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Recommendation System by Considering Real Time Information

Chandrakant D. Kokane[1], Arjun Haghwane[2], Vinay Ippili [3], Mithilesh Jogale[4], Vilas V. Deotare

[1,2,3,4]Nutan Maharashtra institute of Engineering and Technology, Talegaon(D), Pune, Maharashtra, India

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ABSTRACT

The Recommendation system is the unavoidable thing for whatever we buy or go to the new place. Restaurants also need recommendation systems in terms of attracting more customers in the management[5] side and tasting favourite, famous food in the restaurant in customers side. With addition to that we build the review based model for recommending restaurants to the customers with the help of collaborative filtering[6] which is a Machine Learning[7] Algorithm .The output of the model may be recommending most popular restaurants and most popular food items served by the appropriate restaurant. The model is improved with the review[8] system as the review increases the recommended results are prioritized.

Keywords - Collaborative Filtering ,Machine Learning, Reviews, Management

I. INTRODUCTION

In today's fast-paced digital world, businesses are constantly seeking innovative ways to enhance user experiences and engage their customers more effectively[1]. One powerful solution is the integration of machine learning algorithms to provide real-time recommendations. This transformational technology enables businesses to personalize their offerings, be it product recommendations for e-commerce platforms, content suggestions for media outlets, or even medical treatment options in healthcare. By analyzing real-time input data, machine learning can drive superior decision-making, making it a game-changer in the modern business landscape.

Real-time recommendations powered by machine learning algorithms are becoming increasingly essential, as they allow companies to stay ahead of the curve, adapt to evolving user preferences, and deliver hyper-personalized content or products[1]. In this introduction, we will explore the key aspects of machine learning-based recommendations in real-time, from the algorithms and data sources involved to the profound impact it can have on various industries.

This paper explores the fascinating world of ML-based recommendations using real-time input data. We delve into the underlying technologies, the challenges faced, and the immense potential it holds for enhancing user experiences, increasing customer engagement, and ultimately driving business success like restaurants, Hotels,

Stores etc[3]. ML models can process this data in real-time, identifying patterns, trends, and user preferences, which, in turn, empower businesses and individuals to provide a more personalized and engaging experience.
We will examine how machine learning models can be designed to ingest, process, and analyze real-time input data from diverse sources, such as user actions, social media updates, or sensor readings. Integrating real-time data ensures that recommendations are not just based on historical behavior but are continuously updated to reflect users' evolving interests and current events[1]. Real-time input data can also aid in the discovery of emerging or trending content. We will examine how ML can identify and promote content that aligns with the user's current interests or events, ensuring that recommendations remain fresh and engaging.

II. LITERATURE SURVEY

I.SCENARIO
Recommendation systems based on real-time data can provide valuable insights into the latest developments and research in the field. Recommendation systems have become an integral part of our digital lives, helping users discover products, services, content, and more. Real-time data-driven recommendation systems are especially important in applications like e-commerce, streaming services, social media, and more[2]. Below, I've provided an overview of key research areas and some notable papers to help you get started on your literature survey.
Collaborative filtering methods have been widely used for recommendation systems. They can be adapted to real-time data by continuously updating user-item interactions and recommendations[6].
As the recommendations are unavoidable , the best recommendations will help to increase the traffic and get more data from the people and the demand of the model will increase.

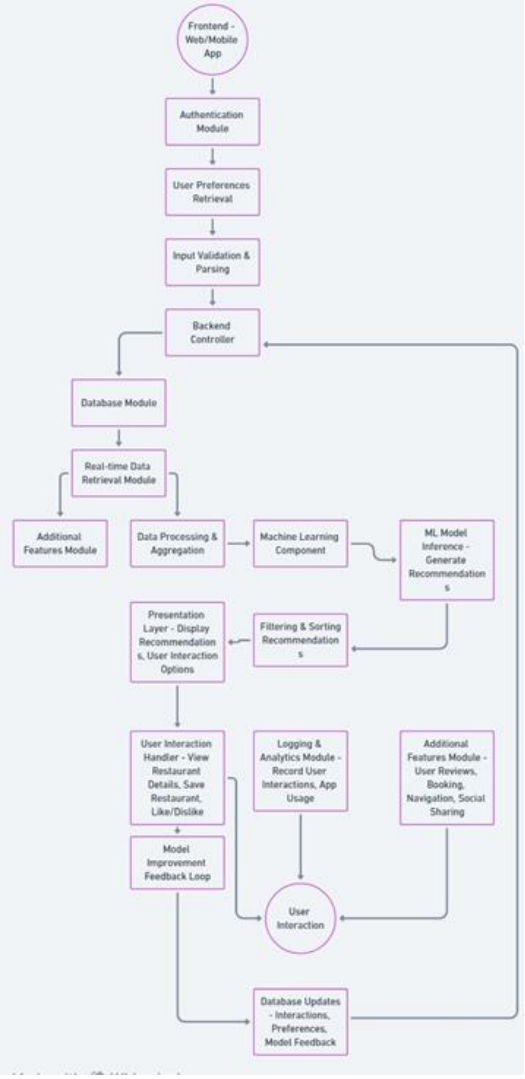
III. DATA COLLECTION

Data collection refers to the process of gathering and storing various types of information that are essential for the functioning of the restaurant recommendation app. To efficiently collect data for the restaurant recommendation app, the process can be divided into manageable groups[5]. Firstly, user authentication and preferences are gathered during SignIn/SignUp. This includes acquiring information on favorite cuisines, dietary restrictions, and budget constraints. Next, real-time data is retrieved using Maps API to pinpoint the user's location, and a Restaurant Data API provides essential details like names, cuisines, ratings, and menus. Machine learning is used to generate personalized restaurant suggestions based on historical user preferences, location, and context[4]. These recommendations are then fine-tuned according to user preferences, such as sorting by rating, distance, or cuisine type. The database is crucial for storing user data, including preferences and saved restaurants, as well as restaurant information. Additionally, a platform for user reviews and ratings is implemented. Finally, logging and analytics track user interactions, providing insights into popular features and areas for improvement[5]. This organized approach allows for systematic data collection, ensuring a seamless and user-friendly restaurant recommendation app.

IV.ALGORITHM

Step 1 -User interacts with the frontend.
Step 2 -User authentication and preferences are checked.
Step 3 -User input is validated and parsed.
Step 4 -Backend manages data flow.
Step 5 -Data is stored and retrieved from the database.
Step 6 -Real-time data is collected from external sources.
Step 7 -Machine learning generates personalized recommendations.
Step 8 -Recommendations are refined based on user preferences.
Step 9 -Refined recommendations are presented to the user.
Step 10 -User can interact with recommendations.
Step 11 -User feedback is collected for model improvement.
Step 12 -User interactions are stored in the database.
Step 13 -Additional features like reviews and reservations are handled.
Step 14 -User interactions are logged for analytics.

FLOW CHART



V. FUTURE SCOPE

Real-time data allows for more precise and dynamic personalization. Recommendation systems can leverage real-time user behavior and contextual information (location, time, weather, etc.) to provide highly tailored recommendations. As more data sources become available , the system can be increased with more data and therefore it can give more recommendations with more accuracy and also gives the shortest path routing to the destination.

VI. CONCLUSION

The project, titled "Recommendation System by Considering Real time information", is a application that provides the Recommendation based on the real time data and gives the accurate recommendation with help of the Algorithms. These recommendations.

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