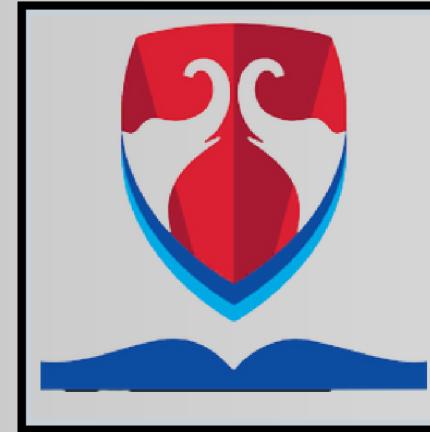


PERSONALIZED MOVIE RECOMMENDATION SYSTEM



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INTRODUCTION

A MOVIE RECOMMENDATION SYSTEM IS A CLASSIC APPLICATION OF MACHINE LEARNING THAT LEVERAGES DATA TO PROVIDE PERSONALIZED MOVIE SUGGESTIONS TO USERS. THIS SYSTEM USES VARIOUS ALGORITHMS AND TECHNIQUES TO ANALYZE USER PREFERENCES AND MOVIE CHARACTERISTICS IN ORDER TO MAKE TAILORED RECOMMENDATIONS. MOVIE RECOMMENDATION SYSTEMS IMPROVE THE USER EXPERIENCE BY PROVIDING PERSONALIZED MOVIE SUGGESTIONS TO USERS BASED ON THEIR PREFERENCES, VIEWING HISTORY, AND BEHAVIOR.

UTILITY OF MOVIE RECOMMENDATION SYSTEM

- ENHANCE USER ENGAGEMENT AND RETENTION BY PROVIDING RELEVANT MOVIE SUGGESTIONS.
- INCREASE USER SATISFACTION BY REDUCING THE TIME SPENT SEARCHING FOR MOVIES.
- BOOST CONTENT CONSUMPTION AND POTENTIALLY DRIVE REVENUE FOR STREAMING PLATFORMS.
- GAIN INSIGHTS INTO USER PREFERENCES AND BEHAVIOR FOR BUSINESS INTELLIGENCE.
- SATISFIED USERS ARE MORE LIKELY TO RETURN TO THE PLATFORM, REDUCING CHURN RATES.

PROJECT OVERVIEW



GOALS AND OBJECTIVES

PROBLEM STATEMENT

DATA RESOURCES

EXPLORATORY DATA ANALYSIS

MACHINE LEARNING MODEL

LIMITATIONS AND CHALLENGES

RESULTS AND RECOMMENDATIONS

REFERENCES

GOALS

- > ENHANCE THE MOVIE-WATCHING EXPERIENCE FOR USERS
- > INCREASE USER SATISFACTION AND RETENTION RATES BY DELIVERING ACCURATE AND PERSONALIZED MOVIE RECOMMENDATIONS.
- > CONTRIBUTE TO THE SUCCESS OF THE MOVIE STREAMING PLATFORM BY ATTRACTING AND RETAINING USERS, LEADING TO INCREASED REVENUE.

OBJECTIVES

- > DEVELOP A SYSTEM THAT CAN PROVIDE PERSONALIZED RECOMMENDATIONS FOR INDIVIDUAL USERS OR USER SEGMENTS
- > IMPLEMENT THE ABILITY TO GENERATE RECOMMENDATIONS IN REAL-TIME AS USERS INTERACT WITH THE PLATFORM.
- > STRIVE TO PROVIDE A DIVERSE SET OF RECOMMENDATIONS TO EXPOSE USERS TO A VARIETY OF MOVIES.

PROBLEM STATEMENT

HOW CAN USER FEEDBACK ON RECOMMENDED MOVIES BE EFFECTIVELY INCORPORATED INTO THE RECOMMENDATION PROCESS AND RECOMMENDATION SYSTEMS INCORPORATE CONTEXTUAL INFORMATION, SUCH AS USER LOCATION, TIME OF DAY, OR CURRENT MOOD, TO IMPROVE THE RELEVANCE OF RECOMMENDATIONS?

DATA RESOURCES-

KAGGLE

USER REVIEWS

SOCIAL MEDIA

API(S) - TMDB
IMDB

MACHINE LEARNING MODEL

Content-Based Filtering

CONTENT-BASED RECOMMENDATION SYSTEMS RECOMMEND MOVIES BASED ON THE CONTENT FEATURES OF ITEMS AND A USER PROFILE. FOR MOVIES, THIS MIGHT INVOLVE CONSIDERING FACTORS LIKE GENRE, ACTORS, DIRECTORS, AND KEYWORDS.

EXPLORATORY DATA ANALYSIS

EXPLORATORY DATA ANALYSIS (EDA) IS A CRUCIAL STEP IN UNDERSTANDING AND GAINING INSIGHTS FROM A DATASET.

VARIOUS PYTHON LIBRARIES HAVE BEEN USED FOR EDA-

NUMPY
PANDAS
MATPLOTLIB
SEABORN

LIMITATIONS AND CHALLENGES

SCALABILITY:

- AS THE USER BASE AND MOVIE LIBRARY GROW, THE RECOMMENDATION SYSTEM MUST SCALE TO HANDLE A LARGER DATASET EFFICIENTLY.

REAL-TIME RECOMMENDATIONS:

- PROVIDING REAL-TIME RECOMMENDATIONS AS USERS INTERACT WITH THE PLATFORM CAN BE COMPUTATIONALLY INTENSIVE, REQUIRING EFFICIENT ALGORITHMS AND INFRASTRUCTURE

DATA QUALITY AND PREPROCESSING:

- THE QUALITY OF THE INPUT DATA, INCLUDING USER RATINGS AND MOVIE INFORMATION, CAN IMPACT THE EFFECTIVENESS OF THE RECOMMENDATION SYSTEM.

RESULTS AND RECOMMENDATIONS

USER INTERACTION METRICS-

- CLICK-THROUGH RATES
- TIME SPENT ON THE PLATFORM
- THE NUMBER OF RECOMMENDATIONS CLICKED
- CAPTURING AND ADAPTING TO CHANGES IN USER PREFERENCES OVER TIME
- RESEARCH ON CONTENT-BASED RECOMMENDATION SYSTEMS INCLUDING THE USE OF MOVIE METADATA AND FEATURE EXTRACTION.

Thank
you!