Team
Innovative Insights

GITHUB REPOSITORY - LINK

TEAM MEMBERS

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PROBLEM STATEMENT

Build a recommendation system capable of suggesting items from multiple unrelated domains (e.g., movies, books, and recipes) based on a user's activity in one domain.

Constraints:
Ensure diversity and relevance across domains.
Focus on minimal cold-start impact.

Solution Overview

Core Idea

Recommend items from different domains (movies, books, recipes) based on user preferences in one domain by identifying shared patterns.

Approach

1️⃣ Collect Data: Gather user activity (e.g., movie ratings, book reviews, saved recipes).

2️⃣ Find Patterns: Identify similarities across domains using common features like genres or keywords.

3️⃣ Build Model: Use collaborative filtering or content-based filtering for recommendations.

4️⃣ Improve with Feedback: Update recommendations based on user feedback to enhance accuracy.

Tech Stack

Technologies & Tools:

- **Programming Languages: Python (main), SQL**
- **Frameworks & Libraries: TensorFlow/PyTorch, Scikit-learn, Pandas, NumPy**
- **Data Tools: Hadoop/Spark for large-scale data processing**
- **Visualization: Tableau/Matplotlib**
- **Deployment: Docker, Flask/FastAPI, AWS/GCP**

Implementation Plan

- Research and finalize datasets.
- Preprocess and clean data.
- Develop a baseline collaborative filtering model.
- Design and train the multi-domain model.
- Test and refine the system.
- Deploy the solution and monitor performance.

Expected Outcome

- **Generate accurate, diverse, and relevant cross-domain recommendations.**
- **Improve user satisfaction and engagement.**
- **Provide actionable insights for platform owners to enhance their services.**

Challenges

1. **Data Sparsity: Limited user interactions across domains.**
2. **Cold Start Problem: New users or items without prior data.**
3. **Scalability: Managing large datasets across domains.**

CONCLUSION

A cross-domain recommendation system bridges the gap between unrelated domains, offering users diverse and personalized suggestions. By addressing challenges like data sparsity, cold start, and scalability, this system can enhance user engagement and satisfaction while unlocking new possibilities for businesses.

THANK YOU