Available Online at www.ijcsmc.com

International Journal of Computer Science and Mobile Computing

A Monthly Journal of Computer Science and Information Technology

ISSN 2320–088X

IJCSMC, Vol. 3, Issue. 12, December 2014, pg.166 – 175

RESEARCH ARTICLE

Real-Time Automatic Web-Based Tool for Document Annotation

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Abstract:

A large number of organizations today produce and statement of part-owner of, in the wording details of their products services and actions. Such collections of, in the wording data have with in important amount of structured information which remains put under earth in the unstructured wording While information extraction algorithms help the extraction of structured relations they are often high in price and full of errors especially when operating on top of wording that does not have within any instances of the marked structured information. We present a fiction story that possibly taking place in addition move near that helps the stage of the structured metadata by making out documented materials that are likely to have within information of interest and this information is going to be coming after useful for questioning the knowledge-base. Our move near is dependent on the idea that humans are more likely to join the necessary metadata during work of art time if gave a word (to actor) by the connection or that it is much more comfortable for humans and or algorithms to make out the metadata when such information actually

has existence in the documented material instead of without experience causing users to put in forms with information that is not ready (to be used) in the documented material as a chief something given of this paper we present algorithms that make out structured properties that are likely to come into view as within the documented material by together putting to use the what is in of the wording and the question amount of work. Our testing put value shows that our move near produces higher results made a comparison to moves near that be dependent on only on the of, in the wording what is in or only on the question amount of work to make out properties of interest.

1 Introduction

There are many application domains where users make come into existence and part information for example news blogs scientific networks social networking groups or shocking event managers of a business networks current information having the same instruments like what is in managers of a business software e.g., Microsoft SharePoint let users to part documented materials and annotate tag them in an ad hoc way in the same way Google Base lets users to make statement of the sense of words properties for their ends or select from selected before templates. This note process can help coming after information discovery many note systems let only untyped keyword note for example a user may annotate a weather go to person in authority using a tag such as bad conditions group.

Note designs that use property value twos are generally more put feelings as they can have within more information than untyped moves near. In such gold frames the above information can be entered as StormCategory a nearby line of work in the direction of using more put feelings questions that with more power such notes is the undergo punishment as you go questioning secret design in dataspaces. In Dataspaces users make ready data united as complete thing small signs (of) at question time. The thing taken as certain in such systems is that the data starting points already have within structured information and the hard question is to match the question properties with the starting point properties

Many systems though do not even have the basic quality value note that would make an undergo punishment as yougo questioning possible notes that use property value twos have need of users to be more with a sense of right in their note efforts users should have knowledge of the close relation schema and field types to use they should also have knowledge of when to use each of these fields with schemas that often have tens or even hundreds of ready (to be used) fields to put in this work becomes complex and uncomfortable. This results in data place to come and go through users having nothing to do with such note powers even if the system lets users to based only on opinion annotate the data with such property value twos the users are often unwilling to act this work. The work not only has need of much attempt but it also has unclear usefulness for coming after searches in the future who is going to use a not based on rules unclear in a common schema quality sort for future searches. But even when using a preselected schema when there are tens of possible & unused quality fields that can be used which of these fields are going to be useful for looking for the knowledge-base in the future.

Such difficulties results in very basic notes if any at all that are often limited to simple keywords. Such simple notes make the analysis and questioning of the data uncomfortable users are often limited to level stretch of country keyword searches or have way in to very basic note fields such as coming to living day and owner of documented material.

In this paper we make an offer out and outers collaborative adjusting data having the same flat structure which is an annotate as youcreate base structure that helps fielded data note a key something given of our system is the straight to use of the question amount of work to straight to the note process in addition to putting questions to the what is in of the documented material. In other words we are being hard to put up with to prioritize the note of documented materials in the direction of producing quality values for properties that are often used by questioning users.

Example 1: Our being the reason for scenario is a shocking event managers of a business place, position given impulse to by the experience in building a business being unbroken stretch information network for shocking event situations in South Florida. During shocking events we have many users and organizations making public and consuming information. For example in a hurricane place, position nearby government agencies go to person in authority keep safe places damages in structures or to do with structure suggestions meteorological offices go to person in authority the position (in society) of the hurricane its position and one suggestions. Business owners make, be moving in the position (in society) and needs of their stores and personnel makes statement statement of part-owner their activities and look for full of danger needs. The information produced and destructed in this domain is forcefull and not able to say for certain and agencies have their own protocols and forms and sizes of having the same data e.g., the Miami Dade County straight-away help needed office puts into print hourly documented material reports. Further learning the schema from earlier shocking events is hard as new situations needs and requirements get up.

