High-speed download cost-effective version control compression on cloud

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ABSTRACT

Traditional techniques for image retrieval are not supported for the ever-expansive image database. These downsides can be removed by utilizing contents of the image for image retrieval. This sort of image retrieval is known as Cross Batch Redundancy Detection (CBRD). BEES is combinedly work with CBRD is focused on the visual aspects like shape, colour and texture. The Density- Bandwidth Energy Efficient Sharing (BEES) is a stand out amongst the most commonly feature detector and descriptors which is utilized as a part of the majority of the vision programming. We focus mainly in texture, colour, shape, size-based image matching with superior accuracy. These features comprise texture, colour, shape and region. It is a trending research area and researchers have developed many techniques to use these features for accurate retrieval of required images from the databases. In this we present a literature survey of the Cross Batch Redundancy Detection (CBRD) techniques based on Texture, Color, Shape and Region. We also review some of the futuristic tools developed on CBRD.

Keywords: SSIM - Structural Similarity Metric, VIF - Visual Information Fidelity, HVS - Human Visual System, NSS - Natural Scene Statistics, CBRD - Cross Batch Redundancy Detection, MSE - Mean-Squared Error, FSRISA - Feature-Based Sparse Representation For Image Similarity Assessment, PSNR - Peak signal-to-Matching Ratio, GUI - graphical user interface, CBIR - Content-Based Image Retrieval, IDE - Integrated Development Environment

1. INTRODUCTION

Image processing includes changing the characteristics of an image by either improve its pictorial information for human interpretation or render it more suitable for autonomous machine viewpoint. The digital image processing, which include using a computer to change the character of a digital image. The digital image defines as a two-dimensional function, f (a, b), where a and b are spatial (plane) coordinates, and the amplitude of f at any pair of coordinates (a, b) is called the intensity or Gray level of the image at that point. When a, b, and the amplitude values of f are all finite, discrete quantities. The field of digital image processing refers to processing digital images by means of a digital computer. Note a digital image is collection of a finite number of elements, each of which has a specific location and value and the elements are suggest to as picture elements, image elements, pels, and pixels. Pixel is the term most commonly used to denote the elements of a digital image.

2. SCOPE OF PROJECT

In this project, we address the current restrictions Traditional techniques for image retrieval are not supported for the ever-expansive image database. These downsides can be removed by utilizing contents of the image for image retrieval. This sort of image retrieval is known as Cross Batch Redundancy Detection (CBRD). BEES is combinedly works with CBRD is targets around the visual features like shape, colour and texture. The Density- Bandwidth Energy Efficient Sharing (BEES) is huge extend between the most locally feature detector and descriptors which is utilized as a part of the majority of the vision programming. We focus texture, colour, shape, size, string based image matching with superior accuracy. These features include Texture, Colour, Shape and Region. It is a trending research area and researchers have developed several techniques to use these features for precise retrieval of required images from the databases. In this we present a literature survey of the Cross Batch Redundancy Detection (CBRD) techniques based on Texture, Colour, Shape and Region. We also review some of the futuristic tools developed for CBRD

3. PROJECT OBJECTIVE
In this context, many solutions were proposed in the literature to image retrieval using traditional ways. Our project objective is to propose a better method of image retrieval using BEES technique with CBRD to work on color, texture, shape, for matching with better accuracy when upload on cloud server and compressed using our proposed algorithm.

4. RELATED WORKS

- **QUALITY-BASED SPARSE REPRESENTATION FOR IMAGE SIMILARITY ASSESSMENT.**[1] Li-Wei Kang et.al, has presented that vital goal of image similarity assessment is to construct algorithms automatically and evaluate similarity in a compatible manner with human evaluation using Mean-squared Error (MSE) or Peak Signal-to-Matching ratio (PSMR). The MSE possesses the very satisfying properties of convexity, symmetry and capability. The visual fidelity of the two distorted images is drastically different. The connection between MSE/PSNR and human testing of standard are not sufficient enough for most applications. Assessment of image similarity is essentially important to all kind of multimedia applications. The aim of similarity assessment is to automatically judge the similarities among images in a generally compatibility manner. In this paper, we convert the image similarity assessment problem as an information fidelity difficulty. Most exactly, we present a quality-based method to measure the information that is present in a reference image and quantifying value of information can be extracted from a test image to judge the similarity between the two images. Here, we uproot the feature points and their descriptors from an image, followed by learning the basis for the descriptors in order to judge the information present in this image. Then, we develop the difficulties of the image similarity assessment in terms of sparse representation. To determine the suitability of the proposed feature-based sparse representation for image similarity assessment (FSRISA) method, we implement FSRISA to some of some of popular applications, mainly image copy detection, retrieval, and recognition by properly developing them to sparse representation problems.[1]

