

Homework #4

a) Summary of paper

TOPIC TRACKING ACROSS BROADCAST NEWS VIDEOS WITH VISUAL DUPLICATES AND SEMANTIC CONCEPTS

The paper propose new representations and similarity measures for news videos based on low-level features, visual near-duplicates, and high-level semantic concepts automatically detected from videos. The function focuses on 'topic tracking', that means associating incoming stories with topics that are known to the system. The paper experiments using TRECVID 2005 data set confirm that near-duplicates consistently and significantly boost the tracking performance by up to 25%.

1) Advantages:

- 1 Find out that near-duplicate plays an important role in story tracking. The result is showing in diagram and easy to notice.
- 2 Experiment on different languages to show the flexible of the framework.
- 3 Reducing the cue words from 11562 to 4000 by Machine Translation, moreover, reduce them from 4000 to 120 by information Bottleneck principle.
- 4 The idea adopt a modified KNN (K-Nearest Neighbor) to measure the topics relevance score $R_m(s_i)$ of story s_i using modality m is a good idea.

2) Room for improvement:

- 1 The terms show on the paper is not so intuitive for me. My problem is there are so many unfamiliar terms, such as, *coverage*, *false rate*, etc.
- 2 The paper show lots of detail to increase the performance, however is a little hard for me to catch the big scheme of the contribution.