



SOCIAL IMAGES SUMMERIZATION

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Abstract:--*In our proposed approach Geo-tagging concept is introduced. Geo-tagging gives scope for attaching location-specific information to the photograph that information is in the form of longitude and latitude coordinates. In this paper introducing a novel approach to create automatic visual summaries of Geo-tagged images that containing visual summery such as color, texture, user tags, description etc. With the help of visual summary and metadata of an image we represent the diverse and representative images of specific geographic area. In proposed system the input from user as searching a location based on input location the proposed system create a certain radius around the location with the help of random walk with restart RWR concept construction of the graph that builds the relation between each image node and extract the visual feature and metadata of an images after that introducing edge weight mechanism which calculates the similarities and dissimilarities between image nodes and represent the most diverse and representative images set. This is simple and effective approach that helps to user to decide whether he/she visit a particular location or not. This approach uses only Geo-coordinates for making visual summery so it gives advantage over human annotation.*

Keywords : Geo-tagging, Flickr, image clustering, graph-based models, Visual diversity, RWR, visual summarization of geographic areas.

1.Introduction:

There are millions of images are uploaded everyday on content sharing websites each image comes with the metadata such as user tags, description, comments and title so on. uploader of image is responsible for generating its metadata. In our proposed approach the automatic creation of visual summary of geographic area. Visual features are extracted from the its longitude and latitude coordinates so for this reason concept of Geo-tagging is introduced. Geo-tagging is the process of adding geographical information to the photograph known as Geo-tagged photograph this concept derived from GPS(Global Positioning System). For capturing Geotagged photograph device must have in built GPS there are various devices have this capability such as mobile, digital camera.

Geo-tagging allows user to know where that image is captured in world map that helps to user for decision making to discover the interesting destination. In the following fig.1 collection of various images from content sharing website images are CST Chhatrapati Shivaji Terminal, Gate way of India from Mumbai and SBPCOE,Indapur, Pune, India.

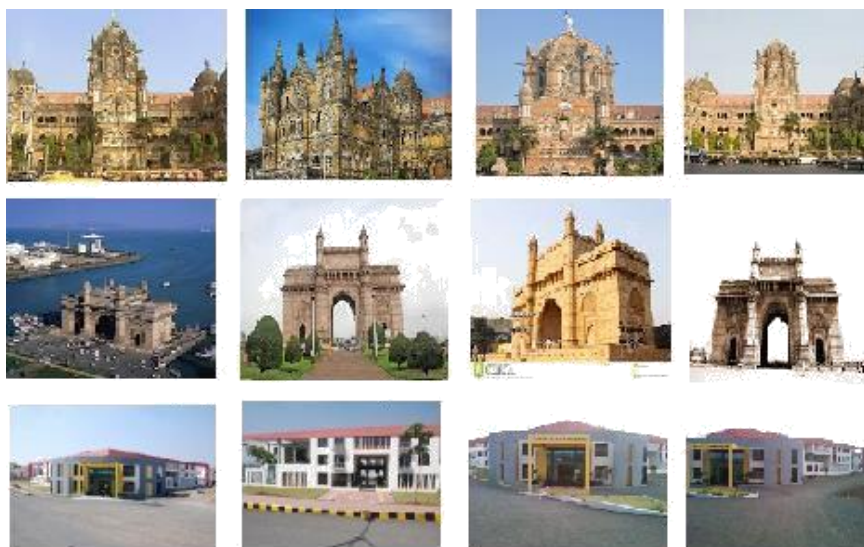


Fig1(a) Original Images in Geo-tagged Cluster



Fig1(b) Selection of Representative images

Fig.1 Illustrate automatic creation of visual summarization and metadata of each image and then construction of graph that helps for selection of diverse and representative image set.

In the past, people obtained suggestions from their friends or travel agencies. Such traditional sources are user-friendly but such suggestions cannot give any information about surrounding places which are less popular but sometimes valuable e.g. good hotel, shop, museum, temple etc. There are huge number of geo-tagged images from popular websites such as Flickr[9] and Google Earth. In our approach we search a limited number of representative images in a certain radius around the location that gather all the images and by introducing RWR over the graph that create relation between each image and extract visual feature and by edge weight mechanism it select the most representative and diverse image set.



