

# Movie Recommendation System

## Skills & Technologies

Python, Pandas, Scikit-learn, Machine Learning, TF-IDF, Cosine Similarity, Streamlit, TMDB API

## Project Overview

This project focuses on building a Movie Recommendation System that helps users choose what to watch by recommending movies similar to their preferences. It reduces confusion caused by large movie catalogs on OTT platforms by providing intelligent, content-based suggestions.

## Project Description

I built an interactive Movie Recommendation System using Python, Machine Learning concepts, and Streamlit.

I started by loading a movie dataset (CSV) and performing preprocessing using Pandas, including handling missing values and selecting relevant textual features such as movie descriptions and genres.

Next, I applied TF-IDF Vectorization to transform textual data into numerical form and used Cosine Similarity to measure similarity between movies. Based on similarity scores, the system recommends the top 5 similar movies when a user selects a movie.

To enhance the user interface, I integrated the TMDB API using the Requests library to fetch movie posters, ratings, and overviews dynamically.

The frontend was developed using Streamlit, providing a dropdown menu for movie selection and a recommendation button that displays results in an interactive and visually appealing layout.

## **Key Features**

- Content-based movie recommendation
- TF-IDF and cosine similarity based matching
- Displays movie posters, ratings, and overview
- Interactive Streamlit UI
- Dynamic recommendations based on user selection

## **Outcome**

The system delivers accurate and relevant movie recommendations, improving user decision-making.

This project showcases practical implementation of machine learning algorithms, data preprocessing, and interactive web application development.

## **Learning Outcomes**

- Strong understanding of content-based recommendation systems
- Hands-on experience with TF-IDF and cosine similarity
- Building interactive ML applications using Streamlit
- Working with real-world datasets and APIs