

# Hybrid Recommender Systems

Mohamed Elsaied

Abstract:

Recommender systems are one of the most used applications of machine learning nowadays, where some businesses are solely dependent on how good their recommendations to customers are (Amazon, Netflix, etc ...). This used not to be a problem where items used to be recommended by popularity and that worked well, but with having millions of catalogs and a massive amount of users ratings, new algorithms had come out like Content-based filtering and Collaborative filtering. Content-based filtering takes into consideration a set of informative features that are leveraged to predict unknown user's rating to an item through similarities of items' or users' features. On the other hand, collaborative filtering is built upon the preference and interactions of users with items where unknown ratings are predicted based on previously known rating history and do not focus on content features as content-based filtering.

This tutorial will introduce the motivation behind a recommender system, introduce what is a utility matrix, Content-Based Recommendation, Collaborative filtering, and hybrid recommenders. We will also touch on dimensionality reduction, Evaluation of recommenders.