1.2 Related Work:

Selection of diverse image search results are preferred [2], [3]. it was also found that the users are more sensitive to irrelevant than to duplicate images in the results list [4]. Therefore, increasing diversity without relevance deterioration poses a major challenge in the area [5]. State-of-the-art image search (set) diversification approaches can be divided into several categories according to whether only visual content, text associated with the images, automatically generated metadata, users' activity statistics or a combination of these resources is exploited. Perhaps the most intuitive approach to diversifying image search results is to perform image clustering in visual domain and then select a representative of each cluster to be presented to the user [7]. We anticipate, however, that in the use scenario envisioned in this paper the expected high diversity of the visual content in the images taken in an arbitrary geographical area will make the clustering task a challenging one, especially if this content is not dominated by distinct landmarks or other prevailing objects and scene aspects.

Following a different approach in[1] MMR gives benefit in document retrieval and in single document summarization and in [5] which measures the information content contributed by each image added to the results list, and the diversity score, which measures the topical coverage of the (final) image results list. The images tagged with scarce topics (topics that are rarely included in the image set) are favored over rich topics widely distributed throughout the collection.



Literature Review:

Paper	Publication years and Author	Problem	Solution	Future work
The Use of MMR, Diversity-Based Reranking for Reordering Documents and Producing Summaries	J. Carbonell and J. Goldstein,	In cases where there is a vast sea of potentially relevant documents, highly redundant with each other or containing partially or fully duplicative information that makes difficult to find information quickly	The Maximal Marginal Relevance (MMR) criterion strives to reduce redundancy while maintaining originality of information and query relevance in re-ranking retrieved documents and in selecting appropriate passages for text summarization. Mmr gives benefit in document retrieval and in single document summarization.	Future work extend as it was also found that the users are more sensitive to irrelevant than to duplicate images in the results list
Generating Diverse and Representative Image Search Results for Landmarks	L. S. Kennedy and M. Naaman , 2008	In particular images, the annotation and meta data provided by users is often inaccurate and noisy; photos are of varying quality; and the sheer volume alone makes content hard to browse and represent in a manner that improves rather than degrades as more photos are added.	A focus in this work is on landmarks and geographic elements. 1. use tags and location meta data to represent landmarks or geographic features. 2. apply visual analysis of the images associated with discovered landmarks to extract representative sets of images for each landmark 3. Using clustering of images generate the link between those images that contain the same visual objects. Then select the ranking image as representative images.	User query have the several aspect that not sufficiently discovered by top ranking images or query may produce the several result that makes difficult to build the collection of images



<p>Visual diversification of image search results</p>	<p>R. H. van Leuken, L. Garcia, X. Olivares, and R. Zwol, 2009</p>	<p>Each image have metadata i.e. Visual features to deliver visually diverse search result of image but due to lack of discriminative power of web search engine ranking reflects similarities but user is interested in only particular aspects of query</p>	<p>By using lightweight clustering techniques that comes with dynamic weighting function of 6 visual feature of image such as color, shape, texture with the help of algorithm as folding, maxmin and reciprocal election. So the web can capture discriminative aspects of retrieved resulting set of images and then select a representative image from each cluster.</p>	<p>Future scope is that user retrieve the images with the human annotators i.e user tags, title and other text content that are primary source for search</p>
<p>Diversifying Image Search with User Generated Content</p>	<p>Roelof van Zwol, Vanessa Murdock, Lluis Garcia Pueyo, and Georgina Ramirez</p>	<p>user-generated content is a primary source of information that can be extremely noisy so they are more effective for encouraging diverse result.</p>	<p>two ways to represent the images: with all meta-data, or with just the tag-sets. investigate the diversity of the search results by measuring the number of different senses present in the ranking at various cutoff points and by analyzing the distribution of topic senses in the ranked list. Our approach integrates the diversity of the search results directly into the retrieval strategy.</p>	<p>Future work is extends to research focus by studying diversity in image search results based on a multi-modal approach.</p>



2. Proposed System:

In the proposed approach input is geographic location shown in following block diagram then we select all images available on Flickr that are likely to have been taken in the surroundings of that location. From defined geo-coordinates, images and its associated metadata is extracted from flickr. Surrounding circular region is limited for the radius of 1 km from given geographic location.

