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FUNDAMENTAL VISUAL CONCEPT LEARNING FROM CORRELATED IMAGES AND TEXT ANNOTATION

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Abstract

Heterogeneous web media consists of many visual concepts, such as objects, scenes and activities, that cannot be semantically decomposed. The task of learning fundamental visual concepts (FVCs) plays an important role in automatically understanding the elements that compose all visual media, as well as in applications of retrieval, annotation, etc.In this project we try to apply annotations for all the images which are uploaded in the online web by taking neighboring concept distributing (NCD) attribute ,in which those which are having some similar difference will be added with same type of annotation and then they are tagged.

1. INTRODUCTION

THE worldwide web is full of images, videos, audio, and text, which are not only growing rapidly in terms of quantity but are also becoming increasingly rich in terms of content. Heterogeneous web data usually coexist in multimedia documents and use similar semantics to describe the same subject from different perspectives. The various modalities of documents may be complementary in terms of expressing the semantics of content.

For example, an image can vividly inspire imagination but incompletely describe a concept. In contrast, while text can accurately describe the details of a concept, it is not intuitive enough. Currently, many real-world Internet applications involve multi-modal data, such as cross media retrieval [1], [2], [3], [4], image tagging [5], multimedia searching [6] and multimedia caption generation [7]. Common to these applications, the relations between different modalities need to be considered and learned at the document level granularity under the supervision of labeled data.

In this work, we focus on a problem that is different from traditional cross-media learning problems. Suppose we have a set of multimedia documents, each including an image and a textual description in the form of keywords, sentences or paragraphs, as shown in Fig. 1. Each image generally consists of a few visual patches, each of which can be visually represented simply and has a single semantics; the correlated textual description consists of meaningful keywords, and each keyword can be considered as a concept label of the visual patches. In this work, we aim to learn the concept label of each visual patch under the supervision at the granularity of images and textual documents. As shown in Fig. 1(d), a set of visual patches with the same semantics and their corresponding concept label make up a fundamental visual concept, and the concepts compose the complex web data. It can be envisioned that, for a mass of correlated heterogeneous documents, computers can automatically learn the fundamental concepts that compose the data describing our world without any supervision at the granularity of the fundamental concepts. In each class, objects of different subclasses are both semantically and visually similar to each other [13]. This paper formulates the task of learning fundamental visual concepts from correlated images and text in the form of keywords and sentences and proposes an approach named neighboring concept distributing (NCD) to address this task. In this work, visual patches and text descriptions are represented based on deep networks and one-hot vectors, respectively. The NCD approach models all data using a concept graph, which considers the visual patches as nodes and generates inter image edges between visual patches belonging to different images and intra-image edges between visual patches in the same image.

The concept label is distributed from the images to the visual patches and propagated across the latter based on measurements over the concept graph, including fitness, distinctiveness, smoothness and sparseness. Based on the proposed approach, we can learn the fundamental visual concepts that compose multimedia documents from correlated images and text. In summary, our contributions are three-fold: (1) we introduce and formulate the problem of fundamental visual concept learning from correlated images and text, which is different from current learning problems such as MIML, image annotation and FGIC; (2) we present a neighboring concept distributing approach to this problem, which models he data as a concept graph, distributes concept labels from images to visual patches and propagates them across the patches over the concept graph; and (3) we analyze the learn ability of the proposed approach and find that, under some conditions, all concepts can be correctly learned with the probability $1 – \delta$ when the amount of data M is larger than $O(\ln 1/\delta)$, i.e., with an arbitrarily high probability as the amount of data increases.

The fundamental visual concepts achieved can be used in many applications including multimedia search, recommendation and annotation, without the expensive cost of labeling. The problem has several characteristics: 1) it does not need a pre trained concept detector or classifier for each concept; 2) it allows concepts to be continuously learned from increasingly complex data (e.g., from “image + keywords” to “image + paragraph”). Based on the above analysis, we consider that the task in this work has some differences from the following related problems: • Multi- instance multi label learning (MIML) [8], [9], [10]: MIML is a learning paradigm where each example is simultaneously represented by a bag of instances and associated with a set of class labels. Most MIML approaches aim to predict the labels of new bags instead of instances. • Image annotation: In general, the task of the image annotation is to predict multiple textual labels that describe the content or visual appearance of an unseen image [11]. In addition, a few studies focused on predicting the labels of the regions in images [12]. •

Fined-grained image classification (FGIC): FGIC usually involves classifying the subclasses of objects belonging to the same class.

In this proposed application we try we try to apply annotations for all the images which are uploaded in the online web by taking neighboring concept distributing (NCD) attribute ,in which those which are having some similar difference will be added with same type of annotation and then they are tagged.

2. 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 used for developing the tool. Once the programmers start building the tool, the programmers need lot of external support. This support obtained from senior programmers, from book or from websites. Before building the system the above consideration r taken into for developing the proposed system.