- **A TEXT RETRIEVAL APPROACH TO OBJECT MATCHING IN VIDEOS.**[2] Sivic J and Zisserman A et.al, has presented. In this paper Image Quality Assessment algorithms are used for grasp the similarity with a ‘reference image’ or ‘perfect’ image. The image information measure that calculates the information that is present in the reference image and also calculates required amount of this reference information can be extracted from the distorted image. By adding together these two quantities, visual information fidelity measure is highly suggested for image quality assessment. The Human Visual System (HVS) and Natural scene statistics (NSS) specially focus on judging the similarity between the reference image and its distorted image version. The advanced methods like Structural Similarity Index (SSIM), Visual Information Fidelity (VIF) can withstand slightly the geometric variations. The VIF approach is better than a HVS basis approach and also performs well in single-distortion and also in cross-distortion situations.[2]

- **CONTENT-BASED IMAGE COPY DETECTION.**[3] C. Kim, et.al, has presented. In C.kim research paper the image matching and recognition, Bandwidth Energy Efficient Sharing features (SIFT) are derived from a set of reference images and stored in database. A new image is matched by specifically comparing each characteristic from the new image to this previous database and finding candidate matching features based on Euclidean distance of their feature vectors using fast nearest-Neighbor algorithms that can perform this computation quickly against large databases. The important descriptors are highly peculiar, which allows a single feature to find its appropriate match with good probability in a huge database of features.

To estimate the similarity between two images using their SIFT features, the most appropriate scheme is to perform specific matching by treating each image as a set of key points and performing direct KeyPoint-set matching. The similarity between the two images is based on the number of matched key points, between the two sets of key points, especially, for the BoW representation-based method, the similarity between SIFT features can be measured by matching their relevant visual words through histogram matching. Generally, the computational complexity of the direct KeyPoint matching method is higher than that of the BoW-based method. Nonetheless, the solutions of the direct KeyPoint matching methods are usually more genuine than those of the BoW-based method suffered from quantization loss[3].

- **DISTINCTIVE IMAGE FEATURES FROM SCALE-IN Variant KEYPOINTS.**[4] Lowe D. G et.al., In his paper feature-based sparse representation for image similarity assessment (FSRISA) is proposed. SIFT is adopted as the representative feature detector in his framework. To crisply represent SIFT feature of an image, they propose construction of the basis (dictionary), includes of the prototype SIFT atoms via dictionary learning that forms the feature, known as "dictionary feature," of the image. To assess the similarity between two images based on their dictionary features, we propose formulating the problem as a sparse representation problem, where we implement sparse coding and calculate the reconstruction error for each SIFT descriptor of a test image. Then, by conducting voting poll, we can define a similarity value (matching score) between the two images. We also apply FSRISA to three multimedia applications image copy detection, retrieval, and recognition, by properly developing them to their corresponding sparse representation.[4]

5. EXISTING SYSTEM

This is the most stereotypical form of text search on the Web. all search engines do their text query and retrieval using keywords. The keywords-based searches they always provide results from blogs or other discussion boards. The user cannot have a gratification with these results due to absence of trusts on blogs etc. high recall rate and low precision. In early search engine that provided enact to search terms. User intention identification plays a vital role in the intelligently well-formed search engine. The similarity assessment is primarily important to most of multimedia information processing systems and applications such as compression, restoration, enhancement and copy detection etc. The image similarity assessment is to layout algorithms for repeated and objective testing of similarity in a stable manner with individual human interpretation. The Peak signal-to-Matching ratio (PSNR), Human visual system (HVS)and Natural Scene Statistics (NSS) are requiring to measure the quality of an image tested with its original version, especially for some image restoration applications. The existing methods mainly focus on evaluating the similarities between a reference image and its distorted variation versions, such as decompressed and brightness/contrast-enhanced versions. Image Quality of a test image is highly related to the virtual information present in the image and that the information can be calculated to measure the similarity between the test image and its reference image.

