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Social Media Recommendations with Machine Learning Techniques

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ABSTRACT: Generally when we talk about the social media recommendations thefirst thing that comes to our knowledge is marketing the products and recommending the products to the users. Now our perspective is the same as it was, but it is based on the Age Factor. As we know that every user gets the same type of recommendations once they are into their respective page. Our page will recommend the members with respect to the Age Factor.This can be Implemented by using Flask and some widely used Machine Learning techniques which were used in the Social Networks Analysis such as Naïve Bayes, Support Vector Machine, Logistic Regression and Cosine similarity Algorithms.

KEYWORDS: Machine Learning, Recommendations, Content Based, CollaborativeRecommendations.

I. INTRODUCTION

Machine learning is an area of artificial intelligence (AI) with a concept that a computer program can learn and adapt to new data without human intervention.
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A complex algorithm or source code is built into a computer that allows for the machine to identify data and build predictions around the data that it identifies.

Machine learning is useful in parsing the immense amount of information that is consistently and readily available in the world to assist in decision making.Machine learning can be applied in a variety of areas, such as in investing, advertising, lending, organizing news, fraud detection, and more.

Machine learning – and its components of deep learning and neural networks – all fit as concentric subsets of AI. AI processes data to make decisions and predictions. Machine learning algorithms allow AI to not only process that data, but to use it to learn and get smarter, without needing any additional programming. Artificial Intelligence is the parent of all the machine learning subsets beneath it. Within the first subset is machine learning; within that is deep learning, and then neural networks within that.

An artificial neural network (ANN) is modeled on the neurons in a biological brain. Artificial neurons are called nodes and are clustered together in multiple layers, operating in parallel. When an artificial neuron receives a numerical signal, it processes it and signals the other neurons connected to it. As in a human brain, neural reinforcement results in improved pattern recognition, expertise, and overall learning.

Machine learning is comprised of different types of machine learning models, using various algorithmic techniques. Depending upon the nature of the data and the desired outcome, one of four learning models can be used: supervised, unsupervised, semi-supervised, or reinforcement. Within each of those models, one or more algorithmic techniques may be applied – relative to the data sets in use and the intended results. Machine learning algorithms are basically designed to classify things, find patterns, predict outcomes, and make informed decisions. Algorithms

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can be used one at a time or combined to achieve the best possible accuracy when complex and more unpredictable data is involved.

The objective of our project is to send the social media recommendations content wise and implementation of content based recommendations.

- Recommendations are Algorithmic Suggestions.
- Recommender systems are most successful and widespread applications in Business.
- These increases the Business Revenue.
- Helps the customer to choose the most suitable content.

II. EXISTING SYSTEM

In the existing project the motto is to send the recommendations to the user who ever it might be, the person who creates a social media account the recommendations will be sent to them and the recommendations will be based on the cookies and the browsing history of the user and so hence the recommendations will be sent.
Due to this the user whoever it might be they will get the recommendations and the probability of viewing the sent recommendation will be less. Hence the theme of sending recommendation is quite not efficient in viewing it by user.

One way site address these issues is by providing users with personalized recommendations. As in traditional taste-related domains or e-commerce (movies, books, hotels), the goal of a personalized recommender system is to adapt the content based on characteristics of the individual users. Social media and personalized recommender systems can mutually benefit from one another: on the one hand, social media introduces new types of public data and metadata, such as tags, ratings, comments, and explicit people relationships, which can be utilized to enhance recommendations; on the other hand, recommender technologies can play a key role in the success of social media applications and the social web as a whole, ensuring that each user is presented with the most attractive and relevant content, on a personal level.

In recent years, quite a few personalized recommendation services for social media have emerged. For instance, StumbleUpon1 is a personalized recommender engine that suggests web pages based on a user's past ratings, ratings by friends, ratings by users with similar interests, and topics of interest selected by the user from a list of nearly 500 subjects. More recently, some of the leading social media sites have also added personalized recommendation features: video-sharing site YouTube has launched a personalized homepage that includes recommendations based on past views and favorites. This feature is reported to have led to an increase in the number of users visiting the homepage, the frequency of visits, and the number of subscriptions users make over time

III.PROPOSED METHODOLOGY AND DISCUSSION

In the current project the main aim is to send the recommendations with respect to the age factor and the Content based recommendations implementation will be done. When we send the recommendation with respect to the age factor the user may get the most appropriate thing through the age factor. Hence the probability of viewing the sent recommendation will be more.

