FELIX STÜRMER

SKETCH-BASED IMAGE RETRIEVAL USING CURVELETS

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An Evaluation of Curvlet-Based Cross-Domain Descriptors for Sketch-Based Image Retrieval

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ABSTRACT

Short summary of the contents...

ACKNOWLEDGMENTS

acknowledgments go here...

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LISTINGS

ACRONYMS

1 INTRODUCTION

1.1 MOTIVATION

- Definition CBIR
- historical intro [CBIR at the end of the early years]
- Why CBIR: Insufficient Mapping Image <=> Language
  - Search by Example
  - Association Search (Discovery)
- Sematic Gap

1.2 OUTLINE

Thesis outline goes here

2

BACKGROUND & RELATED WORK

Most approaches can be characterized by looking at three stages in their processing pipeline:

INPUT FORMAT The structure of the input data determines the amount of information available to the subsequent processing steps. Possible preprocessing steps include color space conversion, scaling and edge extraction.

EXTRACTED FEATURES The large number of coefficients produced by the curvelet transform are reduced to a set of feature coefficients.

DISTANCE METRIC In order to rank the images according to similarity a metric is used to calculate the distance in feature space between two sets of feature coefficients. The selection of a metric is often closely coupled with the feature extraction algorithm.

2.1 INPUT FORMAT

2.2 FEATURES

- bag of features from k-means clustered visual words [video google]
- great comparison of sampling for k-means clustered vws [nowak06]

2.3 METRIC

- after ranking using euclidean distance, rank by spatial similarity [video google]
- Earth Mover's distance? [rubnerljcv00]

3 PROPOSED SOLUTION

Proposed solution goes here...

3.1 INPUT FORMAT

- Luma component (Y') of Y'UV representation
- Gradient magnitude of Sobel operator of luma component
- Canny edge map of luma component
- gPb

3.2 FEATURE EXTRACTION

- Global features: mean and standard deviation
- Local features: visual words via k-means clustering

3.3 DISTANCE METRIC

- Euclidean Distance

4 EXPERIMENTAL RESULTS

Experimental results go here...

5 ANALYSIS

Analysis goes here...

6 CONCLUSION

Conclusion goes here...

COLOPHON

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DECLARATION

Put your declaration here.

Berlin, January 2012

Felix Stürmer