- **DISADVANTAGES:**
  - Loss of Global scaling.
• Pre-established fixed weights are acquired to fuse the 
distances of various low-level visual characteristics.
• Loss of adaptive weights for query images to combine the 
distances of different low-level visual characteristics.
• It is acquired by Bing Image Search.
• For our new approaches, two different ways of computing 
semantic signatures are compared.
• Not Visual Query-specific visual semantic space using 
Reciprocal Hash Maps. For an image, a single semantic 
signature is appraised from one SVM classifier trained by 
merging all types of visual characteristics.

6. PROBLEM FORMULATION
• It exhibits all of the descriptors of an image via sparse 
representation and judges the similarity between two images 
using sparse coding technique.
• The main advantage is, a feature descriptor is sparsely 
exhibited in terms of a Dictionary Score or transferred as a 
direct combination of Dictionary Score atoms, so as to attain 
productive feature representation and accurate image 
similarity assessment.
• Best Results.
• High accuracy.
• High performance in search of related image reranking.

7. PROPOSED SYSTEM
The proposed system Content-Based Image Retrieval (CBRD) 
uses BEES algorithm the perceptible contents of an image such 
as colour, shape, texture, and distance layout to exhibit and 
implicate the image. Dynamic research in CBRD is regulated 
towards the development of approaches for analysing, 
interpreting cataloguing and indexing image databases. Inclusion 
to their development, attempts are also being made to determine 
the performance of image retrieval systems. The feature of 
response is heavily dependent on the possibility of the approach 
used to generate feature vectors and similarity measure for 
comparison of features. In this paper we proposed an algorithm 
which assimilate the supremacy of many other algorithms to 
improve the precision and performance of retrieval. The 
precision of colour histogram-based matching can be improved 
implementing Colour Coherence Vector (CCV) for consecutive 
refinement. The speed of shape-based retrieval can be improved 
by considering rough shape rather than the accurate shape. 
Inclusion to this a combination of colour and shape-based 
retrieval is also involving to enhance the precision of the result.

ADVANTAGES:
• It exhibits all of the descriptors of an image via sparse 
representation and judges the similarity between two images 
via sparse coding technique.
• The main advantage is, a feature descriptor is sparsely 
exhibited in terms of a Dictionary Score or transferred as a 
direct combination of Dictionary Score atoms, so as to attain 
productive feature representation and precise image 
similarity assessment.
• Best Results.
• High accuracy.
• High performance in search of related image re-ranking.

8. REQUIREMENT ANALYSIS
The software requirement specification is produced at the end of 
the analysis task. The function and performance distributed to 
software as part of system engineering are advanced by 
establishing a complete information report as functional 
personification, a representation of system behaviour, an 
indication of performance requirements and design constraints, 
actual validation criteria.

FEATURES OF JAVA
• Java platform has two peripherals:
  • The Java Virtual Machine (Java VM)
  • The Java Application Programming Interface (Java API)
• The Java API is a huge collection of pre-made software 
components that gives various useful capabilities like 
graphical user interface (GUI) widgets. The Java API is 
grouped into libraries (packages) of related components.
• The following figure depicts a Java program, such as an 
application or applet, that's running on the Java platform. the 
Java API and Virtual Machine insulates the Java program from 
hardware dependencies as given below:

As a platform-independent environment, Java can be a little 
slower than authentic code. However, smart compilers, fine-
tuned interpreters, and efficient byte code compilers can bring 
Java's performance close to that of authentic code without 
damaging portability

FACTORY METHODS:
The InetAddress class has no constructors. To create an 
InetAddress object. Factory methods are exactly a protocol 
whereby static methods in a class return an occurrence of that 
class. it is done in behalf of overloading a constructor with 
different parameter lists when having specific method names 
makes the results much crystal clear. Three InetAddress factory 
methods that are commonly used:
1. Static InetAddress getLocalHost () throws 
UnknownHostException
2. Static InetAddress getByName (String hostName) throws 
UnknownHostException
3. Static InetAddress [] getByName (String hostName) throws 
UnknownHostException

The getLocalHost () method directly returns the InetAddress 
object that exhibits the local host. The getByName () method 
returns an InetAddress for a host name given to it. If these 
methods are unable to solve the host name, they leave an 
UnknownHostException.

