescribe things out of the box. These systems work on users' ratings, hence limiting your choice to explore more. While our system which is based on a collaborative approach computes the connection between different clients and relying upon their ratings, prescribes movies to others who have similar tastes, subsequently allowing users to explore more. It is a web application that allows users to rate movies as well as recommends them appropriate movies based on other's ratings.

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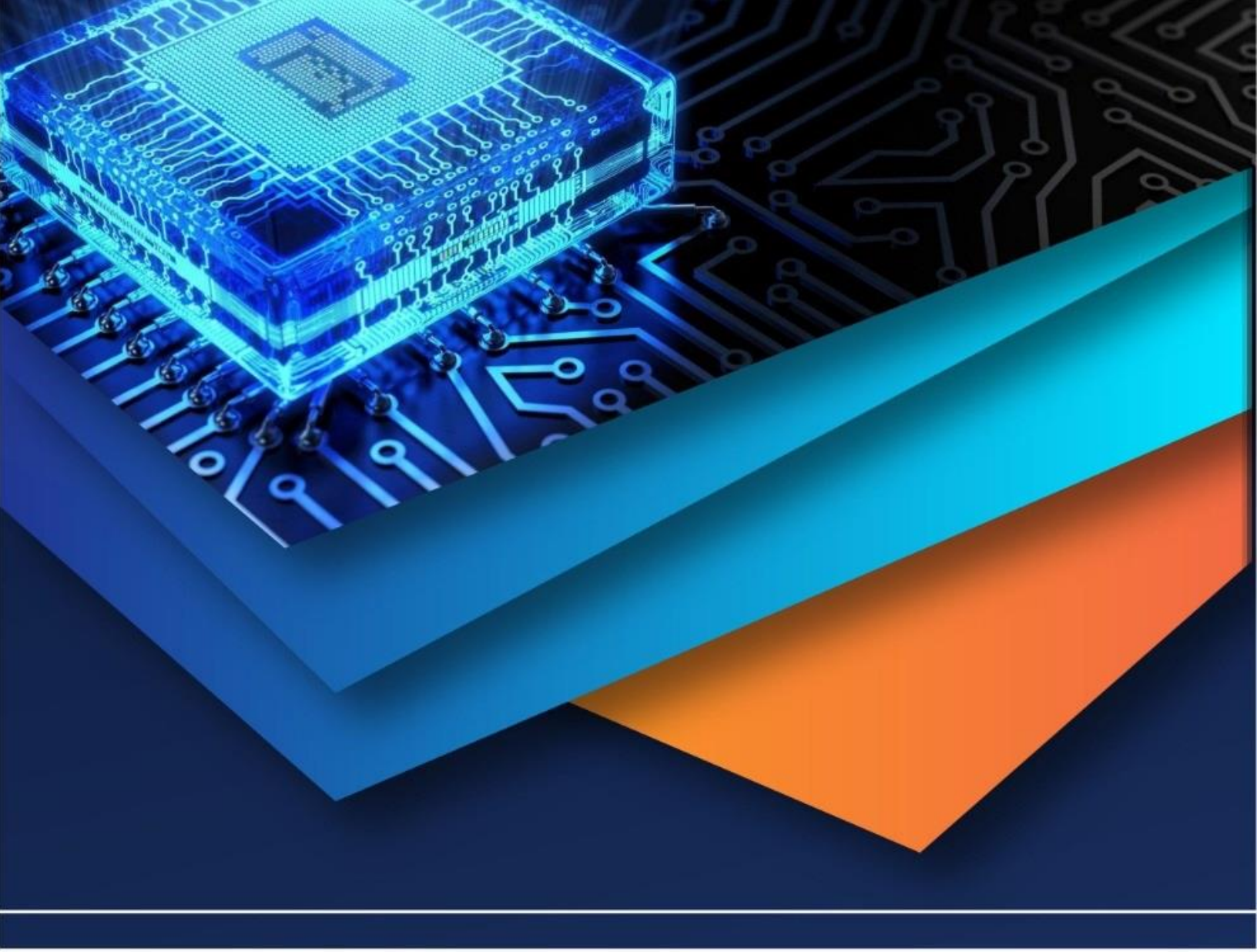

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