RELATED WORK

1) Security Analysis of Relationship-Based Access Control Policies AUTHORS: Amirreza Masoumzadeh

Relationship-based access control (ReBAC) policies can express intricate protection requirements in terms of relationships among users and resources (which can be modeled as a graph). Such policies are useful in domains beyond online social networks. However, given the updating graph of user and resources in a system and expressive conditions in access control policy rules, it can be very challenging for security administrators to envision what can (or cannot) happen as the protection system evolves. In this paper, we introduce the security analysis problem for this class of policies, where we seek to answer security queries about future states of the system graph and authorizations that are decided accordingly. Towards achieving this goal, we propose a state-transition model of a ReBAC protection system, called RePM. We discuss about formulation of security analysis queries in RePM and present our initial results for a limited version of this model.

2. Relationship-based Access Control for Online Social Networks: Beyond User- to-User Relationships

AUTHORS: Yuan Cheng, Jaehong Park and Ravi Sandhu

User-to-user (U2U) relationship-based access control has become the most prevalent approach for modeling access control in online social networks (OSNs), where authorization is typically made by tracking the existence of a U2U relationship of particular type and/or depth between the accessing user and the resource owner. However, today's OSN applications allow various user activities that cannot be controlled by using U2U relationships alone. In this paper, we develop a relationship-based access control model for OSNs that incorporates not only U2U relationships but also user-to-resource (U2R) and resource-toresource (R2R) relationships. Furthermore, while most access control proposals for OSNs only focus on controlling users' normal usage activities, our model also captures controls on users' administrative activities. Authorization policies are defined in terms of patterns of relationship paths on social graph and the hopcount limits of these path. The proposed policy specification language features hopcount skipping of resourcerelated relationships, allowing more flexibility and expressive power. We also provide simple specifications of conflict resolution policies to resolve possible conflicts among authorization policies.

3. EXISTING SYSTEM

In the existing system we try to use manual approach to identify the details about the image which is posted on the web. Here we can see a lot of information which contains some related images for that content and some are not related for the topic.We are unable to find out the information properly in the current days about the data which we see in online.

LIMITATION OF EXISTING SYSTEM

The following are the limitations that takes place in the existing system. They are as follows:

1)Existing system failed in retrieving the Images information with annotation.

2) All the existing systems try to use manual approach to check what is the description of the image.

3) There is no algorithm or method present which can give complete understanding about the images from that text.

4. PROPOSED SYSTEM

In this proposed application we try we try to apply annotations for all the images which are uploaded in the online web by taking neighboring concept distributing (NCD) attribute ,in which those which are having some similar difference will be added with same type of annotation and then they are tagged.

ADVANTAGES OF THE PROPOSED SYSTEM

1) The proposed system completely achieved the principle of retrieving the image information from the annotation.

2) Here we can get all the related images with common annotation so that we can reduce a lot of work.

3) The proposed system is very accurate in finding annotations or tags for the images which are posted in online.

4) The system is more effective in image annotation since it is using Fundamental visual concept.

5) The system is very effective since it is allowing heterogeneous media.

5. IMPLEMENTATION

5.1 ADMIN/ SERVER MODULE

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

5.2 USER MODULE

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 4.search images based key points of annotation and review the image.

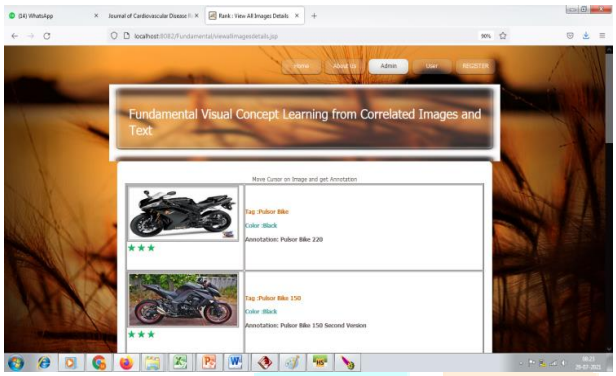
5.3 IMAGE ANNOTATION MODULE

In general, the task of the image annotation is to predict multiple textual labels that describe the content or visual appearance of an unseen image. In addition, few studies focused on predicting the labels of the regions in

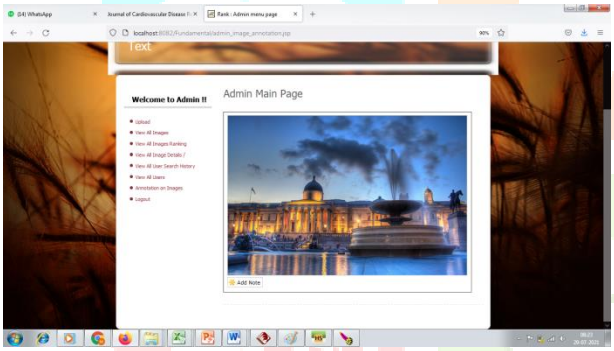
images.Here we try to annotate the images with corresponding names and then display the information about that product.