Supervised Machine learning is the first of four machine learning models. In supervised learning algorithms, the machine is taught by example. Supervised learning models consist of "input" and "output" data pairs, where the output is labelled with the desired value. For example, let's say the goal is for the machine to tell the difference between daisies and pansies. One binary input data pair includes both an image of a daisy and an image of a pansy. The desired outcome for that particular pair is to pick the daisy, so it will be pre-identified as the correct outcome.

By way of an algorithm, the system compiles all of this training data over time and begins to determine correlative similarities, differences, and other points of logic – until it can predict the answers for daisy-or-pansy questions all by itself. It is the equivalent of giving a child a set of problems with an answer key, then asking them to show their work and explain their logic. Supervised learning models are used in many of the applications we interact with

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every day, such as recommendation engines for products and traffic analysis apps like Waze, which predict the fastest route at different times of day.A user who ever creates the social media account with respect to his age the recommendations are sent so that the user might get benefited with the most appropriate content.

Unsupervised learning is the second of the four machine learning models. In unsupervised learning models, there is no answer key. The machine studies the input data
– much of which is unlabeled and unstructured – and begins to identify patterns and correlations, using all the relevant, accessible data. In many ways, unsupervised learning is modeled on how humans observe the world. We use intuition and experience to group things together.

As we experience more and more examples of something, our ability to categorize and identify it becomes increasingly accurate. For machines, "experience" is defined by the amount of data that is input and made available. Common examples of unsupervised learning applications include facial recognition, gene sequence analysis, market research, and cybersecurity.

Following is the Representation of the Social Media Recommendations with respect to the age factor.

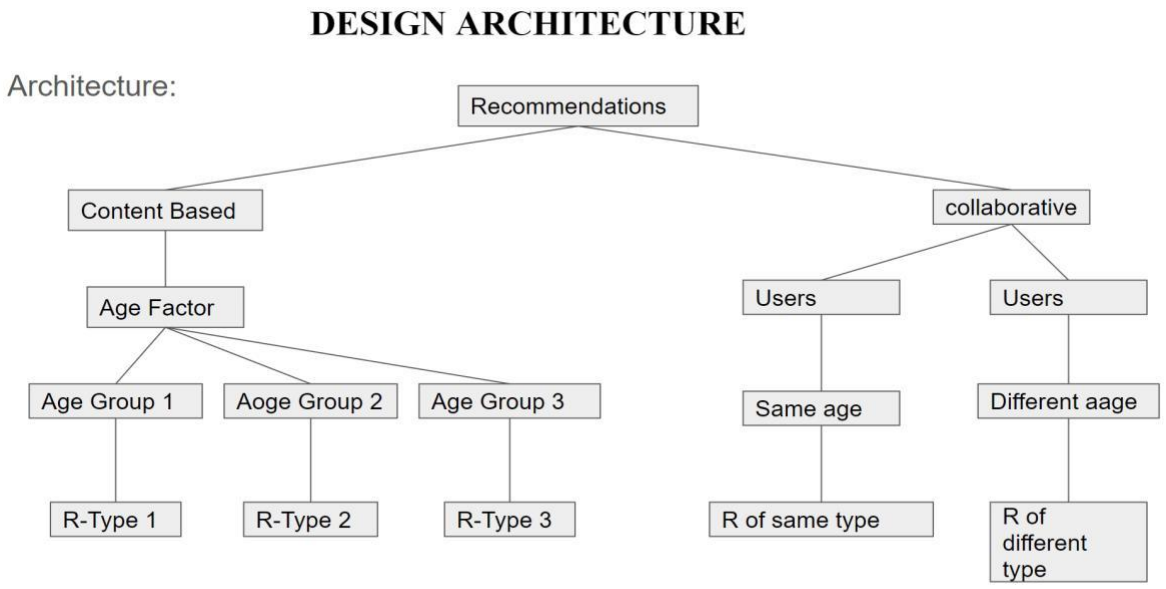

Fig. 3.1. Social Media Recommendations with respect to age fact

IV. RESULTS

When the web application is started the first page that is seen is movie search page and it is ready to show the recommended movies to users. All these operations can be performed provided that Heroku web application that is installed in the browser.

