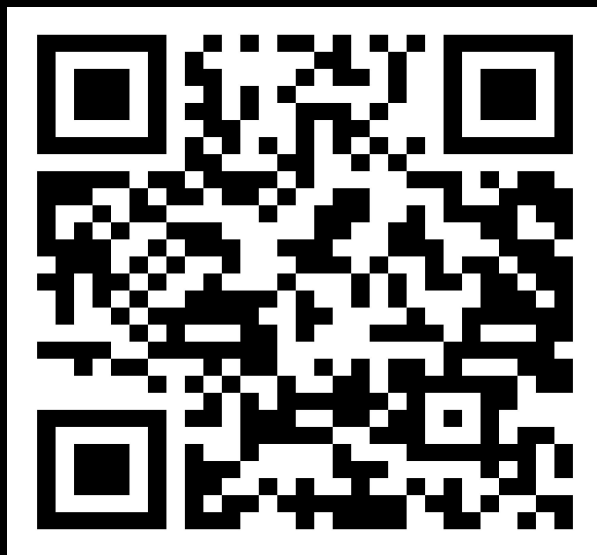
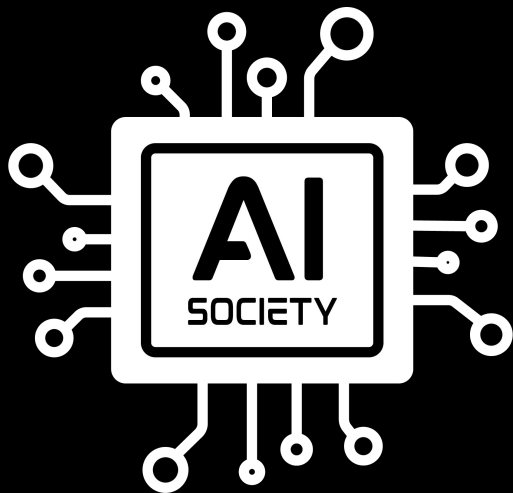


# Join Our Discord!





# ASU Event RecSys

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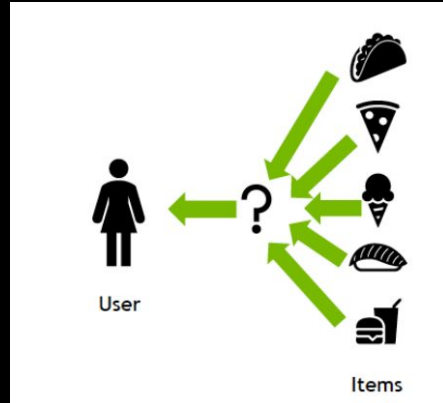
20 Nov '24

ML Lab | The AI Society at Arizona State University

# Introduction to Recommender Systems

# What is a Recommender System?

A recommendation system (or recommender system) is a class of machine learning that uses data to help predict, narrow down, and find what people are looking for among an exponential.



# Types of Recommender Systems

# Types of Recommender Systems

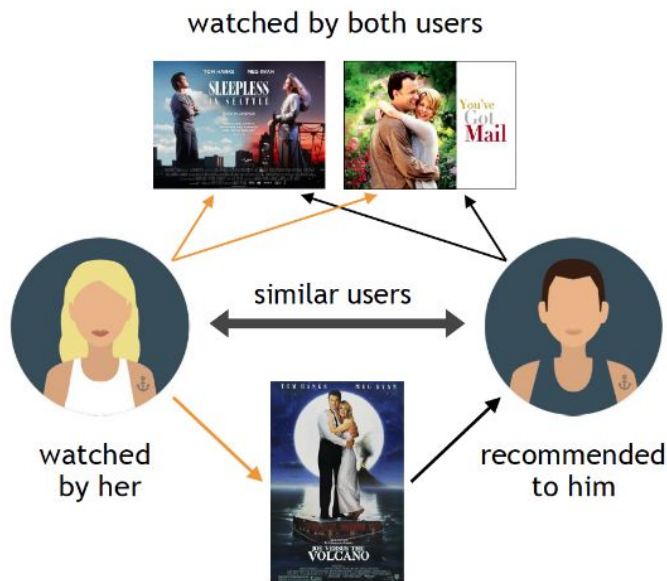
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1. Collaborative Filtering
2. Content-Based Filtering
3. Hybrid Systems

# Collaborative Filtering

- This algorithms recommend items based on preference information from many users
- The idea is that if some people have made similar decisions and purchases in the past, like a movie choice, then there is a high probability they will agree on additional future selections.

