

MOVIE RECOMMENDATION SYSTEM USING MACHINE LEARNING

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WHAT IS RECOMMENDER SYSTEM??

A system that suggests any product or a service based on user preference is termed as recommender system.



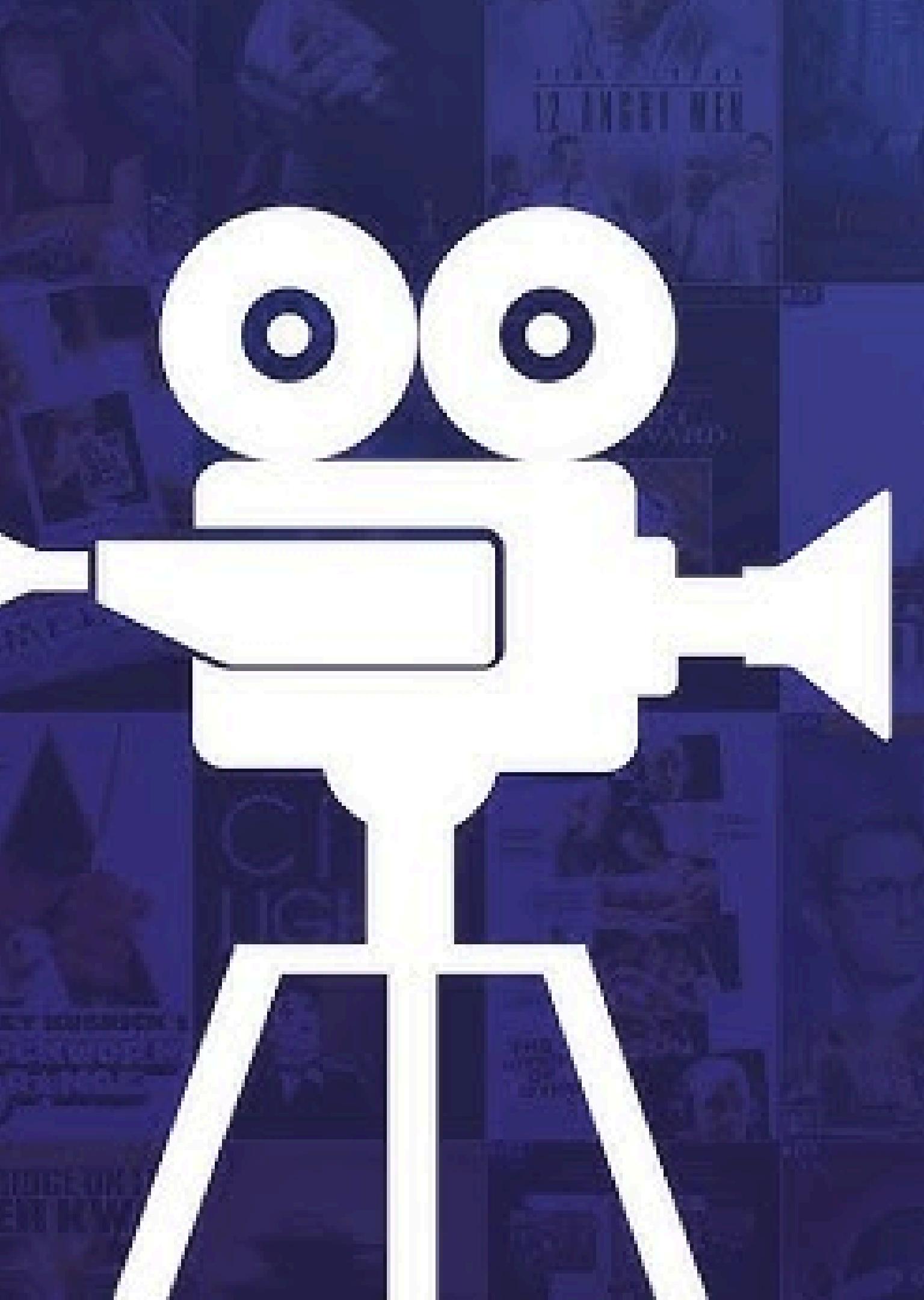
TYPES

- Content based
- Collaborative filtering
- Hybrid Approaches



WHAT IS MOVIE RECOMMENDATION SYSTEM?

A movie recommendation system in machine learning is a tool designed to suggest movies to users based on their preferences and behaviors. There are several approaches to building such a system, each with different levels of complexity and types of data used.



