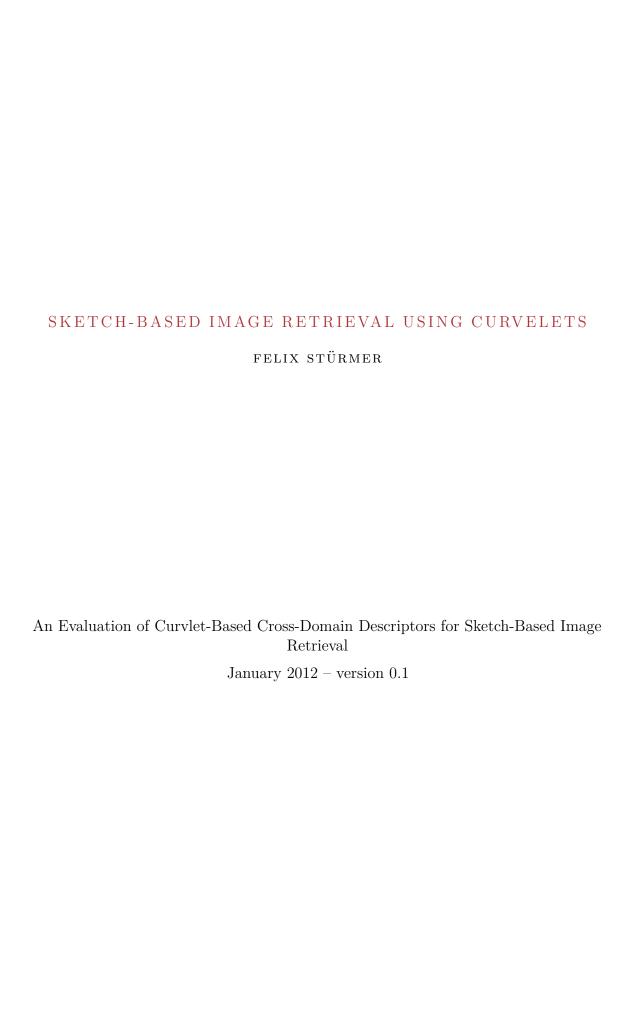
# FELIX STÜRMER

# $\begin{array}{c} {\rm SKETCH\text{-}BASED\ IMAGE\ RETRIEVAL\ USING} \\ {\rm CURVELETS} \end{array}$



Felix Stürmer: Sketch-Based Image Retrieval using Curvelets, An Evaluation of Curvlet-Based Cross-Domain Descriptors for Sketch-Based Image Retrieval, © January 2012 [ March 19, 2012 at 19:02 - classic thesis version 0.1 ]

# ABSTRACT

Short summary of the contents...

# ACKNOWLEDGMENTS

acknowledgments go here...  $\,$ 

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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

#### 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]

## 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
- $\bullet$  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

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# EXPERIMENTAL RESULTS

Experimental results go here...

5

# ANALYSIS

Analysis goes here...

6

# CONCLUSION

Conclusion goes here...

#### COLOPHON

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DECLARATION	
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Berlin, January 2012	
	Felix Stürmer