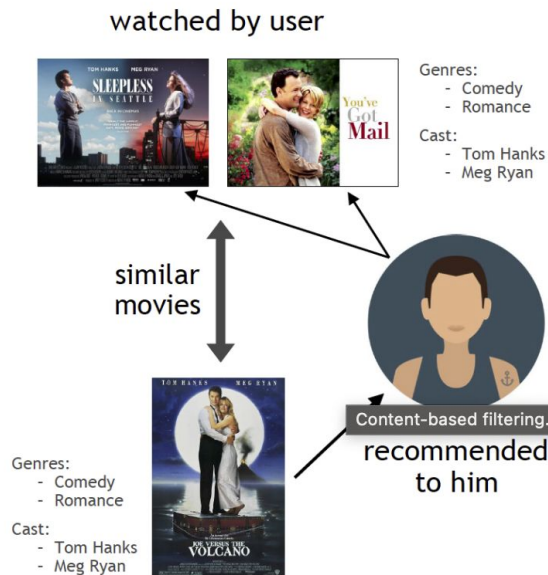
## Collaborative Filtering



# Content-Based Filtering

- This filtering method recommends items based on the features or attributes of items a user has interacted with.
- The system analyzes item characteristics (e.g., genres, cast, keywords) and suggests similar items that match the user's preferences

## Content-based Filtering





# Hybrid Systems

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- Combines collaborative and content-based filtering techniques to improve recommendation accuracy by leveraging the strengths of both methods, reducing limitations like data sparsity and cold-start problems.
- Example:  
Can make recommendations according to the last watched and high-rated movie titles of the user.

# Cosine Similarity

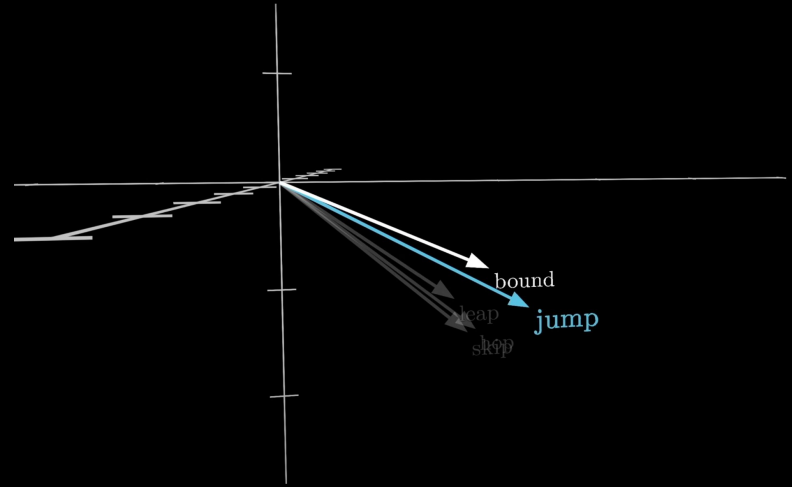
# What is Cosine Similarity?

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- Calculates the cosine of the angle between two vectors.
- Measures similarity between items or users.
- Values range from -1 (opposite) to 1 (identical).
- Formula:  $\cos(\theta) = (A \cdot B) / (\|A\| \|B\|)$ .

# Cosine Similarity Working

Cosine similarity measures how similar two items or users are based on their attributes or preferences. In recommender systems, it compares the user's preferences (like watched movies or ratings) with other items or users to find closely matching ones. Items with higher similarity scores are recommended, as they align closely with the user's interests.



# Play with RecSys!



# Test your knowledge!



The image features a solid black background. In the top right and bottom left corners, there are abstract, organic shapes in shades of bright pink and orange, resembling soft, glowing light or perhaps stylized flames. These shapes are partially cut off by the edges of the frame.

# Group Picture!