A Comparative Study of Mobile-Based Landmark Recognition Techniques

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Landmark Recognition System

- Content Analysis
- Context Analysis
- Classification
Content Analysis

Content analysis

Global features

Local features

Keypoint-based

Dense sampling patch-based

Segmentation-based

Color

Edge

Texture

SIFT

SIFT variants

FT-based Harris corner

Single-scale

Multiscale

Theme models
Context Analysis

• Determine location through GPS information

• Pros: Can facilitate recognition

• Cons: Not works well when indoor
Classification

• Identifying which category the captured landmark belongs to

• Discriminative classification
  • perform well in the presence of background clutter, view-point change

• Generative classification
  • deal with missing data
Limitation of mobile devices

- Low processing power
- Limited storage capacity
- Real-time requirement
Integrate Context and Content Analysis

• Location recognition system using mobile devices
• Snap2Tell
• Photo-to-Search system