

# PINTEREST

-AP2211OO10416





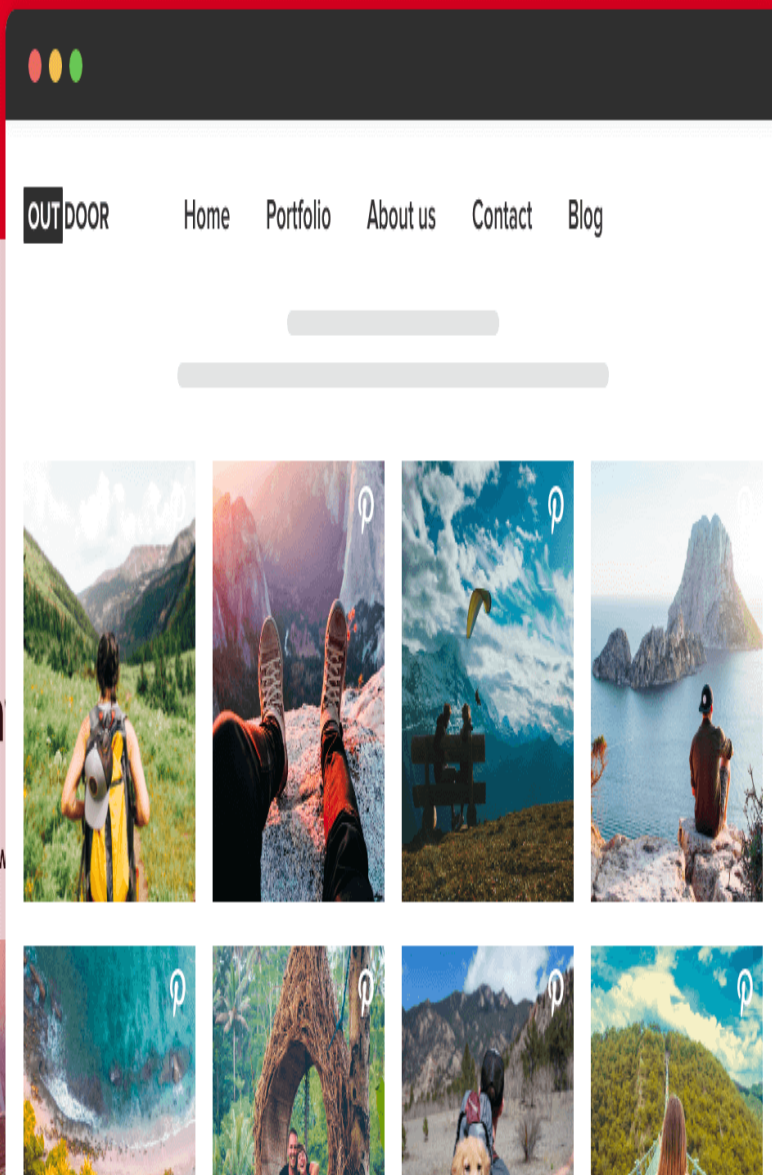




Photograph

@photography

436k followers · 564 follow



## WHAT ARE RECOMMENDER SYSTEMS OF PINTEREST ?

A recommender system is a machine learning-based tool that helps users discover relevant items by predicting preferences or interests. It does this by analyzing user data, item characteristics, or both to make tailored recommendations. These systems are widely used in applications like online shopping, movie streaming, social media, and other platforms that seek to personalize user experiences.

Pinterest uses a hybrid recommender system that combines several recommendation techniques, including content-based filtering, collaborative filtering, and deep learning models.

