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AUTOMATIC IMAGE ANNOTATION USING SEMANTIC TEXT WITH PICTURE

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Abstract— Readers of business reports, newspapers, and social media face the challenge of interpreting large volumes of text in a short amount of time. Further, information loss can be experienced by people who have trouble with text-only documents, those using hand-held devices, and those who might not be able take in written material at a standard pace.1The trend for information sharing on the Internet is to offer details at just the right length. The emergence of the phrase "too long; didn't read" (TL;DR) shows the tendency of readers to look for short yet informative text where they can quickly determine its relevance to their interests. To tackle the challenge of interpreting text and to help breach the "information-assimilation wall" of cognitively deficient readers, a novel application has emerged that automatically adds pictures to text. This application is called automatic text annotation with pictures, concept picturing,or text picturing. The objective is to reduce a reader's cognitive information processingload1 by showing relevant pictures along with input text. A reader can quickly and easily decide if the text information deserves a closer look.

I. INTRODUCTION

The vast array of information available on the Internet makes it challenging to quickly determine the importance and relevance of content. Text picturing is a cognitive aid that can help with text understanding, as it helps users decide if the text deserves a closer look by showing relevant pictures along with the text. Readers of business reports, newspapers, and social media face the challenge of interpreting large volumes of text in a short amount of time. Further, information loss can be experienced by people who have trouble with text-only documents, those using hand-held devices, and those who might not be able take in written material at a standard pace. The trend for information sharing on the Internet is to offer details at just the right length. The emergence of the phrase "too long; didn't read" (TL;DR) shows the tendency of readers to look for short yet informative text where they can quickly determine its relevance to their interests. To tackle the challenge of interpreting text and to help breach the "information-assimilation wall" of cognitively deficient readers, a novel application has emerged that automatically adds pictures to text. This application is called automatic text annotation with pictures, concept picturing, or text picturing. The objective is to reduce a reader's cognitive information processing load by showing relevant pictures along with input text. A reader can quickly and easily decide if the text information deserves a closer look. Text Picturing For writers, bloggers, and editors, linking text with media content is crucial. Visual content helps readers follow the crux of a discussion or identify the core theme of an article. In efforts to organize and display helpful images, content managers, news writers, and user-interface designers perform page layout, assigning images to concepts. To improve image-retrieval accuracy, a number of issues must be addressed. For instance, journalists trying to illustrate a point are required to match a story's natural language to the available images.

To automatically annotate text with pictures, we need to mimic, at least at a high level, our human ability to extract and match concepts from multiple types of media. Annotating text with pictures can be described as multimedia adoption or generation for the purpose of improving information transfer through better alignment with cognitive processes. Assistive Communication Devices Pictures can be incorporated into assistive communication devices. Considering substituting pictures for text as a form of translation, a real-world application can be found in augmentative and alternative communication (AAC) tools. AAC tools are used by the cognitively impaired to decipher written expressions. These communication devices compensate for gaps in communication skills. Picture-based communication tools can provide a dynamic representation of concepts to reinforce a word-picture link. AAC devices using text to pictograph (specialized symbol) translation can assist individuals with complex communication challenges.

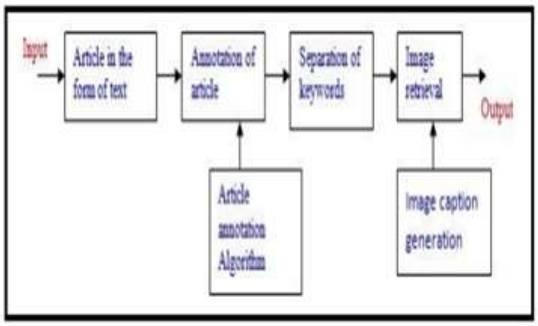

Fig.1: System Architecture

Interestingly, educators affirm that visuals are essential for effective learning in general.8 Adding Pictures to Text Advertising is more effective when ads contain a combination of words and pictures. We understand visual information more readily than text sometimes at least twice as fast. A text picturing system could be used to deliver near-real-time content to a handheld device; for example, in response to a sentiment expressed in a social media post. That sentiment could be brand-specific where the pictures could show an alternate brand. Images could, in turn, be linked to additional web pages promoting that alternate brand, with the hope of increased sales or customer retention.