A) Graph Construction:

Let consider $G(V,E)$ be the undirected graph. V is set of vertices and E is set of edges.

There are four types of nodes in our constructed graph G :

- Image nodes $I = \{i_1, i_2, \dots, i_N\}$: For each of N images of a given location an image node is added.
- Visual feature nodes $F = \{f_1, f_2, \dots, f_N\}$: For each image a visual feature node is added. Visual content of an image is described using local color moments extracted over a 5×5 regular rectangular grid and Gabor texture features.
- Text nodes $T = \{t_1, t_2, \dots, t_N\}$: For each image a text node is added. We index image title, keywords and description and represent them using a vector of TF-IDF weights.
- User nodes $U = \{u_1, u_2, \dots, u_N\}$: A user node is added for each of N_u image uploaders and commentators.

The final set of nodes V in our graph G is equal to:

$$V = I \cup F \cup T \cup U.$$

- B) Edge Weight Calculation: Graph $G(V,E)$ has two types of edge are first is attribute edge. Which is added in between an image and its attribute that helps to extract visual feature of an images such as text, visual feature and user. and second is similarity edge which shows the linking between same type of image node.

Adjacency matrix A of the graph is shown in Fig. 2. II , FT , FU , TU are matrices for which affinity between nodes is not known so these matrices are filled with zeros. FF , TT , UU are calculated using

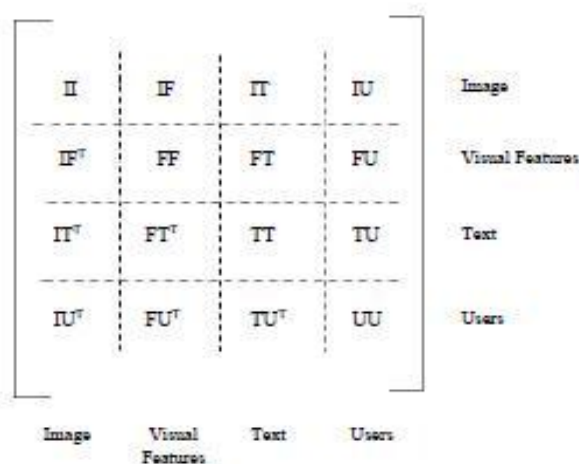


Fig.2 Adjacency Matrix A of graph G .



c) Selection of representative and diverse images:

For a selection of representative images Random walk with restarts (RWR) concept is used. Let R is random vector of dimension $R * 1$. A is the adjacency matrix of dimension $R * R$ of graph G . Random walker starts from any image node and repeats for all image nodes in the graph.

