CSE 515 (Fall2016) Phase 3 Report: Group 17

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**Abstract**

Finding similarity of frames between multiple videos is not enough. They also have to be listed according to some kind of importance or relevance. In phase2, we listed them by sorting with respect to the similarity index. The frame with highest similarity came first and the top *k* frames were selected as most similar sub-sequence. In phase3, we have improved the listing logic by implementing intelligent algorithms which list similar frames by significance, relevance and also by nearest neighbor importance in high dimensional spaces. SIFT vectors in a reduced space have been used as input considering they describe important visual features. Algorithms like PageRank and ASCOS++ have been used for ranking according to significance. Relevance feedback based algorithms like personalized PageRank and personalized ASCOS ++ have been used and nearest neighbor based technique of Locality Sensitive Hashing has also been used. This report talks about all these implementations in detail.

**Keywords**

**Feature Extraction, Similarity Graph, Significant Frame, Relevant Frame, Page Rank, ASCOSS, Personalized PageRank, Locality Sensitive Hashing, Multi-dimensional Indexing**

# Introduction

Terminology

Nice.

Goal Description

Nice.

Assumptions

Nice.

# implementation

Task 1: Video Feature Extraction

Nice.

Task 2: Video Frame Similarity Graph Generation

Nice.

Task 3: Most Significant Frame Selection

Nice.

Task 4: Most Relevant Frame Selection

Nice.

Task 5: Multi-dimensional Index Structures and Nearest Neighbor Search

Nice.

Task 6: Similar Video Object Search

Nice.