A first example of LaTeX

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1 Reference

Su, Yu-Chuan, Tzu-Hsuan Chiu, Yan-Ying Chen, Chun-Yen Yeh, and Winston H. Hsu. "Enabling low bitrate mobile visual recognition: a performance versus bandwidth evaluation." In Proceedings of the 21st ACM international conference on Multimedia, pp. 73-82. ACM, 2013.

2 Terminogy

Recognition bitrate: amount of transmition data under same recognition performance. thumbnail image is most competitive for low bitrate recognition.

3 Summary

New strategy: combining single local feature signature with thumbnail image could greatly reduce bitrate with only little performance degrade. [contribution]

Why low bitrate?
1) low bitrate lead to faster response time.
2) lower network usage, reducing the power consumption.
user statisfaction(for the system)
1. response time
2. accuracy
3. power consumption
4. scale of semantic space

the paper mainly comparing some transferring strategy performance:
1. features with moderate dimension
2. compressed feature
3. feature signature
4. scaled-down images

4 stest

scaled-down images(=thumbnail) best, because it contains multfeatures at once.

5 Main contribution

1. recognition bitrate concept (original)
2. comparisons of various strategy
3. combing multi features. -¿ reduce bitrate
4. New strategy: single feature + thumbnail.

6 Set up

1) selecting features. global features(color histogram, color moment, gabor, lbp, phog); loca feature(DoG, HA, Dense, SURF‘)
2) Descriptor. LLC(Bag of Words) VLAD(Fisher Vector)
3) Feature extraction different scale(1/2, 1/4, 1/8, 1/16).
4) classifier SVM linear kernel.
5) compression factor of images image scaling, openCV.

7 Multi feature fusion !!!(IMPORTANT)

1. compare global, local feature's accuracy(—¿ single feature is not enough, even though local feature's accuracy is high)

2. add feature fusion's accuracy, comparing, then conclude that multiple feature fusion has a significant improvement for the accuracy, fusion is important. (see Figure4, 5, 6, 7)

Image scaling reduces bitrate

1. performance of global feature not degrade after image scaling down.

2. performance of LOCAL feature degrade more comparing with global feature.

3. feature fusion(multiple feature) still outperformance the single feature.

COMMENT: this part seems the performance vs bitrate, but actually I cannot find the comparison, I just noticed all the global vs local, single feature vs multiple feature(feature fusion), then according the graph under the same Byte, we could see fusion is better

Feature signature achives lower bitrate 1. compare fusion, local feature's bitrate, even though multiple local feature is best, taking the computing ability of mobile device, using thumbnail+signature is a good way to reduce power consumption.

8 future work

1. focus(currently dimension of feature and data transmittion), will extend to real system and photos taken by the mobile device.

2. recognition bitrate of videos.

3. better signature generation.