II. LITERATURE SURVEY

Literature survey is the most important step in software development process. Before developing the tool it is necessary to determine the time factor, economy and company strength. Once these things are satisfied, ten next steps are to determine which operating system and language can be used for developing the tool. Once the programmers start building the tool the programmers need lot of external support. This support can be obtained from senior programmers, from book or from websites. Before building the system the above consideration are taken into account for developing the proposed system.

[1] G. Loy and A. Zelinsky, "Fast radial symmetry for detecting points of interest" IEEE Transaction on Pattern Analysis and Machine Intelligence, Vol. 25, NO.8, AUGUST 2014.

As sharing personal media online becomes easier and widely spread, new privacy concerns emerge – especially when the persistent nature of the media and associated context reveals details about the physical and social context in which the media items were created. In a first-of-its-kind study, we use context-aware camera phone devices to examine privacy decisions in mobile and online photo sharing. Through data analysis on a corpus of privacy decisions and associated context data from a real-world system, we identify relationships between location of photo capture and photo privacy settings. Our data analysis leads to further questions which we investigate through a set of interviews with 15 users. The interviews reveal common themes in privacy considerations: security, social disclosure, identity and convenience. Finally, we highlight several implications and opportunities for design of media sharing applications, including using past privacy patterns to prevent oversights and errors.

[2] J. Bonneau, J. Anderson, and L. Church, "Privacy suites: Shared privacy for social networks," in Proc. Symp. Usable Privacy Security, 2009.

Creating privacy controls for social networks that are both expressive and usable is a major challenge. Lack of user understanding of privacy settings can lead to unwanted disclosure of private information and, in some cases, to material harm. We propose a new paradigm which allows users to easily choose suites" of privacy settings which have been specified by friends or trusted experts, only modifying them if they wish. Given that most users currently stick with their default, operator-chosen settings, such a system could dramatically increase the privacy protection that most users experience with minimal time investment.

[3] J. Bonneau, J. Anderson, and G. Danezis, "Prying data out of a social network," in Proc. Int. Conf. Adv. Soc. Netw. Anal. Mining., 2009, pp.249–254.

Online photo albums have been prevalent in recent years and have resulted in more and more applications developed to provide convenient functionalities for photo sharing. In this project, we propose a system named SheepDog to automatically add photos into appropriate groups and recommend suitable tags for users on Flickr. We adopt concept detection to predict relevant concepts of a photo and probe into the issue about training data collection for concept classification. From the perspective of gathering training data by web searching, we introduce two mechanisms and investigate their performances of concept detection. Based on some existing information from Flickr, a ranking-based method is applied not only to obtain reliable training data, but also to provide reasonable group/tag recommendations for input photos. We evaluate this system with a rich set of photos and the results demonstrate the effectiveness of our work.

[4] H.-M. Chen, M.-H. Chang, P.-C. Chang, M.-C. Tien, W. H. Hsu, and J.-L. Wu, "Sheepdog: Group and tag recommendation for flickr photos by automatic search-based learning," in Proc. 16th ACM Int. Conf. Multimedia, 2008, pp. 737–740.

The social media site Flickr allows users to upload their photos, annotate them with tags, submit them to groups, and also to form social networks by

adding other users as contacts. Flickr offers multiple ways of browsing or searching it. One option is tag search, which returns all images tagged with a specific keyword. If the keyword is ambiguous, e.g., "beetle" could mean an insect or a car, tag search results will include many images that are not relevant to the sense the user had in mind when executing the query. We claim that users express their photography interests through the metadata they add in the form of contacts and image annotations. We show how to exploit this metadata to personalize search results for the user, thereby improving search performance. First, we show that we can significantly improve search precision by filtering tag search results by user's contacts or a larger social network that includes those contact's contacts. Secondly, we describe a probabilistic model that takes advantage of tag information to discover latent topics contained in the search results. The users' interests can similarly be described by the tags they used for annotating their images. The latent topics found by the model are then used to personalize search results by finding images on topics that are of interest to the user.

[5] M. D. Choudhury, H. Sundaram, Y.-R. Lin, A. John, and D. D. Seligmann, "Connecting content to community in social media via image content, user tags and user communication," in Proc. IEEE Int. Conf. Multimedia Expo, 2009, pp.1238–1241.