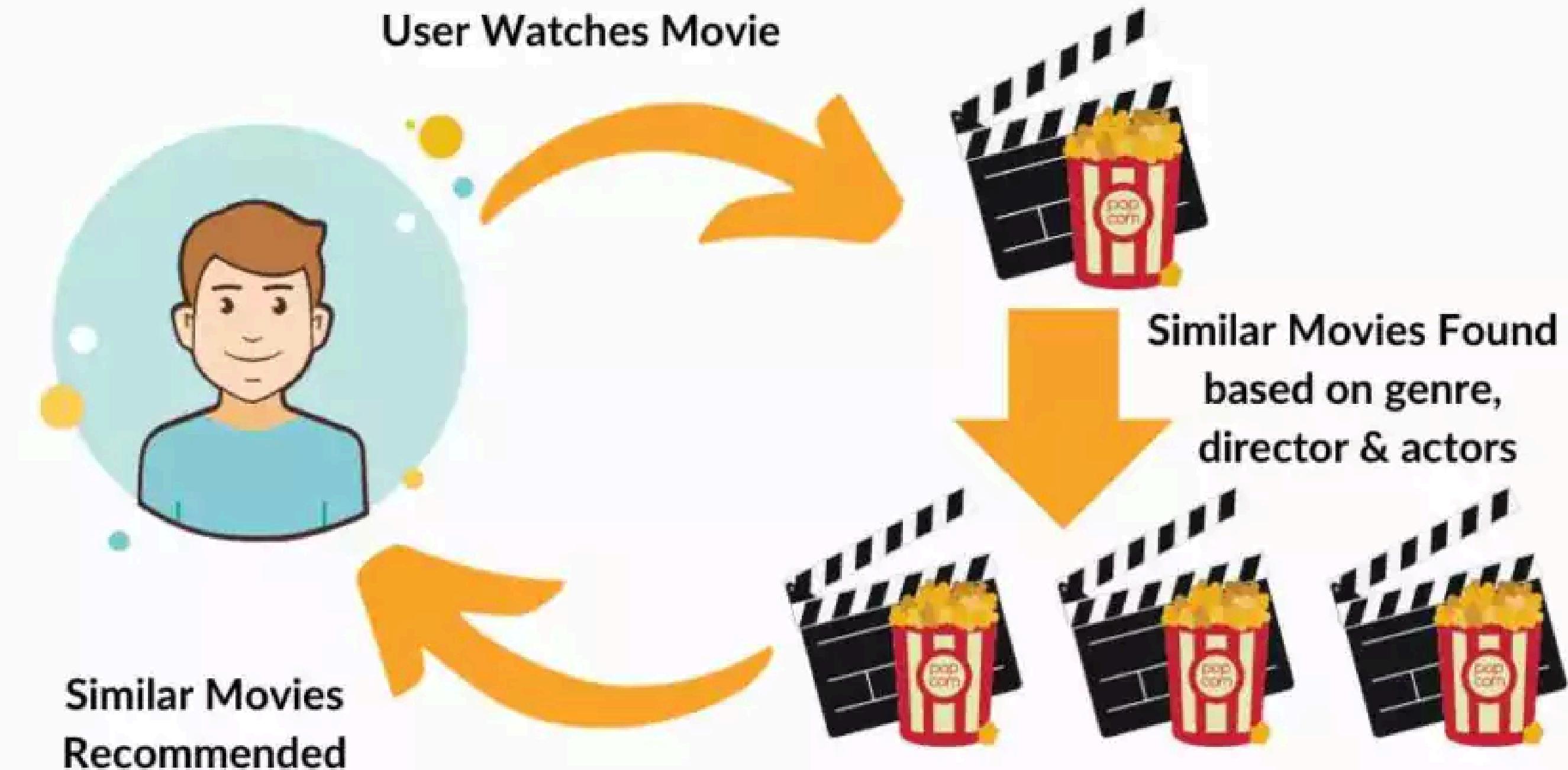
MACHINE LEARNING APPROACH IN RECOMMENDER SYSTEMS

I. Content-Based Filtering

- This approach recommends movies based on features (e.g., genre, director, actors, etc.) that are similar to what a user has liked in the past.
 - Uses attributes of movies and compares them with the user's past preferences. For instance, if a user enjoys "action" and "sci-fi" movies, the system will prioritize recommendations that match these characteristics.

Techniques used: TF-IDF, Word2Vec, or Doc2Vec for encoding textual data, and Cosine Similarity to find similarities.