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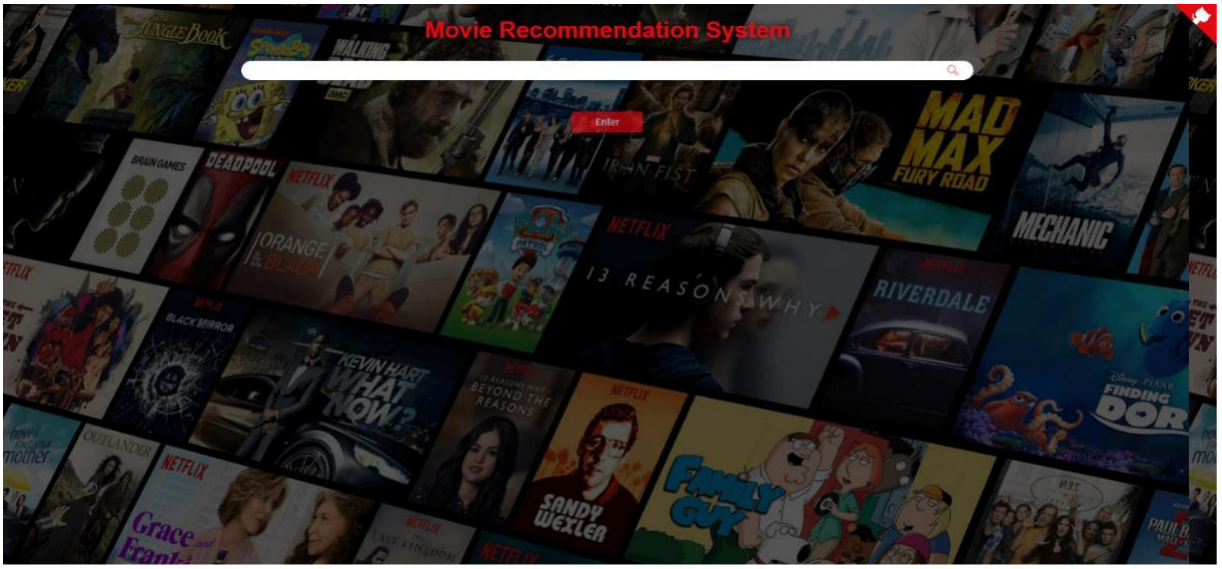

Fig. 4.1. view of Movie Recommendations in web page

When we try to search the movie, in the search bar it recommends the remaining words which we want to search as shown in below

