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Mining and Clustering the Feature Similarities of Images on Smart Phone

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Abstract-With the fame of visual sensor on smart phone devices, (i.e. camera) it becomes a habit for many people to capture photos everyday and everywhere. This led to the rapid developing of more personal images and becomes a nuisance to the users in storing and organizing them, which had not been used before. Luckily, cloud storage provided a comprehensive solution at the right moment, and it facilitates the synchronization and sharing of images acquired. However, organizing this bulk number of personal images is still a tedious and difficult task. Common needs in photo organization may involve tagging, destroying replicated or same images, and collecting photos into albums. In our proposed system, we target to provide a features similarity images, face detection and recognition, avoid redundancy on smart mobile application which makes use of existing sensors and related technologies to help users to manage replicate or same images more effectively. By sharpening the power of cloud computing for SSIM algorithm, our system significantly reduce the time spent on managing photos in a neat and simple way which reduce user stress and increase user experience.

Keywords- Photo organization, Image similarity, Cloud storage, Mobile application, Redundancy avoidance.

I. INTRODUCTION

In our daily life, we are storing bulk number of photos. In this approach, we face different nuisance on storing and organising photos. For this problem, we found out a solution that is being carried out by location analysis, image analysis, face detection and recognition and also avoid redundancy. By these techniques, we easily storing and organizing the photos. We implement all techniques in android platform. It is very helpful in today world.

II. RELATED WORKS

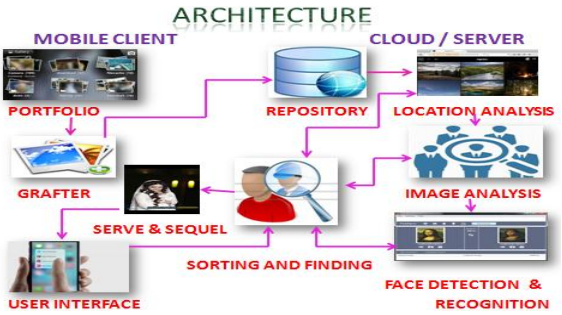
The structural similarity index (SSIM) is a method for predicting the perceived quality of digital television and cinematics pictures, as well as other kinds of digital images and videos. SSIM is used for measuring the similarity between the two images. The SSIM index is a full reference metric. In other words, the measurement or prediction of image quality is based on an initial uncompressed or distortion-free images reference.

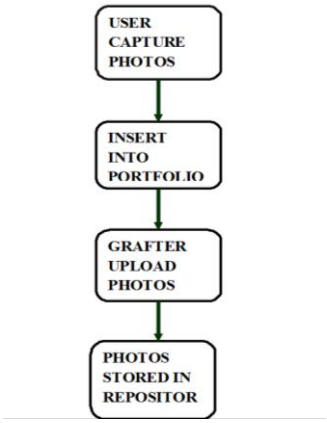
III. SYSTEM MODULES

Grafter phase
User interface
Operations
Location Analysis
Image Analysis,
Face detection and recognition

IV. GRAFTER PHASE

User capture the photos and those photos are inserted into portfolio. Grafter upload the images into repository for future retrieval.





V. USER INTERFACE

User can easily choose searching the images in a number of ways from the top menu bar. From the drop-down menu ,users can select to search by location , image and face.

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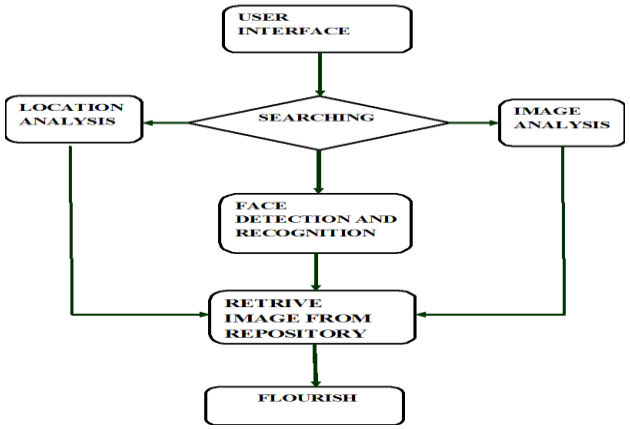
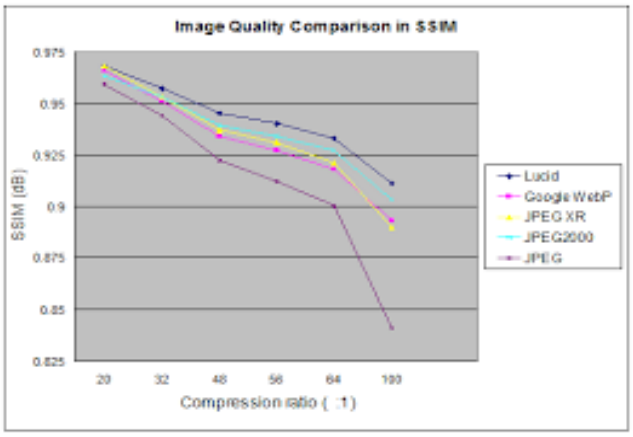
VI. OPERATION

User can select any of the choices from the menu bar. Based on their choices images can be retrieved from the repository and flourish to user.

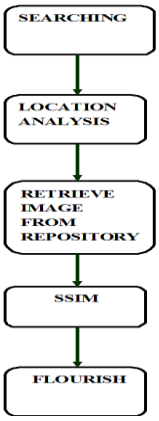





```
1. procedure SSIM
2.    T = T_hi
3.    x = initial state
4.    while (T > T_lo) {
5.      repeat M times {
6.        choose random neighbor y ∈ N_x
7.        if (E(x) ≤ E(y)) then
8.          x = y
9.        else
10.         choose random z ∈ (0,1)
11.         if (z < (e^{-E(y)/RT}/N_x) / (e^{-E(x)/RT}/N_y)) then x = y
12.     }
13.     T = T * 0.9
14.   }
15.   return x
```

VII. LOCATION ANALYSIS

Photos captured on mobile devices are likely to contain geographical tagging information. With the use of SSIM algorithm, photos acquired at the same place or near locations will be grouped in a cluster.

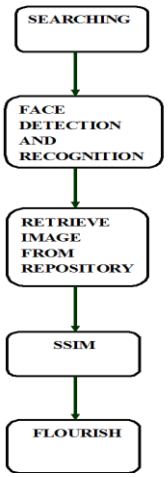


VIII. IMAGE ANALYSIS

User can select the image analysis from menu and retrieve the images from repository. By using, SSIM algorithm flourish the similar group photos to user.

IX. FACE DETECTION AND RECOGNITION:

User can select the face detection and recognition choice and retrieve the images from repository. By using, SSIM algorithm flourish the similar photos to user.



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X. CONCLUSION

We have demonstrate the use of existing technologies in organizing the daily expending photo collection. By introducing various sorting and searching capabilities, users can reorganize or seek their photos based on the needs. This relieves the tedious and painful manual album creation. Our current prototype focusing on the use of geographical analysis, image similarity analysis and face recognition to facilitate these processes. By leveraging the computation power of cloud, our system enables the use of mobile devices alone in managing user's own photo collection. In future, we are going to investigate the possibility of machine learning to provide customized and personalized photo organizing features.

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Profile

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