

Extracting Web Facial Images for Quest-Based Face Annotation

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Abstract:

Auto face annotation is playing important role in many real-world knowledge management systems and multimedia information. Auto face annotation can be beneficial to many real world applications. Face annotation related to face detection and recognition Recently research interests in mining weakly-labeled facial images on the internet to resolve research challenge in computer vision and image understanding. This paper provides various techniques or methods that are used to annotating facial images. In this article, we have gone through the issues of duplicate human names and explore supervised/semi-supervised learning techniques to further enhance the label quality with affordable human manual refinement efforts.

INTRODUCTION:

Day by day the digital media devices are increasing so the different social media tools used for sharing photos. The large number of human facial images shared over the different social real world application some of this images are tagged properly but many of images are not tagged properly so the facial annotation are came. Auto face annotation" is important technique which automatically gives name of relevant person. This technique is more beneficial to different real world application for (e.g. facebook) which annotates photos uploaded by the users for managing online album and searches the photos.

Recently search base annotation are used for facial image annotation by mining the World Wide Web (WWW), where large number of weakly labeled facial Images are freely available. The search-based face annotation paradigm aims to tackle the automated face annotation task by exploiting content-based image retrieval (CBIR) techniques [2], [3] in mining number of weakly labeled facial images on the web. The main objective of search-based face annotation is to assign correct name labels to a given query facial image.

RELATED WORK:

Different studies are perform on face annotation in mining weakly labeled facial images which are present over internet in this human name are treated as input query and aim is to refine the text-based search results by achieving consist facial images

A .Clustering Algorithm with Possibility Model:

Berg et al. [4] presents the combination of a possibility model with a clustering algorithm. This combination is to present the relationship between the facial images and the names in their captions for the facial images and the detected names in the same document. The simply clustering method is used to captioned new images and automatically link name. For improving the performance clustering process are combine with possibility model .combining this two methods there are accurate labeled set of faces. The result of this work shows that by analyzing language carefully can produce much better clustering and also learn a natural language classifier to determine who is pictured from text alone. This method works on particular data set we further more improve for free text on webpage using simple image representation and context model.

B.Graph Based Approach:

Ozkan and Duygulu [5] proposed a graph-based model for finding the densest sub-graph as the most related result. Proposed a method to associate names and faces for querying people in large news photo collection In most cases the number of same faces of queried person will be large so the faces are more similar to each other. They proposed the graph based method to find the similar subset with possible set of faces with query person name. Similarity are represent by SIFT describers. Then apply a greedy graph algorithm. Guillaumin et al. [6] introduced a modification to incorporate the constraint that a face is only depicted once in an image.

There are two scenarios of naming persons in database for finding face of person and assigning name to all faces. The text based result is not greatly improved. To improve a recent graph based approach introduce the constraints when optimizing the objective function. generative models have

C. Query Expansion:

T. Mensink and J.J. Verbeek [8], by using ideas from query expansion the performance of name-based scheme can be further improved. In this paper they are interested to finding images of people on the web and more clearly labeled the new images. The text base initial results are not perfect. The performances are depending on the assumptions. To improve such poor performance proposed “query expansion”. They applied this idea on early proposed method on which filter the initial result set. Using Gaussian mixture modeling and logistic discriminant model. The query expansion is improving the performance in both of method. The research suggest the model learned from caption based supervision

D. Purify Web Facial images :

This aims to correct noisy web facial images for face recognition applications [9], [10]. These works are proposed as a simple preprocessing step in the whole system without adopting sophisticated techniques. T.L. Berg, A.C. Berg et al. [9] applied a modified k means clustering approach for cleaning up the noisy web facial images. Zhao et al. [10] propose system that can learn and recognize face by combining weakly labeled text, image and video. Consistency learning proposed to create face model for popular person. the text images on the web as a weak signal of relevance and learn consistent face model from large and noisy training sets. Effective and accurate face detection and tracking is applied.

Lastly key faces are selected by clustering to get compact and robust representation. The effectiveness is increased due to represent key face and removes duplicate key face. They used the unsupervised machine learning techniques and propose a graph-based label refinement algorithm to optimize the label quality over the whole retrieval database. Z. Wu, Q. Ke, J. Sun, and H.-Y. Shum [11] mainly addressed the face retrieval problem, by using local and global features which propose an effective image representation.

Future Work is to design a supervised learning algorithm to automate this process to further improve the visual word vocabulary for face. This system is highly scalable, and they plan by using a computer cluster to apply on a web-scale image database.

D. Face annotation in mining weakly labelled facial images on the web :

M. Guillaumin et al. [11] introduced a modification to incorporate the constraint that a face is only depicted once in an image. This work has two scenarios of naming persons in database for finding face of person and assigning name to all faces. The text based result is not more accurate. Graph based approach is improved by introducing the constraint, objective function generative models have previously been proposed to solve the multi-person naming task by comparing generative and graph based methods. The most significant graph based method is extended in future to multi-person naming.

M. Guillaumin et al. [11] proposed a method to iteratively update the assignment based on a minimum cost matching algorithm. In their follow-up work Guillaumin et al. [12], they further uses distance metric learning technique to enhance the annotation performance to gain lots of distinguish features in low dimension space. The retrieval based approach are applied with distance metric learning also various different techniques are implemented with these retrieval based or search based face annotation. A similarity search task is conducted, which is used to find a set of top-k images from a social or World Wide Web image database, and it obtains relevant images.

Module description:

1. content-based image search
2. Face annotation
3. Face annotation performance on database

1. Content-based image search:

Content-based image retrieval (CBIR), also known as query by image content (QBIC) and content-based visual information retrieval (CBVIR) is the application of computer vision techniques to the image retrieval problem, that is, the problem of searching for digital images in large databases.

2. Face annotation:

The classical image annotation approaches usually apply some existing object recognition techniques to train classification models from human-labeled training images or attempt to infer the correlation/probabilities between images and annotated keywords.

3.Face annotation performance on database:

This experiment aims to verify the annotation performance of the proposed SBFA framework over a larger retrieval database: "DB1000." As the test database is unchanged, the extra facial images in the retrieval database are definitely harmful to the nearest facial retrieval result for each query image. A similar result could also be observed where the mean average precision became smaller for a larger retrieval database.

APPLICATIONS:

Face annotation can be used in various applications fields are as follows

- Identity verification (electoral registration, passports, drivers' licenses, employee IDs)
- Criminal justice systems (forensics)
- Wild landmark face annotation,
- Online photo album management, and
- Social media sites like Facebook (In case of Facebook face annotation can be termed as "tagging".)

CONCLUSION:

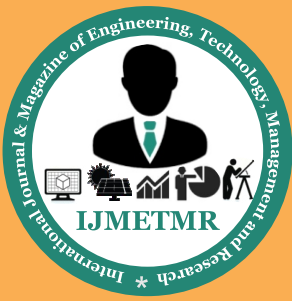
This paper presents an extensive survey on face annotation techniques for web facial images. Currently, many new approaches are proposed in the field of Auto Face Annotation. Many research issues have been highlighted and direction for future work has been suggested. Many open issues have been highlighted by the researchers such as dealing with auto face annotation on large scale databases by different technique future work will be on duplicate person name and learn different learning technique.

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