On the internet, it is habitual for a single name to be used to 
exhibit several machines. In the world of web servers, this is one 
way to supply few degree of measuring. The getByName ( ) 
factory method returns an array of InetAddresses that exemplify 
all of the addresses that a specific name resolves to. It will also 
leave an UnknownHostException if it can’t resolve the name to 
at least one address. Java 2, version 1.4 also involves the factory 
method getByAddress ( ), which takes an IP address and returns 
an InetAddress object. Either an IPv4 or an IPv6 address can be 
utilized.

INSTANCE METHODS:
The InetAddress class also has few different methods, which can 
be applied on the objects returned by the methods just had a 
representation. some of the most widely used.

  Boolean equals (Object other) -Returns true if this
object has the same Internet address as other.

1. byte[ ] getAddress () - Returns a byte array that represents the object’s Internet address in network byte order.
2. String getHostName () - Returns a string that represents the host name associated with the InetAddress object.
3. String getHostAddress () - Returns a string that represents the host address associated with the InetAddress object.
4. boolean isMulticastAddress () - Returns true if this Internet address is a multicast address. Otherwise, it returns false.
5. String toString () - Returns a string that lists the host name and the IP address for convenience.

NET BEANS

- NetBeans is a consolidated development environment for Java.
- NetBeans conceives applications to be advanced from a set of modular software components known as modules.
- NetBeans supports several operating systems such as windows, mac, Linux and solaris.
- The Java Development Kit is an enactment of either one of the Java Platform, Standard Edition, Java Platform or Enterprise Edition, or Java Platform or Micro Edition platforms published by Oracle Corporation in the form of a binary product aimed at Java developers on Solaris, Linux, macOS or Windows.

TCP/IP CLIENT SOCKETS:
TCP/IP sockets are used to enact genuine, duplex, uninterrupted, end to end and channel-based connections between hosts on the Internet. A socket can be used to connect Java’s I/O system to other programs that may inhabit either on the local machine or on any other machine on the Internet. There are two types of TCP sockets in Java. One is for servers, and the another is for clients. The Server Socket class is created to be a “listener,” which waits for clients to connect before doing anything. The Socket class is created to connect to server sockets and initiate protocol exchanges. The creation of a Socket object absolute finds a connection between the client and server. There are no methods or constructors that perfectly expose the details of finding that connection. Here are two constructors used to create client sockets:

Socket (String hostname, int port) - constructs a socket connecting the local host to the named host and port; can throw an UnknownHostException or anIOException.

Socket (InetAddress ipAddress, int port) - Creates a socket using a pre-existing InetAddress object and a port; can throw an IOException.

A socket can be examined at any time for the address and port information associated with it, by use of the following methods:

1. InetAddress getInetAddress () - Returns the InetAddress associated with the Socket object.
2. int getPort () - Returns the remote port to which this Socket object is connected.
3. int getLocalPort () - Returns the local port to which this Socket object is connected.

Once the Socket object has been established, it can also be inspecting to gain access to the input and output streams included with it. Each of these methods can leave an IOException if the sockets have been contradicted by a loss of connection on the Net.

- InputStream getInputStream () - Returns the InputStream associated with the invoking socket.
- OutputStream getOutputStream () - Returns the OutputStream associated with the invoking socket.

TCP/IP SERVER SOCKETS:
Java has a various socket class that must be used for construct server applications. The ServerSocket class is used to construct servers that listen for either local or remote client programs to connect to them on established ports. ServerSockets are quite different form normal Sockets. When the user establishes a Server Socket, it will register itself with the system as having an approach in client connections.

1. ServerSocket(int port) - establishes server socket on the specified port with a queue length of 50.
2. ServerSocket(int port, int maxQueue) - establishes a server socket on the specified port with a maximum queue length of maxQueue.
3. ServerSocket(int port, int maxQueue, InetAddress localAddress)-establishes a server socket on the specified port with a maximum queue length of maxQueue. On a multihomed host, localAddress specifies the IP address to which this socket binds.
4. ServerSocket has a method known as accept () - which is a restricting call that will wait for a client to start communications, and then return with a normal Socket that is then used for communication with the client.

URL:
The Web is a roomy collection of higher-Caliber protocols and file formats, all consolidated in a web browser. One of the most essential aspects of the Web is that Tim Berners-Lee devised a scaleble way to locate all of the resources of the Net. The Uniform Resource Locator (URL) is used to name anything and everything reliably.

