AuraRead

Book Recommendations System

Aligned with your Vibe

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Project Motivation

- **Why Mood?** Book recommendations help you find stories that spark your interest, and mood-based suggestions offer reads that match how you're feeling, making every book more engaging.

- **Addressing a Gap:** Currently, no existing book recommendation systems integrate mood analysis, missing an opportunity to align book suggestions with reader's emotional states which might lack in providing comfort, inspiration, or entertainment based on their current feelings.

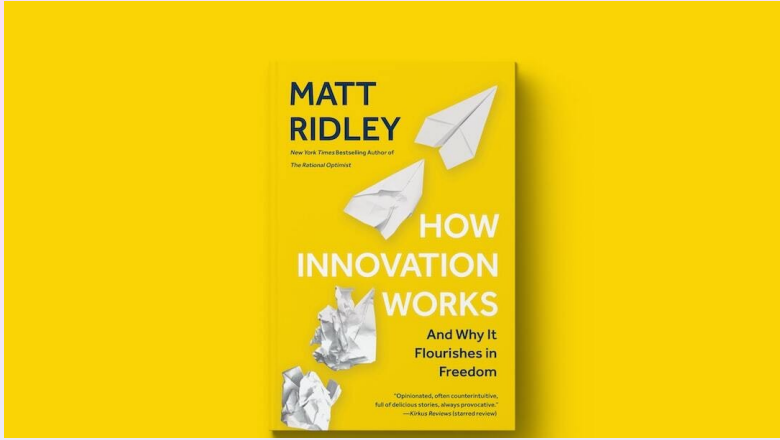
- **Enhancing User Experience:** By integrating mood, the system aims to enhance user engagement and satisfaction, making reading experiences more enjoyable and personalized.

Challenges

- **Missing Mood Tag in Kaggle Dataset :**
  - The dataset obtained from Kaggle lacked mood-associated tags for books, complicating the integration of mood-based recommendations.
- **Dependency on Web Scrapers :**
  - To overcome the absence of mood data, reliance on web scrapers was necessary to extract emotions from book descriptions and reviews
- **Incompleteness of Scraped Data :**
  - Many books lacked sufficient content for mood extraction
- **Model Selection Challenges :**
  - Initial trials with user-user, item-item collaborative filtering and MF did not yield optimal results.
- **Evaluation Challenges :**
  - The absence of proper truth values for evaluation necessitated reliance on manual evaluation using ChatGPT.
- **Cold Start Problem :**
  - Need to address users with insufficient book reading history.

Approach Overview

- **Data Preprocessing :**
  - Created a dataset with assigning mood tags to books based on description and online reviews. Books are categorized into 5 bucket groups - Joyful, Melancholic, Fearful, Romantic, Motivational.
- **Model Selection :**
  - Utilized Matrix Factorization Collaborative Filtering with leveraging SVD technique to predict books based on user preferences.
  - Transform user ratings using logarithmic smoothing to reduce the effect of highly variable ratings and decrease skewness
  - Users with at least three interactions are considered to ensure that the recommendations are based on sufficient user data, which enhances the reliability and accuracy of the predictions.
  - The model includes a mood-based filtering layer that refines recommendations by matching the user's current mood with mood metadata associated with each book ensuring the suggestions are more personalized and relevant.
- **Evaluation :**
  - We have used RMSE metric for our model evaluation and obtained score of 1.12. It highlights that there is a scope of improvement.



Future Scope

- Session Management for Users
- Dataset expansion by providing new book addition feature
- Dynamic Recommendations

Thank you

Youtube Demo : https://www.youtube.com/watch?v=OtPKxmxOq8o
Git URL : https://github.com/prathyushapolepalli-tamu/AuraRead