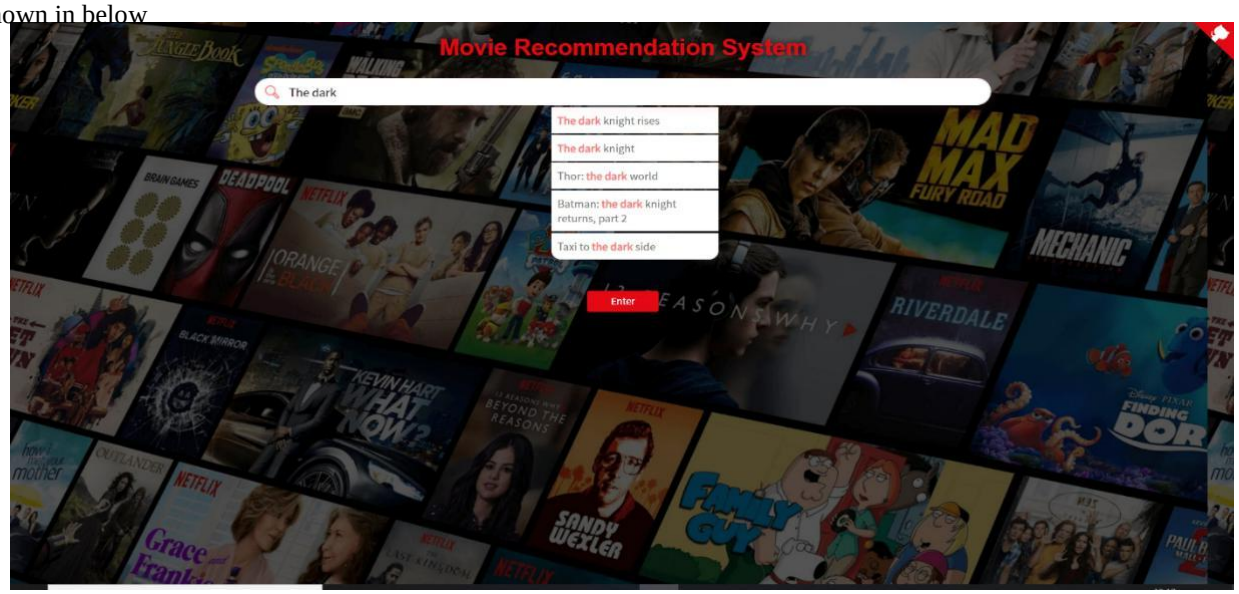

Fig. 4.2. Movie names auto filling in web page

The movie we searched previously is seen here with the complete information in the web page we created and the cast and crew is also seen in the following image and director name and rating from the popular website is also seen in our webpage.

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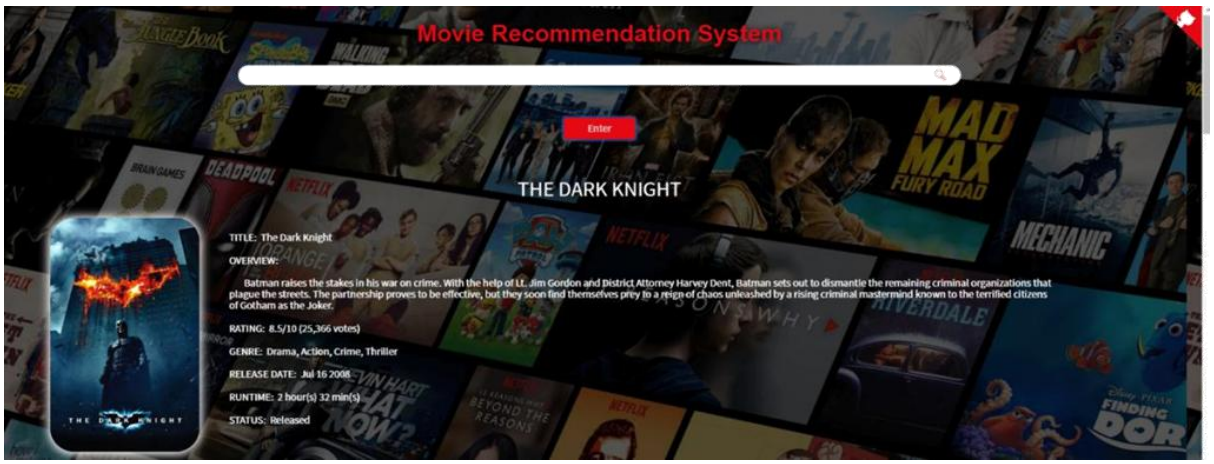

Fig. 4.3. The Movie we searched is seen in web page

When the enter button is pressed after entering the movie name we get the movie details and the cast and crew details is also seen in the current web page.

