

Artificial Intelligence

Semantic Analysis of real world images

- Gaurav Arya
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Reference paper

- Chuan-Yu Chang ,
- Hung-Jen Wang ,
- Chi-Fang Li

published in the year 2009

- Link :

<http://www.sciencedirect.com/science/article/pii/S0957417409003066>

Earlier.....

- Conventionally ,systems represent an image via a set of feature attributes such as color,texture,shape etc.these features are stored in database with image.

The retrieval was performed by matching the feature attributes.

However, users doesn't think in low level features.For example , Show me the images of sunrise from the database...

Approach.....



Source:

<http://www.sciencedirect.com/science/article/pii/S0957417409003066>

J-seg Algorithm

- B.S.Manjunath
- Yining Deng
- Hyundoo Shin

Reference Link:

[202.197.191.206:8080/44/course/chap18/source/
99CVPRSeg.pdf](http://202.197.191.206:8080/44/course/chap18/source/99CVPRSeg.pdf)

J-segmentation



- Source:

Database link:

202.197.191.206:8080/44/course/chap18/source/99CVPRSeg.pdf

J-segmentation



- Source :
same database

J-seg code

- Vision Research Lab

- Link:

<http://vision.ece.ucsb.edu/segmentation/jseg/>

Feature Extraction

- Color feature

HSV color space

H: Hue

S : Saturation

V : Value

- Texture Analysis

- Edge Direction histogram

Low level features , which form a feature vector of each object region, color, texture and shape are extracted from each semantic category. Feature Vector consists of 64 color, 20 textures , 24 shapes and thus a total of 108 to represent an individual object.

Dimensionality reduction

Original Paper have PCA as dimensionality reduction and we are doing *both PCA and ICA as Dimensionality Reduction Techniques.*

Classifier

- Support Vector Machine(SVM).

We 've used SVM , a non-probabilistic binary linear classifier to classify the images....

Our Progress so far

- Able to segment the image
- Able to extract the color and texture features
- Able to apply pca on image
- Got code for SVM

Results