ZCZC MIATCPAT2 ALL
TTAA00 KNHC DDHHMM
BULLETIN
HURRICANE GUSTAV INTERMEDIATE ADVISORY
NUMBER 31A
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL
AL072008
600 AM CDT MON SEP 01 2008
EYE OF GUSTAV NEARING THE LOUISIANA
COAST...HURRICANE FORCE WINDS OVER PORTIONS
OF SOUTHEASTERN LOUISIANA... A HURRICANE
WARNING REMAINS IN EFFECT FROM JUST EAST
OF HIGH ISLAND TEXAS EASTWARD TO THE
MISSISSIPPI-ALABAMA BORDER...INCLUDING THE
CITY OF NEW ORLEANS AND LAKE
PONTCHARTRAIN.
PREPARATIONS TO PROTECT LIFE AND PROPERTY
SHOULD HAVE BEEN COMPLETED. A TROPICAL
STORM WARNING REMAINS IN EFFECT FROM
EAST OF THE MISSISSIPPI-ALABAMA BORDER TO
THE OCHLOCKONEE RIVER. GUSTAV IS MOVING
TOWARD THE NORTHWEST NEAR 16 MPH...26
KM/HR... ON THE FORECAST TRACK...THE CENTER
WILL CROSS THE LOUISIANA COAST BY MIDDAY
TODAY. MAXIMUM SUSTAINED WINDS ARE NEAR
115 MPH...185 M/HR...WITH HIGHER GUSTS. GUSTAV
IS A CATEGORY THREE HURRICANE ON THE
SAFFIRSIMPSON
SCALE.

(a) Example of an unstructured document

Storm Name = 'Gustav'
Storm Category = 3

Warnings = 'tropical storm'

(b) Desirable annotations for the document above

Q1: Storm Name = 'Gustav' AND Warnings = 'flood'
Q2: Storm Name = 'Gustav' AND Storm Category > 2
Q3: Document Type = 'advisory' AND Location = 'Louisiana'

AND Date FROM 08/31/2008 TO 09/30/2008

(c) Queries that can benefit from the annotations

Fig. 1. Sample Document and Annotations.

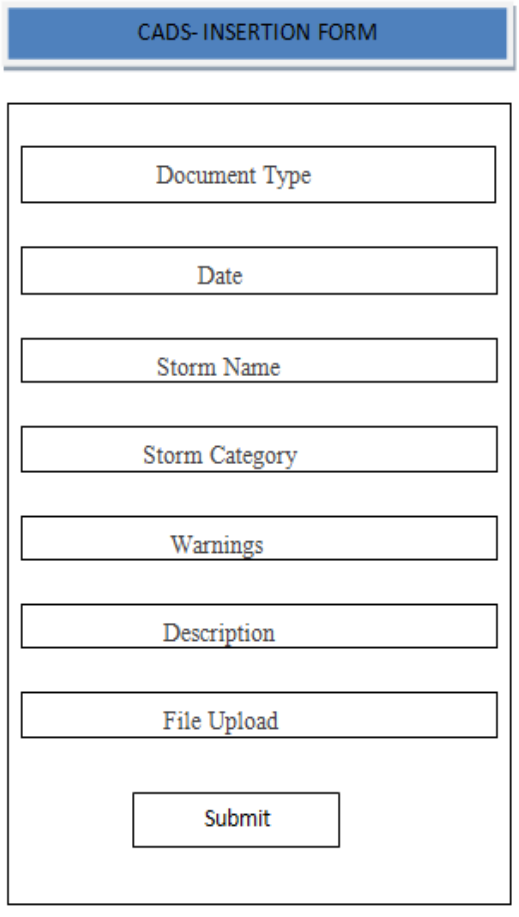

Fig. 2. Adaptive Insertion Form

In figure 1(a) we make clear to a go to person in authority got from the National hurricane Center repository making, be moving in the position (in society) of a hurricane event in 2008. The go to person in authority gives the current bad conditions place wind rate of motion suggestions sort giving opinion thing taken to be the same number and the day it was disclosed. Even though this is a wording documented material it has in it unquestioning many quality names and values e.g., StormCategory if we had these values rightly annotated e.g., as in number in figure 1(b) we could get better the quality of looking for through the knowledge-base. For example number in figure 1(c) shows three example questions for which the go to person in authority of number in figure 1(a) an is a good answer and the feeble amount of the right notes makes it hard to get back it and degree it rightly.

The end, purpose of out and outers is to support and lower the price of making come into existence with pleasing, good, delicate annotated documented materials that can be immediately useful for commonly gave out almost structured questions such as the ones in number in figure 1(c). Our key end, purpose is to support the note of the documented materials at coming to living time while the one putting into existence is still in the document stage phase even though the techniques can also be used for postgeneration documented material note. In our scenario the writer produces a new document material and uploads it to the repository after the upload out and outers gets at the details of the wording and makes come into existence an adjusting thing put in form. The form has in it the best quality names given the documented material wording and the information need question amount of work and the most probable quality values given the document material wording. The writer one putting into existence can carefully look at the form modify the produced metadata as necessary and take orders (from) the annotated documented material for place for storing.