The URL contribute a reasonably intelligible form to specifically identify or address information on the Internet. URLs are used everywhere; every browser uses them to identify data on the Web.

9. MODULES DISCRIPITION

IMAGE PREPROCESSING AND FEATURE EXTRACTION
- In the input module, the feature vector from the input image is extracted and that input image is stored in the image dataset.
- The feature vector of each image in the dataset is also stored in the dataset whereas in the second module i.e. query module, a query image is inputted.
- After that the extraction of its feature vector is done. During the third module i.e. in the process of retrieval, comparison is performed.
- The feature vector of the query image is compared with each vector stored in the dataset. The features which are widely used involve: texture, color, local shape and spatial information.
- There is very high demand for searching image datasets of ever-growing size, this is reason why CBRD is becoming very popular.

BEES FEATURE EXTRACTION FOR REFERENCE AND TEST IMAGES:

- BEES converts image data into interchangeable coordinates virtual to local features and generates huge numbers of features that compactly envelops the image over the maximum range of scales and locations.
• Shape is a vital visual feature and it is the fundamental feature used to delineate image content.
• Nevertheless, shape representation and description are an arduous task.
• It is due to when a 3-D real world object is protruded onto a 2-D image plane, one dimension of object information is vanished. As a result, the shape extracted from the image only partly represents the protruded object.
• To make the problem even more convoluted, shape is often contaminating with noise, defects, arbitrary distortion and occlusion. Also, it is anonymous what is predominant in shape.

IMAGE ANALYSIS:
• In this module that have two functions as below
  • Scale-space extrema detection
  • Searches over all scales and image locations.
• A difference-of-Gaussian function to identify potential interest points that are invariant to scale and orientation.
• Key point localization
  • A key point has been identified by correlating a pixel to its neighbors and is to carry out a comprehensive fit to the nearby data for location, scale, and ratio of key curvatures.
• The low contrast points or poorly localized along edges are eliminated by key point localization.

IMAGE RETRIEVAL:
• The key points are converted into a depiction that allows for significant levels of local shape distortion and alteration in illumination.
• The descriptor representation approach assessing the similarity between BEES feature descriptors can be measured by matching their corresponding image by color, shape, size, text, and texture and it will be displayed.
• Retrieval of shape
  • The programmed shape retrieval system depends on the automatic segmentations process to get rough information about the shape of an object.
  • It initiates by segregating the image into 5 classes based on their brightness.
  • Attributes of three types: Mass, Centroid and Dispersion for every class is manipulated and stored as the shape vector.
  • For retrieval the vectors of the query image and database images are correlated and the utmost matching images are short listed as results.

SIZE AND TEXTURE SIMILARITY MEASURE
• In this algorithm we put forward that matching is done on color by color premises. By analysing histograms, initially calculate the number of colors in both query image and database image.
• Then both the images are matched by seeing if the proportions of a specific color in both the images are relatable.
• The image which persuades most of the conditions is the best match.
• Retrieval result is not a single image but a list of images ranked by their similarities with the query image since CBRD is not based on identical matching.

If I is the database image and I’ is the query image, then the similarity measure is computed as follows.
1. Calculate histogram vector sI = [sI1, sI2, ...sIn] and ccv vector rI = [rI1, rI2, ...rIn] of the database images.
2. Calculate the vectors sI” and rI” for the query image also.
3. The Euclidean distance between two feature vectors can then be used as the similarity measurement:
4. If d ≤ τ (threshold) then the images match.
5. From all the matching images we display top 24 images as a result.

10. IMPLEMENTATION DETAILS

We present a bandwidth- and energy efficient image sharing system, known as BEES, for real-time scenario in disasters. BEES decreases not only the cross-batch redundant images but also in-batch redundant images in the source, and further leverages vague image sharing to trade the quality of computation outcomes in image-based redundancy elimination for exorbitant bandwidth and energy efficiency. Moreover, the energy-aware adaptive approaches are introduced in BEES to propound an objective and quantitative trade-off between computation quality and efficiency depended on the remaining energy. Immense experimental results explains that BEES decreases greater than 67.3% energy overhead, 77.4% bandwidth overhead, 70.4% average image uploading delay, and extends 84.3% battery lifetime, compared with the state-of-the-art work. Because of the bandwidth and energy constraints in disaster environments, we reduce the transmission of near-duplicate/similar images and upload the valuable and specific ones. However, we do not eliminate any near duplicate images which are still stored in smartphones without any loss of data. When the energy is enough and network is gained, the remaining images can be uploaded. On the other hand, saving energy for increasing the battery lifetime will encourage users not to upload redundant images.

