Image Processing Techniques For Video Content Extraction

A
SEMINAR REPORT

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Submitted By
Patil Sonali S.

Under the Guidance of
Mr. H. D. Patil

DEPARTMENT OF COMPUTER ENGINEERING
S.S.V.P.S.’s B.S. DEORE COLLEGE OF ENGINEERING, DHULE.
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Introduction

- Basis of Video and Image Processing
Background

• Why Content Based Extraction needed?
Common Image Processing techniques

- Dithering
- Erosion
- Dilation
- Opening
- Closing
- Filtering
- Segmentation
- Object Recognition
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Basis of Video Processing

- Content of Digital Video
  Shot Detection
  Key Picture Selection
  Feature Generation
  Object Extraction
Current Research about Video Indexing and Retrieval

- Video Parsing
  - Shot Detection in video parsing
  - Key Picture Selection in video parsing
  - Feature Generation in video parsing
Current Research about Video Indexing and Retrieval

- Video Indexing and Retrieval
  - Description
  - Examples of some image processing systems

- Object Recognition and Motion Tracking

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Basic Requirements

Video Data Modeling

Application \(\xrightarrow{\text{Requires}}\) Information Model

Domain Specific Information to Extract

First Stage in Video Data Adaptation: Data Modeling
Basic Requirements

Video indexing
- Need of video indexing
  - High level indexing
  - Low level indexing
  - Domain specific indexing

Video data Management
Image Processing Techniques For Video Content Extraction

- Toolkit overview
- Temporal segmentation tools
- Cut detection
- Gradual transition detection
  - Twin-Comparison algorithm
  - Edge-Comparison algorithm
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Image Processing Techniques For Video Content Extraction

- Camera operation detection
  - X-ray based method
- Lighting conditions characterization
- Scene segmentation
  - Region-based segmentation
  - Motion-based segmentation
  - Scene and object detection
  - Caption extraction
- Edge detection

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Application

• Videocel applications
  □ Video browser
  □ WeatherDigest
  □ News analysis
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Application

- COBRA Model

Video sequences

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Application

- COBRA Model

Video shots
Application

• COBRA Model

Principal color detection

- Detected player
Conclusion
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THANK YOU

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