# TYPES OF RECOMMENDED SYSTEMS

->CONTENT BASED FILTERING

-> COLLEBORATIVE BASED FILTERING

-> HYBRID FILTERING

# CONTENT BASED FILTERING

## Explore Pinterest



## Discover interests



This approach recommends items based on their similarity to items the user has previously shown interest in. It uses item features (e.g., genre, actors, director for movies) to find similar items. For example, if a user likes a specific sci-fi movie, the system will recommend other sci-fi movies with similar characteristics.

steps for content based recommendation:

### 1. Data Collection

Collect item information, including attributes or features that describe each item gather user data if available, such as interaction history, ratings, likes, or any direct feedback.

### 2. Feature Extraction and Representation

Categorical data like genre or numerical data like duration.

### 3. User Profile Construction

Create a user profile that summarizes the user's interests based on the features of items they have interacted with.

### 4. User Feedback and Profile Updating

Use feedback (explicit ratings or implicit behavior) to continuously update the user profile and refine recommendations.

The system becomes more personalized over time, adapting as preferences change.

# COLLABORATIVE BASED FILTERING

These systems are widely used in applications like online shopping, movie streaming, social media, and other platforms that seek to personalize user experiences. This method focuses on item similarity. If two items are often liked or used by the same users, they are considered similar. For example, if many users who watched Movie A also watched Movie B, these movies are "neighbors," and the system will recommend them together.

steps in collaborative recommender system:

1. Data Collection: Collect interaction data between users and items. depends on feedback, rating, likes, reviews.

2. Construct User-Item Interaction Matrix

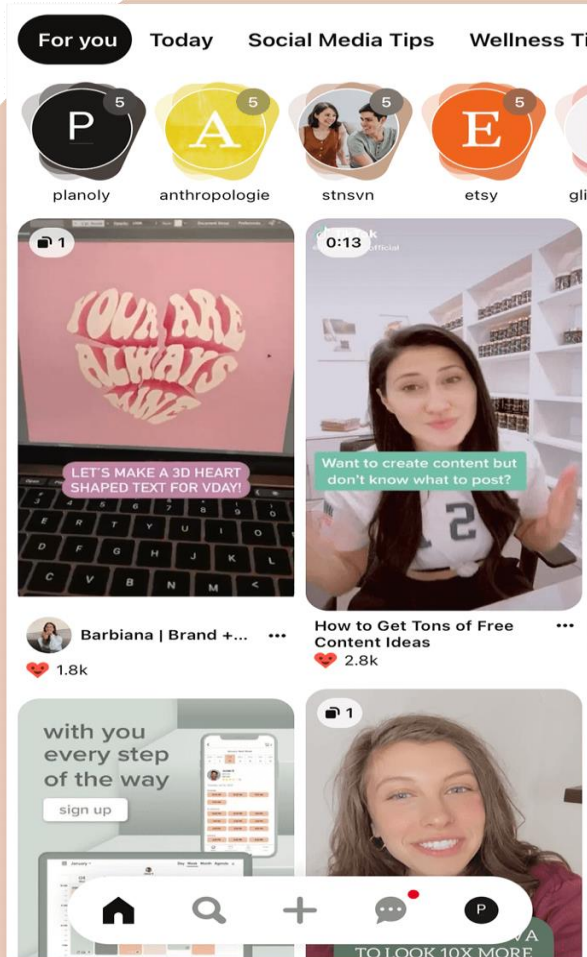
Create a matrix where rows represent users and columns represent items. Each cell contains a value (e.g., a rating or a binary value indicating an interaction) representing the user's interaction with that item.

This matrix serves as the foundation for similarity calculations.

3. Feedback Loop: Update the recommendation model as new user-item

interactions occur. This enables the system to adjust recommendations as user preferences evolve.

Continuous retraining or updating of similarity scores can help keep recommendations.