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[6] L. Church, J. Anderson, J. Bonneau, and F. Stajano, "Privacy stories: Confidence on privacy behaviors through end user programming," in Proc. 5th Symp. Usable Privacy Security, 2009.

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III. EXISTING SYSTEM

In image annotation one seeks to annotate an image with its contents. Unlike more traditional object recognition techniques. We are not interested in specifying the exact position of each object in the image. Thus, in image annotation, one would attach the label "car" to the image without explicitly specifying its location in the picture. For most retrieval tasks, it is sufficient to do annotation. Object detection systems usually seek to find a specific foreground object, for example, a car or a face. This is usually done by making separate training and test runs for each object. During training positive and negative examples of the particular object in question are presented. However, in the annotation scheme here background objects are also important and we have to handle a few thousand different object types and visual events at the same time. The model presented here learns all the annotation words at the same time. Object recognition and image annotation are both very challenging tasks.

DRAWBACKS OF EXISTING SYSTEM

- There is no Dynamic annotation for the images.
- The system is not generating text picturing.

IV. PROPOSED SYSTEM

In the proposed system, Picture matching requires the semantic match of input text concepts and output image concepts. The knowledge resolution parameter determines the number of pictures for each basic linguistic unit (word/sentence/paragraph). It is assumed that pictures are also represented by text (for example, a caption or a short paragraph) so that the matching exercise means matching input text to image description text. Image descriptions can come from four sources: URLs, surrounding text, user tags, and analysis of visual content. An example of matching for "John ate a red apple" would be a picture of a man (picture tags "man" and "human"), a picture of someone eating food (picture tags "person eating, "person," "hungry"), and a picture of an apple. Matching can be automated by

searching for images that have the largest number of terms in common with the input text. To improve results, external knowledge sources can provide related terms (semantic expansion). These additional terms usually improve the chance of a good match. There are additional matching measures based on more formal natural language processingtechniques.16 For instance, some approaches match terms by comparing the distribution of similar terms, and others use matching rules.

ADVANTAGES

- Effective Image annotation with no boundary text.
- Fast annotation which is dynamic and secure.

SYSTEM ARCHITECTURE

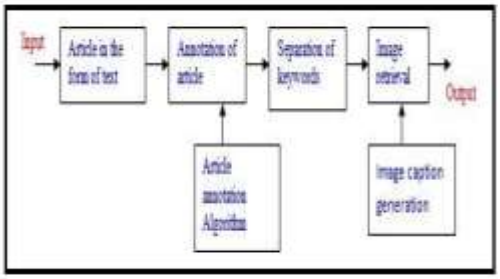


Fig.2: Cloud Centric Authentication Architecture

MODULES

Admin Web Server

In this module, the Admin has to login by using valid user name and password. After login successful he can do some operations such as Add images, View all images with its annotation, View all images ranking and its annotation, View all image details with annotation, View all image with its annotation by clicking on the images, List Users & authorize, View all images with reviews and ratings

End User

In this module, there are n numbers of users are present. User should register with group option before doing some operations. After registration successful he has to wait for admin to authorize him and after admin authorized him. He can login by using authorized user name and password. Login successful he will do some operations like View Own Details, Search for images based on contents and annotation keyword, View my search History. search images based key points of annotation and review the image.

Automatic image Annotation

Automatic image annotation aims to find a subset of keywords/ tags that describes the visual content of an image. It plays an important role in bridging the semantic gap between low-level features and high-level semantic content of images. Most automatic image annotation algorithms can be classified into three categories generative models that model the joint distribution between tags and visual features, discriminative models that view image annotation as a classification problem, and search based approaches. Below, we will briefly review approaches in each category. Both mixture models and topic models, two well known approaches in generative model, have been successfully applied to automatic image annotation. In a Gaussian mixture model is used to model the dependence between keywords and visual features.

SYSTEM DESIGN

UML DIAGRAMS

UML stands for Unified Modeling Language. UML is a standardized general-purpose modeling language in the field of object-oriented software engineering. The standard is managed, and was created by, the Object Management Group.

The goal is for UML to become a common language for creating models of object oriented computer software. In its current form UML is comprised of two major components: a Meta-model and a notation. In the future, some form of method or process may also be added to; or associated with, UML.

The Unified Modeling Language is a standard language for specifying, Visualization, Constructing and documenting the artifacts of software system, as well as for business modeling and other non-software systems.

