Movie Recommender

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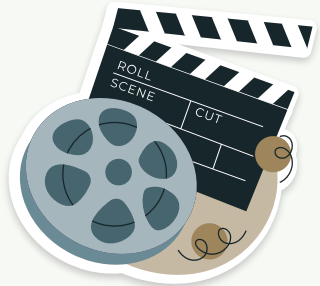
Problem Statement

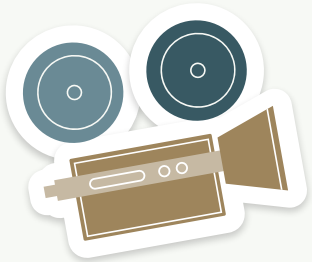


The Problem: Finding a new movie to watch to entertain themselves while surfing the web.

The Solution: A web application that recommends the next movie a user should watch using K Nearest Neighbors to determine the movies.

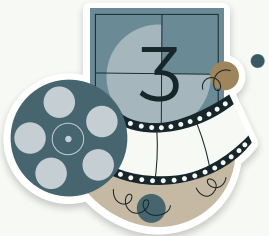
Description of Software

Front End	HTML, CSS & JavaScript
Back End	Python
Framework	Flask
Libraries	Scikit-Learn, FuzzyWuzzy, Pandas & Random
APIs	TMDB API
Algorithm	K-Nearest Neighbors
Dataset	MovieLens 1M



Evaluation Metrics

- **User Interface Demonstration:** The application displayed relevant recommendations when 'Toy Story' was input, including 'Toy Story 2', 'An American Tail', 'Aladdin and the King of Thieves', and 'A Bug's Life'.
- **Validation of Recommendation Feature:** The result of 'Toy Story' recognize and suggest closely related titles, demonstrating proficiency in generating relevant movie suggestions.
- **Evaluation Methodology:** The evaluation involved inputting a movie title into the search bar and analyzing the list of similar movies provided by the application.
- **Example Outcome:** Inputting 'Toy Story' resulted in a list that included similar movies, indicating the application's effectiveness in identifying comparable films.
- **Issue Identified:** The application sometimes includes the input movie in the recommendation list, which is seen as redundant and an area for improvement.
- **Additional Feature - Fan Favorites:** A feature providing links to a list of fan favorite movies for users enhances overall user engagement.
- **Overall Conclusion:** The application functions well in recommending similar movies, but minor issues like the redundancy of the input movie in the recommendations need addressing.



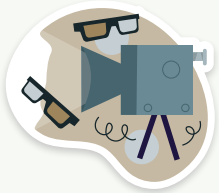
Conclusion & The Future

Key Lessons Learned:

- Practical implementation of the K-Nearest Neighbors algorithm in a real-world scenario.
- Importance of efficient and effective data utilization, especially in a movie recommender system.
- Recognizing the significance of accurate title recognition to enhance recommendation accuracy.
- Integration of backend processes and machine learning logic using K_Nearest Neighbors as a crucial learning aspect for future projects.

Future Enhancements:

- Introducing a feature for users to rate movies, enhancing personalized recommendation.
- Expanding the dataset to include newer movies, increasing the application's appeal to a broader user base.
- Emphasizing performance optimization as the dataset grows, ensuring smooth functionality.
- Planning to use demographic data such as zip codes and ages for more targeted recommendations, which would involve users providing this information during account creation.



References

GroupLens. (n.d.). MovieLens 1M Dataset. Minneapolis, Minnesota, United States of America. Retrieved November 20, 2023, from https://grouplens.org/datasets/movielens/1m/

Demonstration