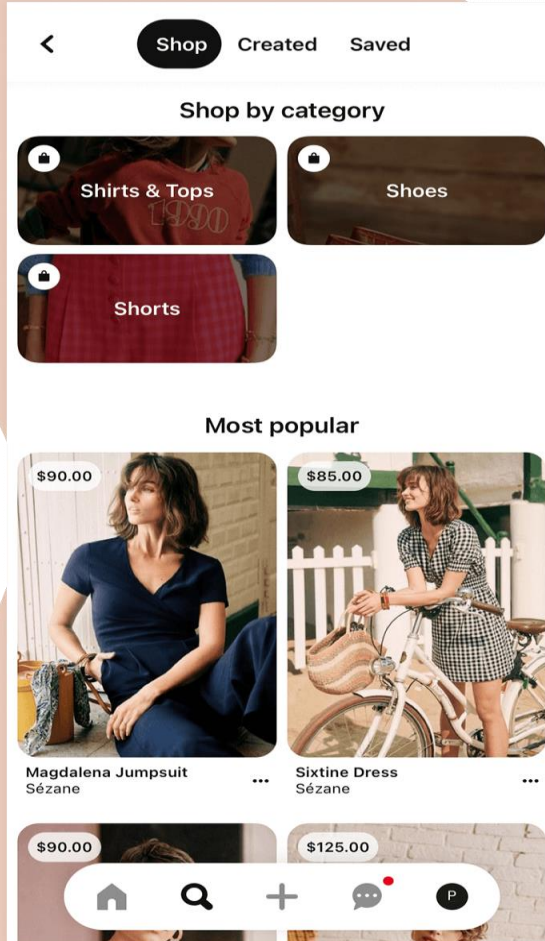
## COLLABRATIVE BASED ON PINTEREST APP

->Pinterest uses collaborative filtering to identify similar user behaviors and preferences. If two users pin or save similar items, they're likely to have similar tastes, so items favored by one user can be recommended to the other.

->This method works well for finding items that are popular within certain user groups or communities, leveraging collective user behavior patterns.



# HYBRID FILTERING



Hybrid recommender systems combine collaborative and content-based filtering to improve recommendations.

## 1. Define the Objective

Clearly define what the recommender system aims to achieve. For example, recommending movies users will enjoy, products they might want to buy, or news articles they are likely to read.

## 2. Model Training and Similarity Calculation

For collaborative filtering, train the model on a user-item interaction matrix.

For content-based filtering, calculate item similarities based on features or build a user profile based on their preferences.

3. Feedback and Updates: Continuously update recommendations based on new user behavior.

4. Choose a Recommendation Technique: in this it will try to solve the problem by using the technique like content-based, collaborative-based, hybrid. it depends on the app or the platform it identifies the process and uses the technique.



# Hybrid Based On Printrest App:

step 1:

Data Collection

User Behavior Tracking: Collect data on user interactions, including pins saved, boards followed, searches, likes, and comments.

Content Analysis: Analyze the metadata of images, descriptions, tags, and visual features using image recognition techniques.

Demographic and Contextual Data: Gather details like user location (for localized recommendations), time of activity, device type, etc.

External Data Sources: Incorporate external sources like trending topics or seasonal trends.

Step 2: Content-Based Filtering

Based on the content a user has engaged with, recommend similar pins.

Use tags, keywords, and image recognition to match new content to user preferences.

Example: If a user frequently pins recipes for vegan desserts, the system will recommend similar vegan dessert recipes.

Step 3: Collaborative Filtering

This technique identifies users with similar behavior and suggests items that are popular within this group. Recommends pins saved by users with similar profiles and preferences.

Recommends pins saved by users with similar profiles and preferences.

Step 4: Hybrid Techniques: Content + Collaborative Filtering

Combine content-based and collaborative filtering to achieve a balance between personalization and discovery.

Example: If a user frequently pins travel images from Italy, the hybrid model might suggest both content with Italian tags and travel images saved by users with similar travel interests.

## Conculusion:

Pinterest uses a hybrid recommendation system that combines content based and collabrative based recommenders to provide users with a highly personalized experience. It also approaches different recommended systems.It uses multi-faceted and designed to enhance content discovery by blending user preferences, visual data, and trending topics.

*Thank you*