The UML represents a collection of best engineering practices that have proven successful in the modeling of large and complex systems.

The UML is a very important part of developing objects oriented software and the software development process. The UML uses mostly graphical notations to express the design of software projects.

GOALS

The Primary goals in the design of the UML are as follows:

1. Provide users a ready-to-use, expressive visual modeling Language so that they can develop and exchange meaningful models.
2. Provide extendibility and specialization mechanisms to extend the core concepts.
3. Be independent of particular programming languages and development process.
4. Provide a formal basis for understanding the modeling language.
5. Encourage the growth of OO tools market.
6. Support higher level development concepts such as collaborations, frameworks, patterns and components.
7. Integrate best practices.

The development for the World Wide Web while making some things simpler has exacerbated these architectural problems.

- Class diagram
- Use case diagram
- Sequence diagram
- Activity diagram

CLASS DIAGRAM

In software engineering, a class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among the classes. It explains which class contains information.

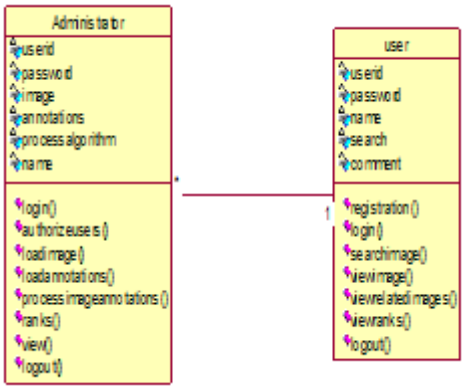


Fig.3: Class Diagram

USE CASE DIAGRAM

A use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases. The main purpose of a use case diagram is to show what system functions are performed for which actor. Roles of the actors in the system can be depicted.

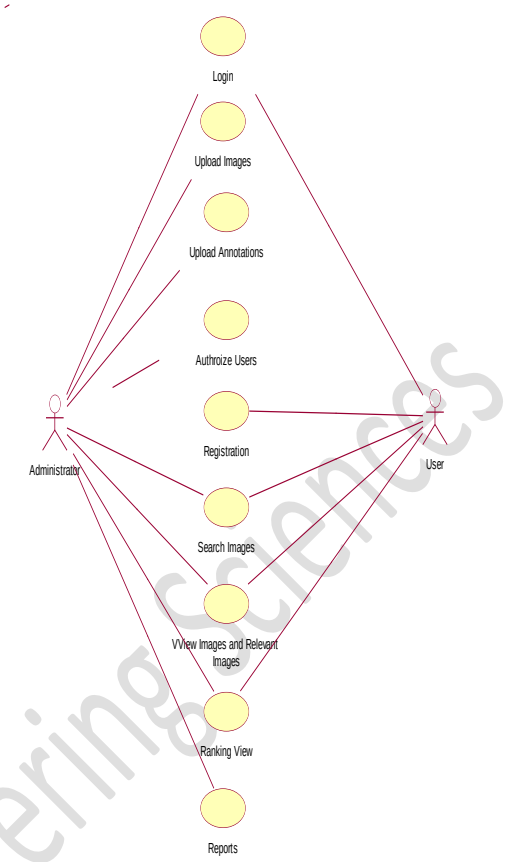


Fig.4: Use Case Diagram

SEQUENCE DIAGRAM

A sequence diagram in Unified Modeling Language (UML) is a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. Sequence diagrams are sometimes called event diagrams, event scenarios, and timing diagrams.

