

HARPY AEROSPACE INTERN PROJECT1

RECOMMENDATION SYSTEMS IMPLEMENTED:

RECOMMENDATION SYSTEM 1: K-NEAREST NEIGHBORS (KNN) MODEL

Description:

This model is a recommendation system for the MovieLens dataset using the K-Nearest Neighbor (KNN) algorithm.

Dataset: MovieLens 100k dataset.

Features:

1. Loads and preprocesses MovieLens 100k dataset for user-movie ratings.
2. Defines a custom recommendation model using K-Nearest Neighbor (KNN).
3. Trains the model with the KNN algorithm and evaluates using standard recommendation metrics.
4. Implements efficient retrieval of nearest neighbors based on learned similarities.
5. Provides personalized movie recommendations for users based on their preferences.

RECOMMENDATION SYSTEM 2 : SEQUENATIAL BASED MODEL

Description: This model is a recommendation system for the MovieLens dataset using a Sequential-Based Model.

Dataset: MovieLens 100k dataset.

Features:

1. Loads and preprocesses MovieLens 100k dataset for user-movie ratings.
2. Defines a custom recommendation model using a Sequential-Based approach.
3. Trains the model with appropriate optimization techniques and evaluates using standard recommendation metrics.
4. Implements efficient sequence modeling for predicting user preferences based on historical data.
5. Provides personalized movie recommendations for users based on their sequential viewing history.

RECOMMENDATION SYSTEM 3 : ENHANCED NEURAL COLLABORATIVE FILTERING (NCF) MODEL

Description: This model is a recommendation system for the MovieLens dataset using an Enhanced Neural Collaborative Filtering (NCF) Model.

Dataset: MovieLens 100k dataset.

Features:

1. Loads and preprocesses MovieLens 100k dataset for user-movie ratings.
2. Defines a custom recommendation model using Enhanced Neural Collaborative Filtering (NCF).
3. Trains the model with advanced neural network techniques and evaluates using standard recommendation metrics.
4. Implements efficient deep learning techniques to capture complex user-item interactions.
5. Provides personalized movie recommendations for users based on their preferences through enhanced neural network modeling.