CANTILEVER AIML PROTERNSHIP 2025

ABSTRACT

Project Title:
MOVIE RECOMMENDATION SYSTEM

Team Details:

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Abstract:
This project focuses on building a Movie Recommendation System using fundamental machine learning concepts and executing it within a Jupyter Notebook environment accessed via the Anaconda Prompt. With the increasing volume of movies available on digital platforms, the system is designed to assist users in efficiently discovering movies that

align with their preferences. It employs both content-based filtering, which recommends movies based on attributes such as genre, keywords, cast, and crew, and explores collaborative filtering, which leverages user ratings to find patterns in viewing behavior. The project utilizes open-source datasets like MovieLens or TMDB, and involves key machine learning steps such as data cleaning, preprocessing, feature extraction using techniques like TF-IDF and CountVectorizer, and similarity computation using cosine similarity from the Scikit-learn library. Python libraries including Pandas, NumPy, Matplotlib, and Scikit-learn are used for data handling, visualization, and modeling. The notebook-based implementation not only allows for step-by-step execution and visualization but also makes it beginner-friendly and interactive. The system demonstrates how core ML principles can be applied to build a useful, real-world application, serving as both a practical tool and an educational introduction to machine learning and recommendation engines. This project lays a strong foundation for further exploration into more advanced techniques such as hybrid models or deep learning-based recommendation systems.

Results and Contributions:

The resulting system provides personalized movie suggestions with reasonable accuracy and low computational cost. This project highlights how basic machine learning models can be effectively used to solve real-world recommendation problems without the need for deep learning or complex infrastructure. It serves as a foundation for understanding more advanced systems used in industry.

Conclusion:

This Movie Recommendation System offers a comprehensive, beginner-friendly approach to learning and applying basic machine learning concepts in the field of recommendation engines. By using accessible tools like Anaconda and Jupyter Notebook, it encourages experimentation and further exploration into more sophisticated recommendation methodologies. This project not only aids user decision-making but also serves as an educational resource for students and enthusiasts in AIML.