6. OUTPUT RESULTS

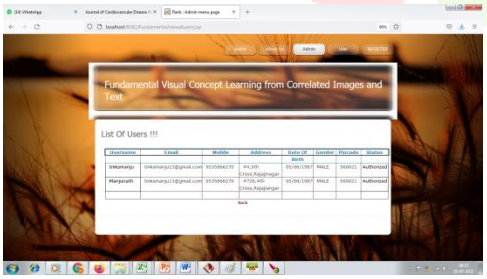
ADMIN CAN VIEW ALL IMAGE DETAILS



ADMIN CAN ANNOTATE THE NEW IMAGES

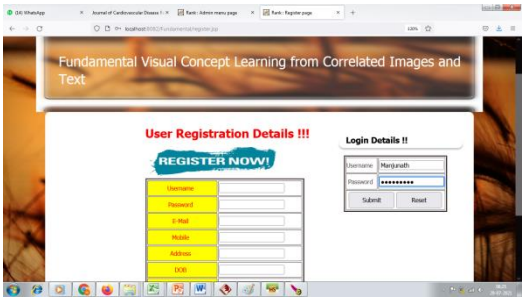


ADMIN CAN VIEW ALL USER DETAILS

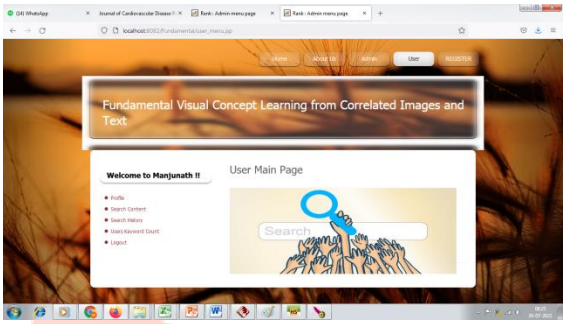


USER REGISTRATION

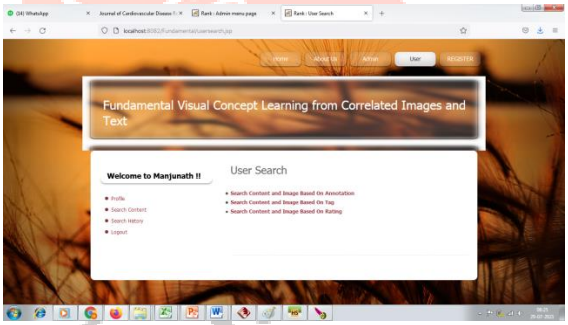
USER LOGIN



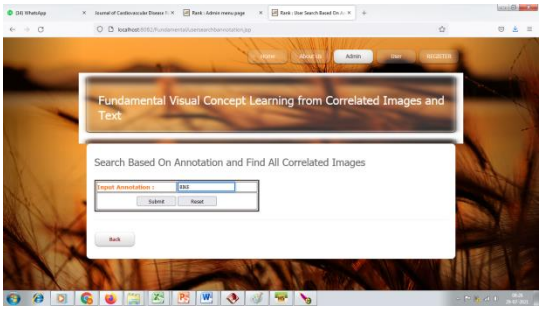
USER MAIN PAGE



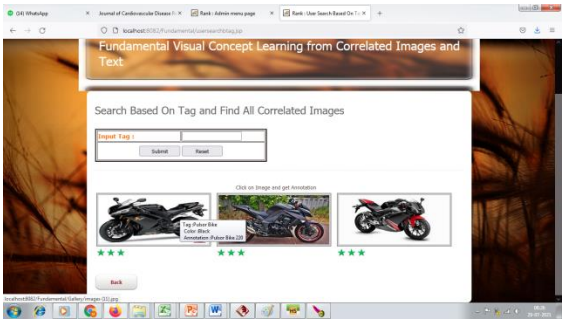
USER CAN SEARCH CONTENT



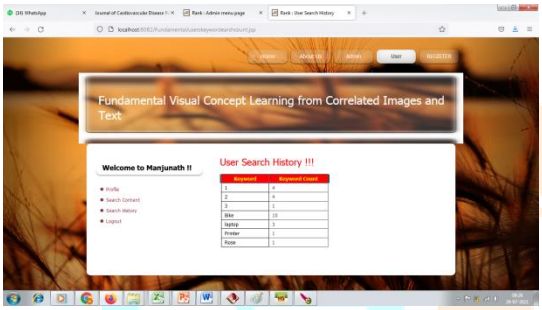
SEARCH BY KEYWORD



USER GET RESULT



USER KEYWORD COUNT



7. CONCLUSION

In this proposed work, we formulate the problem of fundamental visual concept learning from correlated images and text and propose an approach to this problem called neighboring concept distributing. The proposed NCD approach introduces the concept graph, which consists of two kinds of edges, i.e., intra image edges and inter-image edges, to model the relations between patches belonging to the same image and different images, respectively

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