Automatic image annotation

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1. Introduction

Need for image retrivel

- lower prices for image acquisition devices
- increased storage capacity

- huge amount of image

problem of locating the desired images in reasonable

solution

Request :keyword /sentence   Flower

image base

automatic annotation   1

annotated image base   2
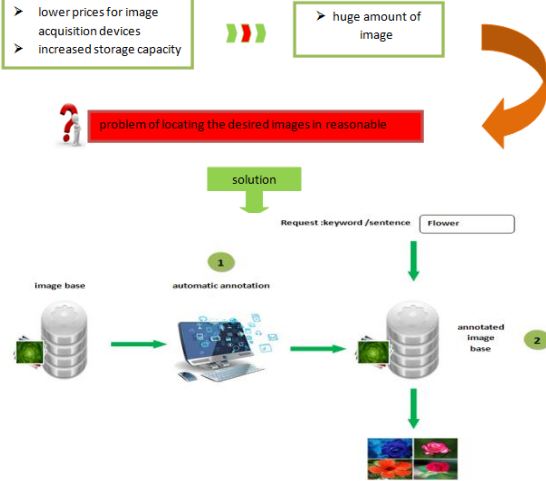
Need for automatic image annotation

Image without annotation   Application   Image with annotation

(Flower)

Manual annotation ❌
Slow
Cost
Tired

Automatic annotation ✅
Fast
Cheap
Easy
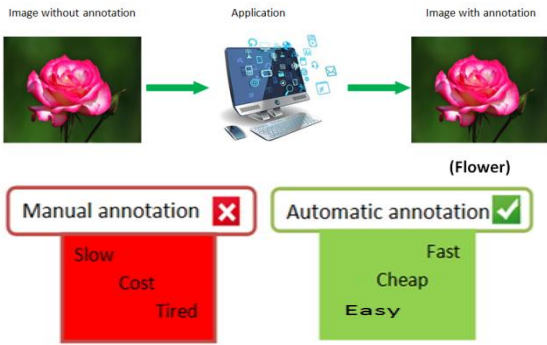
Problematique

How to automatically annotate the images?

2. methodology

features extraction

	Feature1	feature2	feature4
Img1	23	45	10
Img2	65	43	22
Img3	16	25	53
Img4	44	30	62

principal component analysis

clusterng

Classification model

- KNN ,SVM,NB ,other stratege……….

$P_{SVM}(X \mid C1) = W_{11} * P(X \mid C_{11}) + W_{12} * P(X \mid C_{12}) + W_{13} * P(X \mid C_{13})$

$P_{SVM}(X \mid C2) = W_{21} * P(X \mid C_{21}) + W_{22} * P(X \mid C_{22})$

$P_{SVM}(X \mid C3) = W_{31} * P(X \mid C_{31}) + W_{32} * P(X \mid C_{32})$

$P_{SVM}(X \mid C4) = W_{41} * P(X \mid C_{41}) + W_{42} * P(X \mid C_{42}) + W_{43} * P(X \mid C_{43})$

$P_{SVM}(X \mid C5) = W_{51} * P(X \mid C_{51}) + W_{52} * P(X \mid C_{52})$

For annotate image : we select the first three concepts having obtained the highest scores

3. Experimentation

features extraction

means

mr	mg	mb
66.7687	33.2885	25.2975
63.1855	32.1387	24.7723

standard deviation

sdr	sdg	sdb
66.7687	33.2885	25.2975
63.1855	32.1387	24.7723

K means

Cluster1   Cluster2   Cluster3

4. Representative simples from our dataset