

# **A Novel Approach for Measuring Video Similarity without Threshold and Its Application in Sports Video Categorization**

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## **Abstract**

One of the most important issues for measuring video similarity is the difficulty in identifying the optimal frame similarity threshold, which often tends to vary in an unpredictable pattern, and has to be manually determined. Moreover, most video data are huge files, which vary in terms of length and amount of data, resulting in time-consuming data processing. In this paper, we propose video similarity measurement for sports video categorization using expected value to average distance of video frames without the threshold. The distance between each sequence of the training and test videos was determined by comparing each sampling frame of the training videos with all sampling frames of the test videos and averaged by the expected value. In addition, each frame was represented with the color histogram to help enhance feature reduction, resulting in faster data processing. After that, the nearest neighbor (NN) classifier was applied to compare the similarity of the videos. Our experimental results show that this approach can achieve 97.0% accuracy in sports video similarity measurement.