11. TESTING

SYSTEM TESTING
System testing is the stage of enactment, which has goal at ensuring that the system works precisely and efficiently before live operation commences. Testing is important to the success of the system. System testing makes a logical assumption that if all the parts of the system are correct, the aim will be successfully achieved. The candidate system is subject to a variety of tests. A sequence of tests is performed for the proposed system before the system is ready for user acceptance testing.
The testing steps are:
- Unit testing
- Integration testing
- Validation testing
- Output testing
- User acceptance testing

UNIT TESTING
Unit testing cornerstone verification efforts on the least possible unit of software design, the module. This is also called as “module testing”. The modules are tested separately. This testing is carried out during programming stage itself. In this testing step, each module is found to be working satisfactorily as regard to the expected output from the module.

INTEGRATION TESTING
Data can be lost across an interface; one module can have an unfortunate effect on others; sub-functions when merged may not produce the desired major functions; integration testing is a systematic testing for constructing the program structure. While at the same time conducting to uncover errors associated within the interface? The goal is to take unit tested modules and to merge them and test it as a whole. Here correction is difficult because the vast expenses of the entire program complicate the isolation of causes. This is the integration-testing step; all the errors found are corrected for the next testing step.

VALIDATION TESTING
Verification testing runs the system in a simulated environment using simulated data. This simulated test is sometimes known as alpha testing. This simulated test is mainly looking for errors and monitors concerning end user and decisions design specifications that where specified in the earlier phases but not satisfied during construction.

Validation refers to the process of using software in a live environment in order to find errors. The feedback from the validation phase generally produces changes in the software to deal with errors and failures that are uncovered. Than a set of user sites is selected that puts the system in to use on a live basis. They are called beta tests.

The beta test suits use the system in day-to-day activities. They process live transactions and produce normal system output. The system is live in every sense of the word; except that the users are aware they are using a system that can fail. But the transactions that are entered and persons using the system are real. Validation may continue for several months. During the course of validating the system, failure may occur and the software will be changed. Continued use may produce additional failures and need for still more changes.

OUTPUT TESTING
After performing the validation, the next step is output testing of the proposed system, since no system could be useful if it does not produce the required output in the specified format. Asking the users about the format required by them tests the output generated or displayed by the system under consideration. Hence the output format is considered in two ways-one is on screen and another in printed format.

USER ACCEPTANCE TESTING
User acceptance of a system is the key factor for the success of any system. The system under consideration is tested for the user acceptance by constantly keeping in touch with the prospective system users at the time of developing and making changes whenever required. This is done in regard to the following point: An acceptance test has the objective of selling the user on the validity and reliability of the system .it verifies that the system’s procedures operate to system specifications and that the integrity of important data is maintained. Performance of an acceptance test is actually the user’s show. User motivation is very important for the successful performance of the system. After that a comprehensive test report is prepared. This report shows the system’s tolerance, Performance range, error rate and accuracy.

12. SYSTEM MAINTENANCE
The objectives of this maintenance work are to make sure that the system gets into work all time without any bug. Provision must be for environmental changes which may affect the computer or software system. This is called the maintenance of the system. Nowadays there is the rapid change in the software world. Due to this rapid change, the system should be capable of adapting these changes. In this project the process can be added without affecting other parts of the system.

Maintenance plays a vital role. The system is liable to accept any modification after its implementation. This system has been designed to favor all new changes. Doing this will not affect the system’s performance or its accuracy.

Maintenance is necessary to eliminate errors in the system during its working life and to tune the system to any variations in its working environment. It has been seen that there are always some errors found in the system that must be noted and corrected. It also means the review of the system from time to time. The review of the system is done for:
- Knowing the full capabilities of the system.
- Knowing the required changes or the additional requirements.
- Studying the performance.

TYPES OF MAINTENANCE:
Corrective maintenance
- Adaptive maintenance
- Perfective maintenance
- Preventive maintenance

CORRECTIVE MAINTENANCE
Changes made to a system to repair flows in its design coding or implementation. The design of the software will be changed. The corrective maintenance is applied to correct the errors that occur during that operation time. The user may enter invalid file type while submitting the information in the particular field, then the corrective maintenance will displays the error message to the user in order to rectify the error.

