University of Mumbai

MOVIE RECOMMENDATION SYSTEM

Submitted in partial fulfillment of requirements

For the degree of

Bachelors in Technology

by

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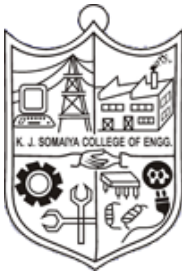

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Batch 2023-2024

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BACKGROUND

In today's digital age, movie enthusiasts are often overwhelmed by the plethora of viewing options available across various streaming platforms. This saturation makes it increasingly challenging for users to sift through and find movies that align perfectly with their individual tastes and preferences. Recognizing the need for a streamlined and efficient way to navigate this vast movie landscape, the concept of a personalized movie recommendation system was conceived.

INTRODUCTION

MOTIVATION

The primary motivation behind developing this expert movie recommendation system is to enhance the movie discovery process for users by providing personalized suggestions tailored to their unique preferences. This system aims to minimize the time and effort users spend in deciding what to watch next, reducing decision fatigue and improving overall user satisfaction with their viewing choices.

SCOPE OF THE PROJECT

The scope of this project encompasses the design and implementation of an expert system that uses a comprehensive knowledge base, a dynamic inference engine, and a user-centric interface to deliver precise movie recommendations. The system is designed to adapt and evolve based on user feedback and viewing habits, ensuring that the recommendations remain relevant and personalized over time.

BRIEF DESCRIPTION

The project involved the creation of an advanced movie recommendation system with several key components:
1. Knowledge Base: A database storing essential movie information such as titles, cast, and genres to facilitate efficient information retrieval and recommendation generation.
2. User Interface: A straightforward and intuitive interface that allows users to input their preferences and receive recommendations easily.
3. Inference Engine: The core of the system, capable of analyzing user inputs, querying the knowledge base, and generating personalized movie suggestions based on specific criteria like past viewings, preferred genres, or favorite actors.
4. Learning Update Mechanism: A feedback loop that continuously refines the recommendation process by incorporating user feedback and updating the system with new movie data and user preferences.

LITERATURE SURVEY

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9269752/

https://www.aasmr.org/jsms/Vol14/No.1/Vol.14%20No.1.28.pdf

PROJECT DESIGN

PROBLEM STATEMENT

Develop an intelligent movie recommendation system that offers personalized movie suggestions based on user preferences such as genre and favorite cast members. The system should provide accurate and enjoyable recommendations, enhancing the overall movie-watching experience for users.

KEY FEATURES

1. Expert Rules for Recommendations:
   - Incorporate expert knowledge and heuristics into the system to generate contextually relevant movie recommendations.
   - Define rules based on user profiles, movie attributes, popularity trends, and thematic similarities.

2. Personalization and Adaptation:
   - Utilize machine learning algorithms to personalize recommendations based on user behavior, preferences, and historical interactions.
   - Enable the system to adapt and improve recommendations over time through continuous learning.

3. Explanation and Transparency:
   - Provide explanations for recommended movies by highlighting the reasoning behind each recommendation.
   - Ensure transparency in the recommendation process, allowing users to understand how suggestions are generated.

4. Feedback Loop and Iterative Improvement:
   - Incorporate a feedback loop where users can rate recommended movies and provide feedback on their relevance.
   - Use feedback data to iteratively improve recommendation accuracy and user satisfaction.

CONCLUSION

The development of an Expert Movie Recommendation System represents a significant advancement in leveraging artificial intelligence for personalized content recommendation. By emulating human expertise and combining it with data-driven algorithms, the system enhances user engagement, promotes content discovery, and elevates the overall movie-watching experience to new heights of personalization and relevance.

SCOPE FOR FURTHER WORK

1. Data Acquisition and Preprocessing:
   - Gather a comprehensive dataset comprising movies from diverse genres and film industries.
   - Preprocess the data to ensure consistency, accuracy, and relevance for the recommendation system.

2. Rule-Based Inference Engine:
   - Develop a rule-based inference engine that incorporates expert knowledge to generate movie recommendations.
   - Define rules based on genre preferences, favorite actors, directors, ratings, release years, and user feedback.

3. Utility Functions and User Interface:
   - Implement utility functions for data validation, spelling checking, and genre/cast list generation.
   - Design an intuitive user interface that allows users to input preferences, view recommended movies, and provide feedback.

4. Testing and Evaluation:
   - Conduct extensive testing to validate the accuracy, performance, and reliability of the expert movie recommendation system.
   - Evaluate the system's effectiveness in recommending relevant and engaging movies to users.