

Analysis of Image Transforms for Sketch-based Retrieval

Diploma Thesis

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Outline

Introduction and Background

- Motivation

- Challenges of CBIR

- Anatomy of a CBIR System

Proposed Solution

- Acquisition

- The Curvelet Transform

- Feature Extraction

- Ranking

Results

- Benchmarking

- Cross-Domain Results

- Intra-Domain Results

Conclusions

Motivation

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Challenges of CBIR

The Semantic Gap

*“The semantic gap is the **lack of coincidence** between the information that one can extract from the **visual data** and the **interpretation** that the same data have for a user in a given situation.” – Smeulders et al.*

The Sensory Gap

*“The sensory gap is the gap between the **object in the world** and the information in a (computational) description derived from a **recording of that scene**.” – Smeulders et al.*

Anatomy of a CBIR System

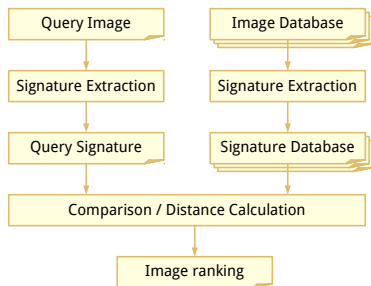


Figure: Global Descriptors

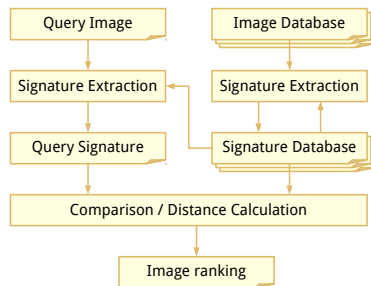


Figure: Local Descriptors

Acquisition

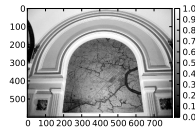
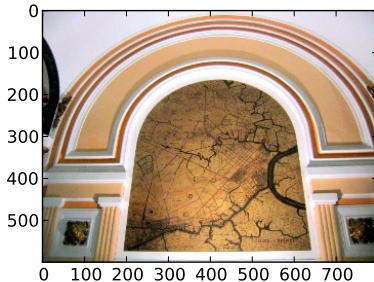


Figure: Luma
Conversion

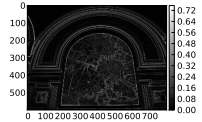


Figure: Sobel
Operator

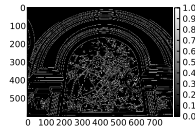


Figure: Canny

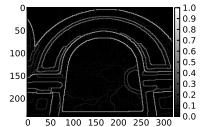


Figure: gPb-owt-ucm

The Curvelet Transform

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The Fast Discrete Curvelet Transform

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Global Feature Extraction

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Local Feature Extraction

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Ranking

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Benchmarking Method

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Cross-Domain Results

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Intra-Domain Results

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Conclusions

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