

An Analysis for Improving Serendipity in Academic YouTube Video Recommendations

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Abstract

YouTube is known as one of the largest online video repositories and is used in many domains. However, even though it is commonly used for educational purposes, the aims of an educator and YouTube may not coincide. The educator wants learners to watch only what is needed and proceed to their practical work. YouTube, on the other hand, focuses on maximizing revenue. Therefore, videos with low popularity are generally not being recommended. Such low-popularity videos may actually be helpful to the learner had they been recommended. This is known as serendipity or long-tail recommendation. This paper aims to first understand how serendipitous YouTube recommendations are. Second, to analyze how sentiment polarity affects recommendations. Third, to provide a clustering and video recommendation as an alternative to YouTube recommendations, focusing on learning. The result of this research shows that, first, YouTube recommendations lack serendipity but include sentiment along with other factors. Second, the sentiment polarity has an effect on serendipity. The exclusion of dislike counts would make the recommendation favor view counts. The inclusion of dislike counts increases the serendipity factor in the recommendation list. Third, the research utilizes k-means for video clustering with like-to-dislike ratios. This feature recommends more serendipitous videos than the default YouTube recommendation. These results improve academic video recommendations on YouTube.

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