Maintenance is a major income source. Nevertheless, even today many organizations assign maintenance to unsupervised beginners, and less competent programmers.

The user’s problems are often caused by the individuals who developed the product, not the maintainer. The code itself may be badly written maintenance is despised by many software developers Unless good maintenance service is provided, the client will take future development business elsewhere. Maintenance is the most important phase of software production, the most difficult and most thankless.

ADAPTIVE MAINTENANCE:
It means changes made to system to evolve its functionalities to change business needs or technologies. If any modification in the modules the software will adopt those modifications. If the user
changes the server then the project will adapt those changes. The modification server work as the existing is performed.

PERFECTIVE MAINTENANCE:
Perfective maintenance means made to a system to add new features or improve performance. The perfective maintenance is done to take some perfect measures to maintain the special features. It means enhancing the performance or modifying the programs to respond to the users need or changing needs. This proposed system could be added with additional functionalities easily. In this project, if the user wants to improve the performance further then this software can be easily upgraded.

PREVENTIVE MAINTENANCE:
Preventive maintenance involves changes made to a system to reduce the changes of features system failure. The possible occurrence of error that might occur are forecasted and prevented with suitable preventive problems. If the user wants to improve the performance of any process then the new features can be added to the system for this project.

Data set categorization
We use the specific sample image set to evaluate the coverage, since each image in the image set is geo tagged to facilitate its mapping in the real map. Since the complete set of the sample image set is too huge, we select a subset as the test image set covering the area from 2.31 to 2.34 degrees east longitude and from 48.855 to 48.872 degrees north latitude. The test image set consists of 165,539 images which have 58,818 unique locations (i.e. longitudes and latitudes) in the map. The detailed location has 5,399 images. We equally divide the 165,539 images into 25 groups and respectively store them in 25 smartphones. The starting energy of all 25 smartphone batteries is max. 40 images are contemplated as a group in the smartphones. The 25 smartphones respectively upload an image group every 20 minutes. The servers add the features of the uploaded images into the index for redundancy detection once receiving the images from BEES clients. After the batteries of all the smartphones are died out of battery, we map all the images that the servers receive in the map depend on their geo tags. Using Direct Upload, the smartphones upload 49,437 images in total. The uploaded images have 23,399 unique locations in the map. Fig 2. Testing For Quality Compression

Performance of testing
For instance, two images taken in the same place at different times are near-duplicate, which apply that the conditions in the place haven’t changed during the period. However, without uploading near-duplicate images, BEES can still obtain the vital information applied by them, because of detecting similarity using image features. When a near-duplicate image in the server is spotted, BEES can efficiently get the information of the “no change”, i.e., the situations shown in the image have not significantly changed during the period. If a user insists on uploading his/her images no matter whether near-duplicate images exist, a knob being settable by the user in BEES allows the user to linearly upload images. The parameter that is the remaining energy in unchangeable, which is used to guide the trade-offs between computing accuracy and energy efficiency. It can also be set by the user through a knob. To increase battery lifetime, the user can always set Tbat to 0 even with the maximum battery energy.

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USER INTERFACE

13. CONCLUSION
In the BEES feature extraction, BEES converts image data into scale-invariant coordinates virtual to local features and generates large numbers of features that precisely cover the image over the maximum range of scales and locations. Thus, different redundancy ratios of uploaded images create different energy overheads. Therefore, we encapsulate the energy overheads when the uploaded images are at various redundancy ratios. The redundancy ratio is expounded as the ratio of the number of redundant images in the uploaded images to the total number of uploaded images. We select an image batch with 100 images from the disaster image set as the uploaded images and store the images in the smartphone. We set various cross-batch redundancy ratios 0%; 25%; 50%; and 75%, by enumerating and detaching the redundant images (same as the uploaded images) into the servers.

The low contrast points or poorly localized along edges are loosed by key point localization. A key point has been identified by correlating pixel to its neighbours and is to perform a condensed fit to the nearby data for location, scale, and ratio of key curvatures. To make the BEES feature more precise, the bag-of-words (BoW) representation method quantizes BEES descriptors by vector quantization technique into a sets of visual words based on a pre-defined visual vocabulary or vocabulary tree.

14. REFERENCES
[1] Li-Wei Kang, Member, IEEE, Chao-Yung Hsu, Hung-Wei