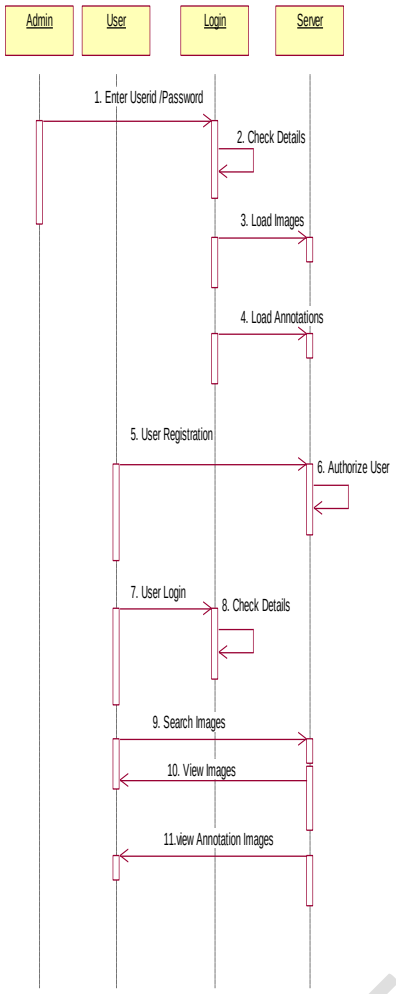


Fig.5: Sequence Diagram

ACTIVITY DIAGRAM

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the Unified Modeling Language, activity diagrams can be used to describe the business and operational step-by-step workflows of components in a system. An activity diagram shows the overall flow of control.

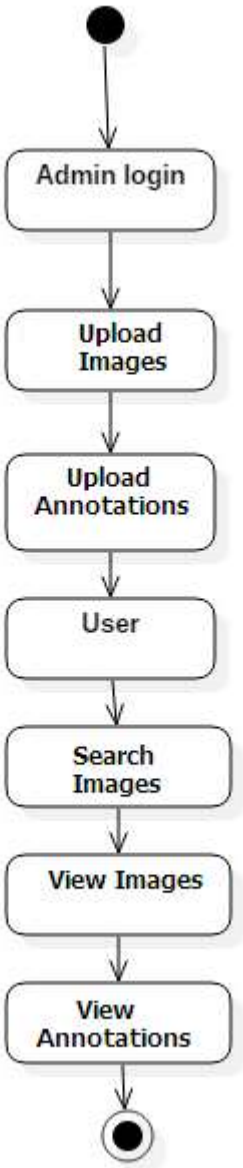


Fig.6: Activity Diagram

OUTPUTS

Screen 1: Home Page

Screen 2: Admin Login Page

Screen 3: Admin Menu Page

Screen 4: Upload Image Page

Screen 5: Delete Image Page

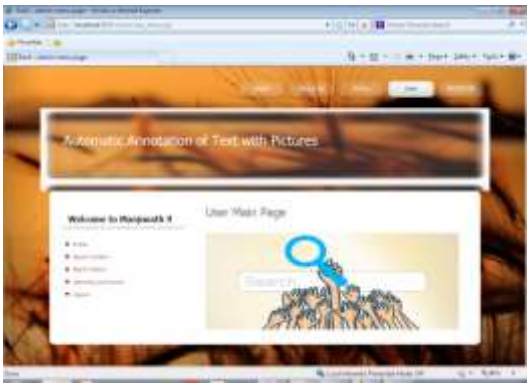
Screen 6: List of Images

Screen 7: Image with annotation

Screen 8:View all Users

Screen 9: Graph Showing ranking

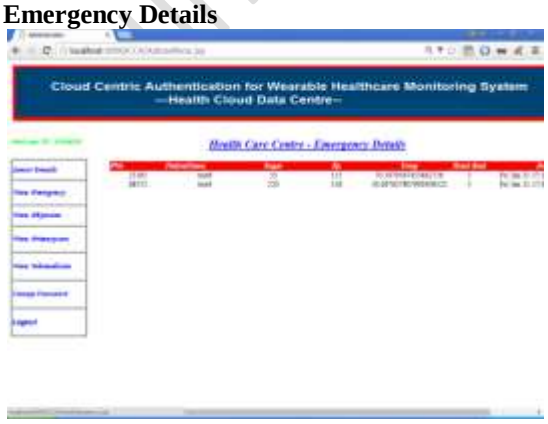
Screen 10: User Login



Screen 11: User Menu Page

Screen 12: User Search Operations

Emergency Details



Screen 13: Emergency Details of Patient

Screen 14: Search on Annotations

Screen 15: Search History

CONCLUSION

IT professionals are familiar with visual interfaces and how they can help user productivity. Text picturing applications similarly help users' understanding of textual content and can help productivity. Several applications can benefit from text picturing, including AAC tools, classroom material, visual summary of reports, advertising, news, and social media. Text picturing remains an active topic of research. There are many opportunities to realize its potential in real-world applications to help with text understanding. Finally, we would like to point out that a related dual problem to the one introduced in this article is the task of automatic image caption generation.

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