

# Recommender System for Generic User Preferences for Online Content

Shayan Raju

Informatics Institute of Technology  
57 Ramakrishna Rd, Colombo 00600  
Sri Lanka  
shayanraju@gmail.com

Guhanathan Poravi

Informatics Institute of Technology  
57 Ramakrishna Rd, Colombo 00600  
Sri Lanka  
guhanathan.p@iit.ac.lk

**Abstract**—Most recommendation systems have been increasingly in development ever since the major content expanse on the World Wide Web and these recommendation systems serve as a way to handle the rate at which content is uploaded to the internet in such a very short period of time. Recent statistics conducted strongly suggest that almost 300 hours of video and content is uploaded to YouTube almost every minute, and the major amount of vast resources that are available for use to the users make it a challenge to find the exact content or even the best content that they often desired. The spread of high-bandwidth internet and the major increased saturation of internet users has brought upon the big data era, and it has been brought to light that certain high-end content providers who cater a large number of users and subscribers, enlist to using their own forms of custom recommendation systems to sort through the near unlimited number of videos in their databases in order to allow their users better access to their content.

**Index Terms**—Component, formatting, style, styling, insert.

## I. RECOMMENDATION SYSTEMS OVERVIEW

According to [1], aggregations of data such as user profiles and user interests, are procured from the components such as the liking and disliking options of a content provider and this data is then used solely for input to the content providers recommendation system, making the actual purpose of the linking and disliking options into a method of data gathering. As stated in the study conducted by [2], a China Internet Network Information Center (CNNIC) report suggests that near the end of the year 2015 the number of people using videos online had reached nearly 504 million. Therefore, the chances of major websites directing their users to content that will exactly suit their preferences will reduce and this is a major issue. Because of these issues, most major content providers and commercial websites have come to the decision that recommendation systems that can be personalized to certain users is a must in their business, and this is what makes the accuracy of most e-Commerce systems great when compared to others. Due to this, major steps have been taken in order to increase the accuracy and efficiency of the algorithmic approach to recommendations.

## II. METHODS OF RECOMMENDATION

The two major types of recommendation algorithms used in these systems are Content-Based and Collaborative Filtering recommendation. Additionally, the techniques pointed out by [2] aside from the two mentioned, include graph based and hybrid recommendation, and the study introduces the newer concept and more efficient concept of Hyperlink-graph. As mentioned and defined by [1], the techniques of recommendation which involve analysis of context as opposed to content, are available for use and can be divided mostly into Attribute-Aware Recommendation and Cross-Domain Recommendation. Content-Based Recommendation, according to [3] are systems that allow items for recommendation to be suggested based on a certain level of relevance between the user and the item. Relevance score for each user is calculated by considering items that the user has interacted with and comparing them against new items. Mapping similarity can be done using cosine similarity equations, which is a method used commonly for information retrieval in which documents and their content requires comparing.

The Collaboration filtering methods can be thought of as the most successful form of recommendation technology used [4]. The systems work by categorizing users into clusters of other users by matching their similar interests together and determining that those users belong to a certain common group, a group whose attributes can vary, and the recommendations that one user in a group will receive can be suggested to others in the group as well. This study further goes on in order to suggest that collaboration filtration systems can be sectioned into user-based and item-based systems. User-based system predicts scores of certain resources by finding the neighbors nearest.

Due to the major flow of data to the internet and the subsequent creation of the big data era, majority of systems have since been created in order to attempt to suit a specific and personalized set of users in their recommendation needs, and other work has been done to attempt to further improve the current methods used in these systems in order to prevent errors and provide greater accuracy in recommendations.