GA based Ensemble Classifier for Efficient Visual Content Information Retrieval

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Abstract

Visual Content based Information retrieval has been one of the demanding research areas in the field of image and video retrieval. Few research works have been developed for video retrieval with aid of classification techniques. But, performance of conventional visual content based video retrieval methods was not efficient. A Gene Based Similarity Threshold Classifier (GSTC) Technique is proposed in order to improve the performance of visual content based video retrieval with higher precision, recall, F1 Measure and minimum time complexity. The GSTC Technique used Jaccard similarity coefficient to find out relevant videos in a given dataset based on query video clip. After identifying the relevant videos, GSTC Technique applied similarity threshold classifier in order to classify the videos into a different class based on diverse similarity threshold value with improved classification accuracy. Finally, GSTC Technique used genetic algorithm in order to discover the optimal similarity threshold value in population with aid of measured fitness function. This in turns, more similar related to query video are obtained for efficient video retrieval. The GSTC Technique conducts the experimental works on metrics such as classification accuracy, time complexity, F-measure, Precision and
recall using three datasets.

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Index Terms

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Keywords

Genetic Algorithm, Jaccard Similarity Coefficient, Query Video, Similarity Threshold Classifier, Similarity Threshold Value, Visual Content, Videos