3. System Architecture:

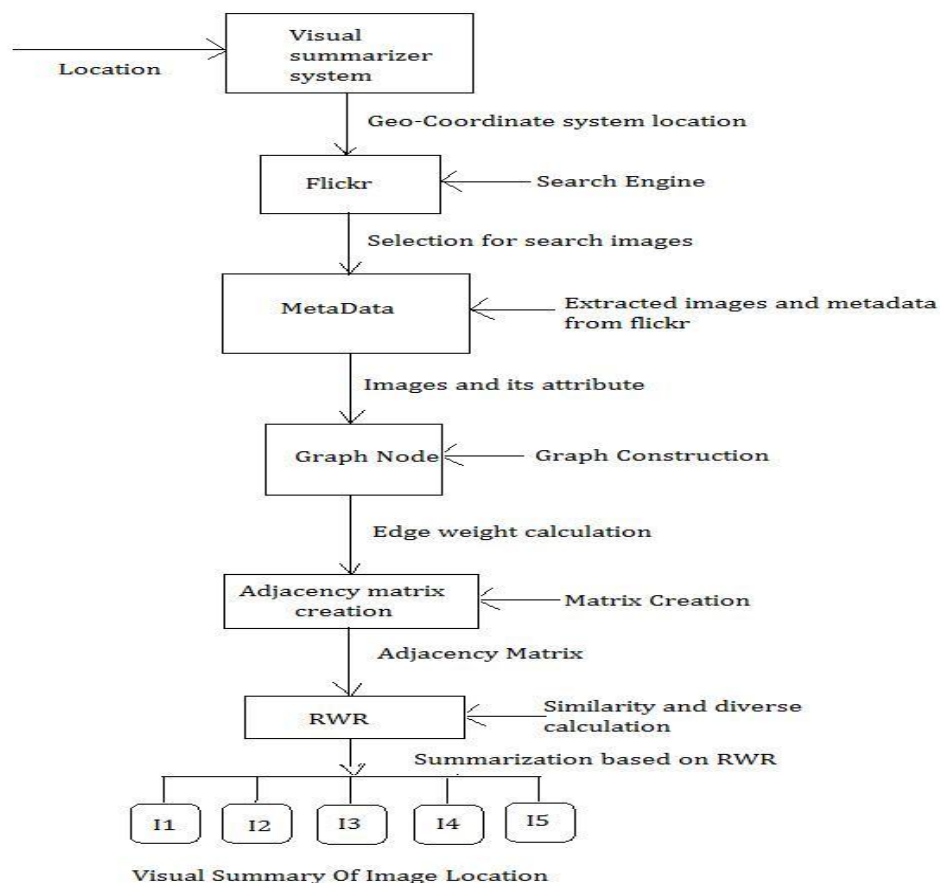


Fig 3. System Architecture



In above Fig.3 shows the visual location summarization. It contains the three main steps:

- 1) Collecting the initial image set and related metadata.
- 2) Multi-modal graph construction
- 3) Using the graph to filter the initial image set for representative and diverse images. The above Fig input into our visual summarization is a location, e.g., CST Chhatrapati Shivaji Terminal, Gate way of India from Mumbai and SBPCOE,Indapur, Pune, India which is specified by its geotag. We then select all images available on Flickr that are likely to have been taken in the surroundings of that location.

Block Diagram:

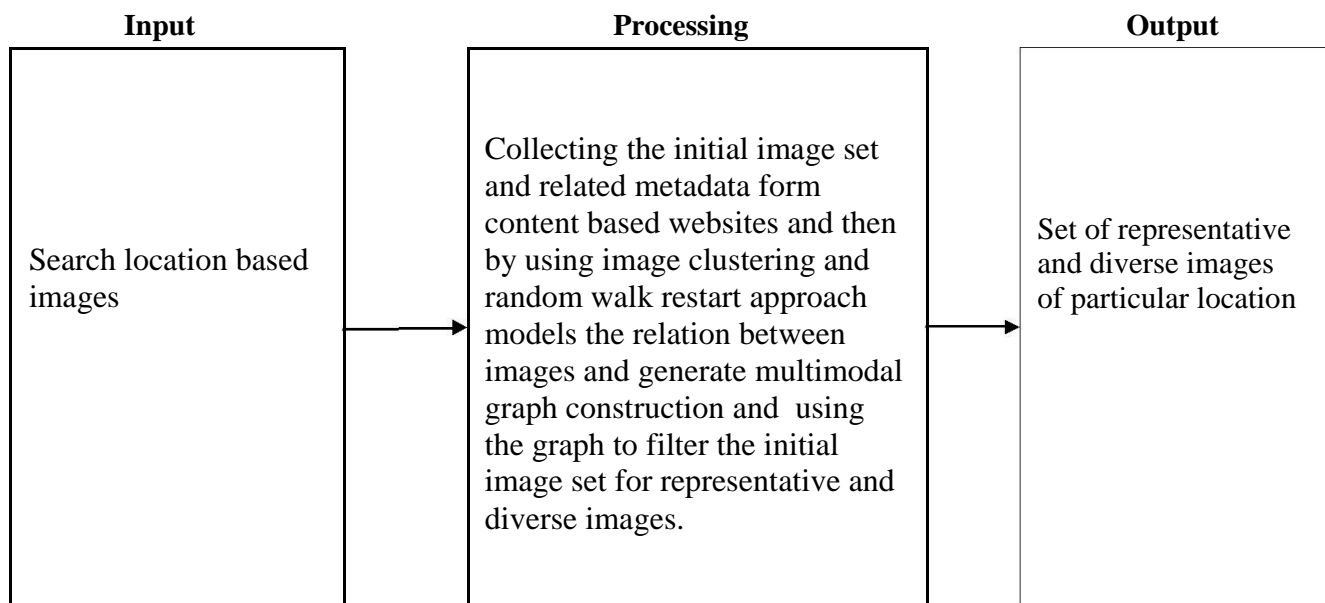


Fig4: Block diagram of proposed system.