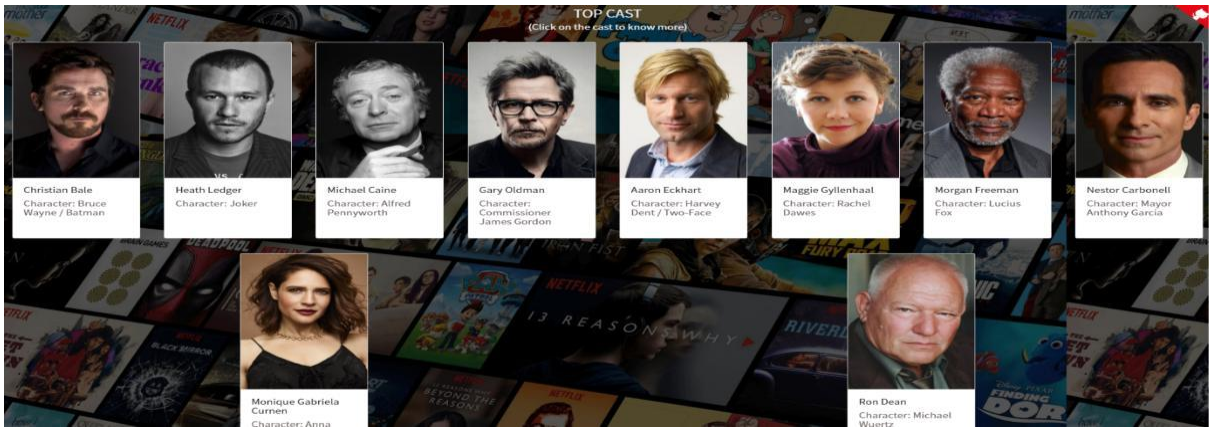

Fig. 4.4. Cast and crew is seen in the created web page

With respect to the cast and crew the recommended movies are shown in the webpage

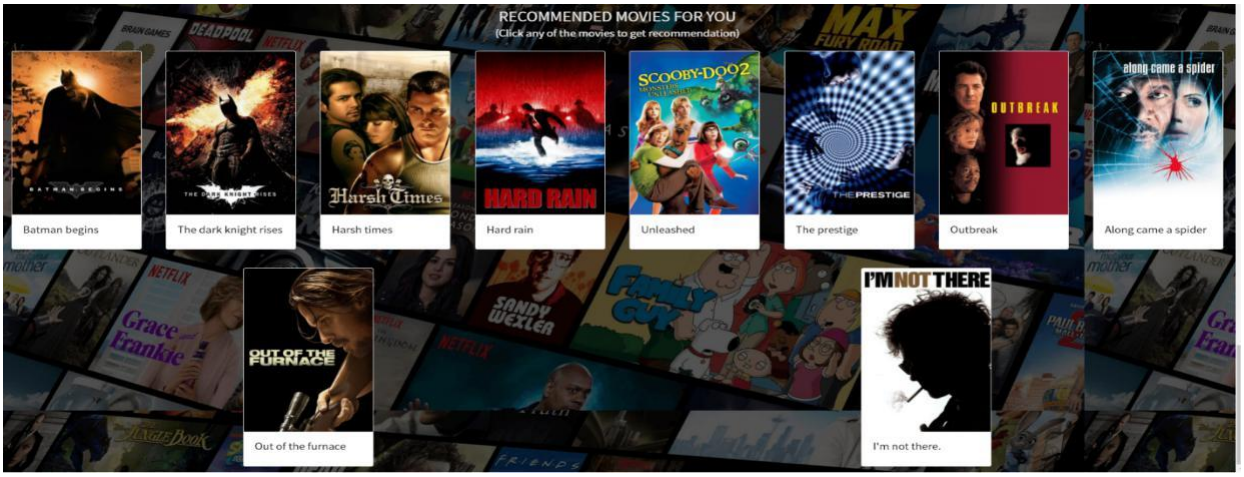

Fig. 4.5. with respect to cast the recommended movies is shown

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After the recommended movie are shown click on any one of the movie in the list.

V. CONCLUSIONS

Finally, when it comes to the development of machine learning models of your own, you looked at the choices of various development languages, IDEs and Platforms. Next thing that you need to do is start learning and practicing each machine learning technique. The subject is vast, it means that there is width, but if you consider the depth, each topic can be learned in a few hours. Each topic is independent of each other. You need to take into consideration one topic at a time, learn it, practice it and implement the algorithm/s in it using a language choice of yours. This is the best way to start studying Machine Learning. Content based Social Media Recommendations are Implemented.

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