**Movie Recommendation System**

**Background:** As digital media consumption continues to grow, users are overwhelmed with vast content libraries. Recommender systems address this challenge by analyzing user preferences and suggesting personalized content. Effective recommendation systems not only enhance user satisfaction but also increase platform engagement and retention.

**Abstract:** This project implements a movie recommendation system that employs collaborative filtering techniques to provide tailored suggestions. The system uses user-item interaction data to calculate similarities between users and movies, thereby identifying relevant recommendations for individual users. Advanced algorithms such as matrix factorization are utilized to handle sparsity and scalability issues, ensuring accurate results even with large datasets. The system demonstrates the application of machine learning in creating user-centric platforms, improving content discoverability, and enhancing user experience.

**Key Features:**

* Collaborative filtering to predict user preferences.
* Scalable solution for large datasets.
* Incorporation of advanced algorithms like matrix factorization.
* Real-time recommendation generation for dynamic