STORYLINE RECONSTRUCTION FOR IMAGES

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1. Motivation

Increasing number of unstructured image streams uploaded on web !!

flickr 5.26 billion public images until December 2014

40 million images uploaded daily

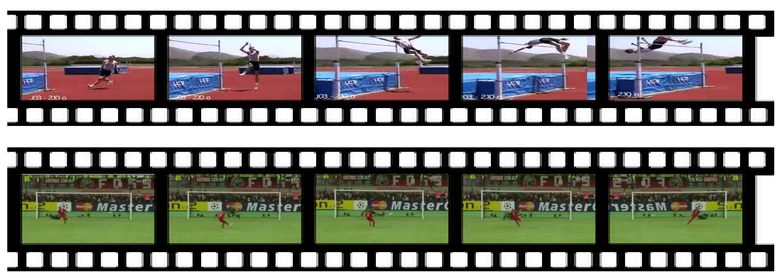
YouTube 400 hours of video per day

2. Problem

Input : Photostream – P {P1, P2, P3, P4}
Output : Chronological Sequence – P' {P3, P2, P1, P4}
Idea : 1. Cluster the keyframes generated from videos.
2. Image matching with all images in ordered cluster to get voting for correct order.

3. Dataset

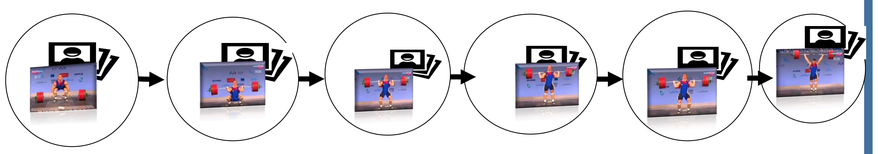
- UCF101 action recognition dataset collected from YouTube videos (Sports category).
- Ten categories with 70 videos in each.



4. Approach

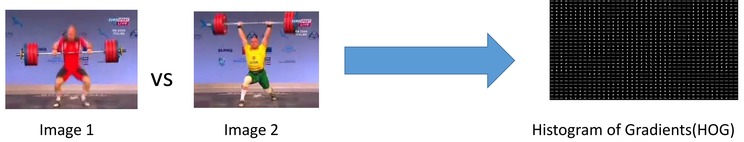
- Generate keyframes from Video.

- Create ordered clusters of similar frames



- Use image matching algorithm to get votes.

Image Matching Algorithm



Spatial Pyramid (Biased SIFT features + HOG)

Histogram Intersection

$$K(a,b) = \frac{\sum_{i=1}^{n} \min(a_i, b_i)}{\min(\sum_i a_i, \sum_i b_i)}$$

Match Score

5.Results

- To be added later

6.References

Gunhee Kim, Leonid Sigal, and Eric P. Xing *Joint Summarization of Large-scale Collections of Web Images and Videos for Storyline Reconstruction* ,CVPR 2014