Content-Based Recommendation System

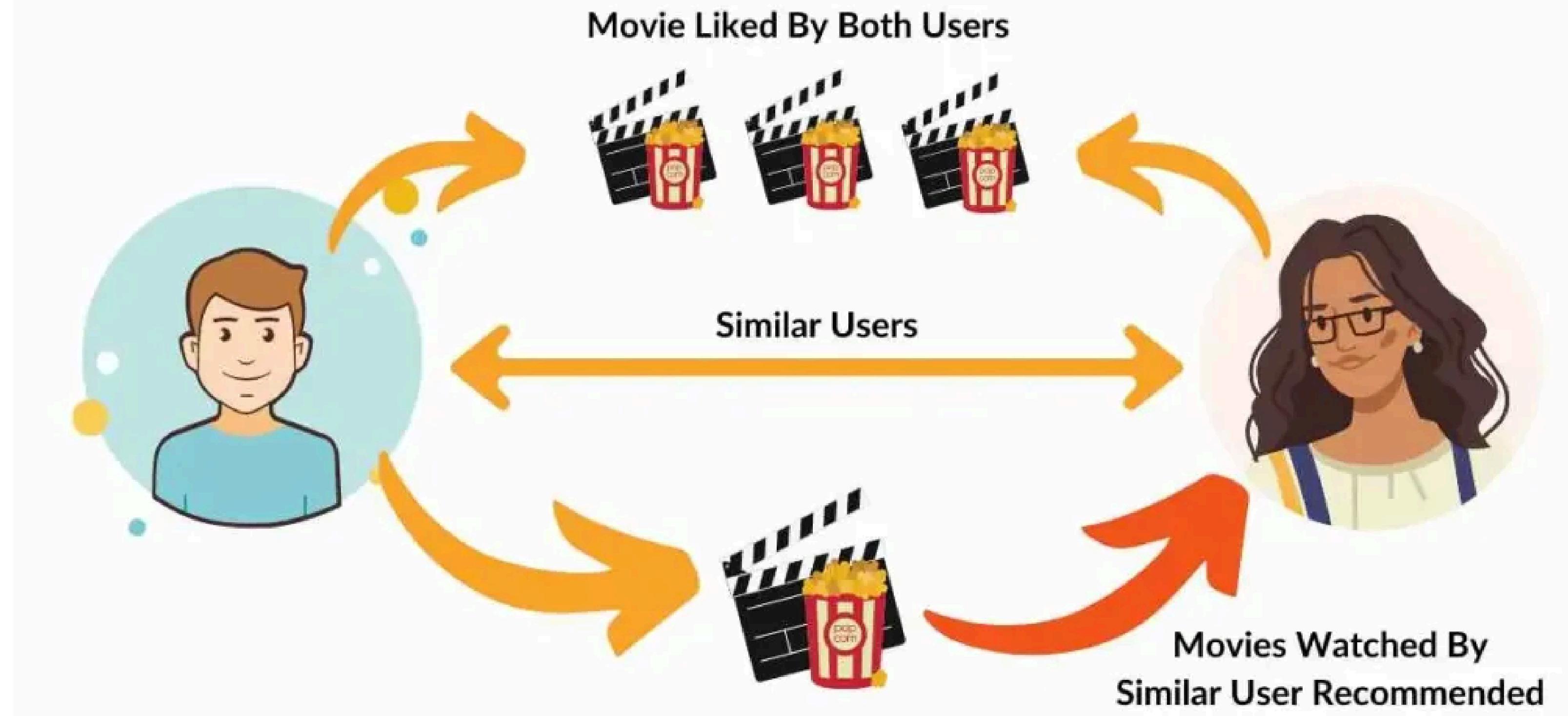


2. Collaborative Filtering

- This method relies on user behavior, suggesting movies based on the preferences of similar users or the user's previous interactions.
- User-Based Collaborative Filtering: Finds users with similar tastes and recommends movies that similar users have liked.

Techniques used: k-Nearest Neighbors (k-NN), Cosine Similarity, Pearson Correlation.

User-Based Collaborative Filtering



3. Hybrid Systems

- Combines content-based and collaborative filtering methods to improve recommendations.
- Can be more complex but typically provides better results.

STEPS TO BUILD A MOVIE RECOMMENDATION SYSTEM.

1. Data Collection: Collect data on user preferences, movie ratings, genres, actors, etc. Common datasets include MovieLens and Netflix Prize datasets.
2. Data Preprocessing: Clean and preprocess data to handle missing values, categorical variables, etc.

3. Feature Engineering: Create features that represent user preferences and movie characteristics.
4. Model Selection: Choose the recommendation approach best suited to your data and use case.
5. Training and Tuning: Train the model, then optimize it with hyperparameter tuning.

Thank You!