4. Flowchart:

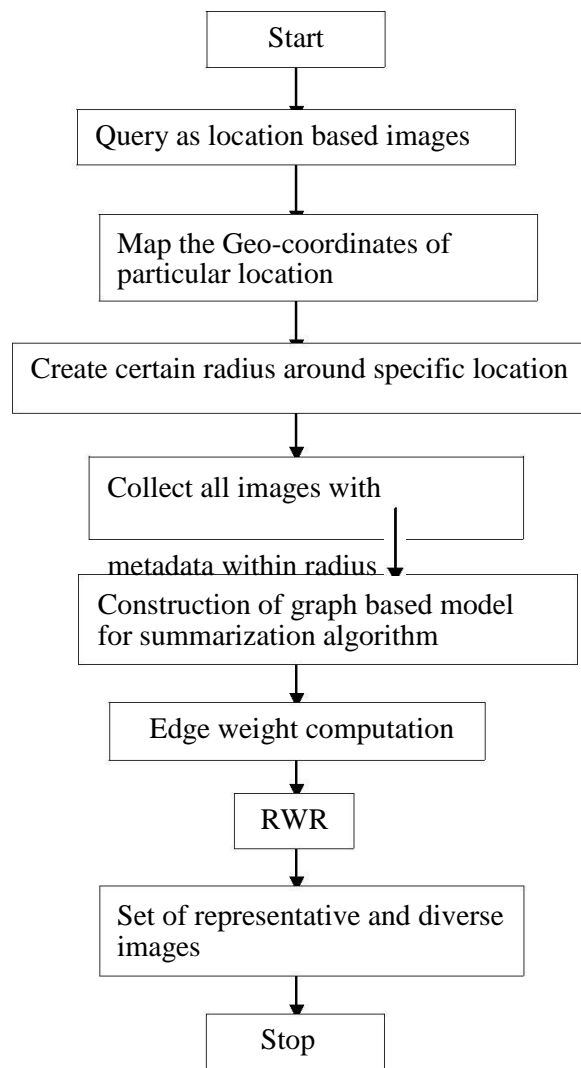


Fig5: Flowchart Of The System Architecture



5. Comparative Study:

Need to get directions when you are lost? Looking for a restaurant nearby? Our approach is motivated by the assumption that it may be easy to find places, a person deciding on whether to visit a particular location or not in this paper represent novel approach to represent set of diverse and representative images from content sharing websites. If we are going to search particular location on Google image search engine then we will find the number irrelevant set of images as well as we get the more redundant images for a same image so its increase the redundancy and bandwidth also the another disadvantage of Google makes a guess that the words are related to the image. So to overcome this problem our system provided following advantages as:

- It does not require input of human annotators.
- Reduce the bandwidth
- Selecting the most representative and diverse set of images.
- Improve time efficiency and effectiveness in interacting with typical interfaces for location recommendation and visualization.
- Such auto generated visual summary may increase interest of the people to visit unpopular nearby locations along with specified popular location.

Conclusion:

Image search engines on the Web still rely heavily on textual metadata, causing a lack of visual diversity in image search results. Still, diversity is a highly desired feature of search results, no less in image search than in other search applications. In this paper, we present a novel approach for automatic visual summarization of a geographic area that exploits user-contributed images and related explicit and implicit metadata collected from popular content-sharing websites. By means of this approach, we search for a limited number of representative but diverse images to represent the area within a certain radius around a specific location.

we propose in this paper a simple but effective scheme for selecting the most representative and diverse set of images based on the information derived from the graph. In this paper we present an approach to automatic creation of visual summaries of geographic areas using community-contributed images and related explicit and implicit metadata.



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