SNS COLLEGE OF ENGINEERING

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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Recommender System

User Profiles in Recommender Systems

- User profiles play a pivotal role in personalized recommendations. A user profile is a representation of an individual's preferences, interests, and behavior within a recommender system.

- By capturing and analyzing user profiles, recommender systems can provide tailored recommendations that align with each user's unique tastes.

User Profiles in Recommender Systems

- Here's how user profiles are typically used:

      1.Data Collection

      2.Profile Representation

      3.Updating user profiles

      4.Content based Profiles

      5.Collaborative Profiles

      6.Hybrid Profiles

      7.Implicit User Profiles

      8.Cold Start Problem

User Profiles in Recommender Systems

1.Data Collection:

- User profiles are built by collecting data about user interactions with items.

- These interactions can include ratings, clicks, views, purchases, likes, and more.

- The data is then used to infer the user's preferences and behaviors.

User Profiles in Recommender Systems

2.Profile Representation:

- User profiles are often represented as vectors or feature sets.

- Each feature represents a specific aspect of user behavior, such as preferred genres, historical ratings, recently viewed items, and more.

User Profiles in Recommender Systems

3.Updating User Profile:

- User profiles evolve over time as users interact with the system. New interactions are used to update and refine the user's profile.

- For example, if a user starts watching documentaries, their profile will adjust to reflect this new interest.

User Profiles in Recommender Systems

4.Content Based Profiles:

- In content-based recommender systems, user profiles are built based on the content attributes of items the user has interacted with.

- The system compares these attributes to the user's profile to recommend items with similar attributes.

User Profiles in Recommender Systems

5. Collaborative Profiles:

- Collaborative filtering systems build user profiles by analyzing the behaviors of similar users.

- If User A and User B have similar interaction patterns, User A's profile might incorporate preferences of User B to improve recommendations.

6.Hybrid Profiles:

- Hybrid recommender systems combine multiple sources of information to build comprehensive user profiles.

- This might involve merging content-based and collaborative profiles to capture both item attributes and user similarities.

User Profiles in Recommender Systems

7.Implicit User Profiles:

- Sometimes, user profiles are built using implicit interactions, such as clicks or view durations.

- These interactions might not explicitly reflect preferences but can still offer insights into user interests.

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8.Cold Start Problem :

- A challenge with user profiles arises when dealing with new users who have limited interaction history.

- The cold start problem involves recommending items to these users based on their limited profile information.

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