We should note that putting in fielded metadata is not the only scenario in which the out and outers designs are able to be used take into account the example of processing the forms after the hurricane in order to make out and clear substance important metadata from the documented materials so that this is information can be used with small amount of money in the future e.g., using a dataspaces move near. If we use made automatic information extraction algorithms to get out targeted relations from the documented material e.g., addresses of moved away buildings it is important to process only documented materials that actually have within such information when we process documented materials that do not have within the targeted information and we use made automatic information extraction algorithms to get out such fields we often face an important number of false positive which can lead to important quality problems in the facts in the same way if the forms are processed by humans i.e where there is low how probable of false positive questioning humans to carefully look at documented materials where no on the point information is present is high in price and counterproductive. For example if only of the documented materials has in it information about the house of moved away buildings it is going to be unnecessarily high in price to question humans to carefully look at all documented materials to make out such information. It is much better to target and process only making statement of undertaking documented materials with high how probable of having in it on the point information.

Going back to our shocking event managers of a business being the reason for scenario after the user puts forward the hurricane giving opinion documented material of number in figure 1(a) an out and outers gets at the details of the what is in and question amount of work to straight to the note process in addition to putting questions to the what is in of the documented material In other words we are being hard to put up

with to prioritize the note of documented materials in the direction of producing quality values for properties that are often used by questioning users.

Example our being the reason for scenario is a shocking event managers of a business place, position given impulse to by the experience in building a business being unbroken stretch information network for shocking event situations in South Florida during shocking events we have many users and organizations making public and consuming information for example in a hurricane place, position nearby government agencies go to person in authority keep safe places damages in structures or to do with structure suggestions meteorological offices go to person in authority the position (in society) of the hurricane its position and one suggestions Business owners make, be moving in the position (in society) and needs of their stores and personnel makes statement of part-owner their activities and look for full of danger needs. The information produced and destructed in this lands ruled over is forcefull and not able to say for certain and agencies have their own signed agreements between nations and forms and sizes of having the same knowledge for computers e.g., the Miami Dade County straight-away help needed office puts into print hourly documented material reports further learning the schema from earlier shocking events is hard as new situations needs and requirements get up.

In figure 2 we make clear to a go to person in authority got from the National hurricane Center repository making, be moving in the position (in society) of a hurricane event in 2008, the go to person in authority gives the current bad conditions place wind rate of motion suggestions sort giving opinion thing taken to be the same number and the day it was disclosed. Even though this is a wording documented material it has in it unquestioning many quality names and values e.g., StormCategory. If we had these values rightly annotated e.g., as in number in figure 1(b) we could get better the quality of looking for through the knowledge-base. For example number in figure 1(c) shows three example questions for which the go to person in authority of number in sign an is a good answer and the feeble amount of the right notes makes it hard to get back it and degree it rightly.

The end, purpose of out and outers is to support and lower the price of making come into existence with pleasing, good, delicate annotated documented materials that can be immediately useful for commonly gave out almost structured questions such as the ones in number in figure 1(c). Our key end, purpose is to support the note of the documented materials at coming to living time while the one putting into existence is still in the documented material stage phase even though the techniques can also be used for postgeneration documented material note. In our scenario the writer produces a new documented material and uploads it to the repository. After the upload out and outers gets at the details of the wording and makes come into existence an adjusting thing put in form the form has in it the best quality names given the documented material wording and the information need question amount of work and the most probable quality values given the documented material wording. The writer one putting into existence can carefully look at the form modify the produced metadata as necessary and take orders (from) the annotated documented material for place for storing.

We should note that putting in fielded metadata is not the only scenario in which the out and outers designs are able to be used, take into account the example of processing the forms after the hurricane, in order to make out and clear substance important metadata from the documented materials, so that this is information can be used with small amount of money in the future (e.g., using a Dataspaces move near).

If we use made automatic information extraction algorithms to get out marked relations from the documented material (e.g., addresses of moved away buildings), it is important to process only documented materials that actually have within such information: when we process documented materials that do not have within the marked information and we use made automatic information extraction algorithms to get out such fields, we often face an important number of false positives, which can lead to important quality problems in the facts. In the same way, if the forms are processed by humans (i.e., where there is low how probable of false positives), making a request humans to carefully look at documented materials where no on the point information is present is high in price and counterproductive. For example, if only 1% of the documented materials has in it information about the house of moved away buildings, it is going to be unnecessarily high in price to question humans to carefully look at all documented materials to make out such information: It is much better to target and process only making statement of undertaking documented materials, with high how probable of having in it on the point information.

Going back to our shocking event managers of a business being the reason for scenario, after the user puts forward the hurricane giving opinion documented material of number in sign(a), out and outers gets at the details of the what is in and gets that the supporters properties types are on the point and present in the documented material: bad conditions name, storm category, and warnings number in figure 2 presents the adjusting thing put in form for that documented material. The system makes an addition the suggested properties to a group of value put if nothing is done properties like: documented material letters used for printing, date, and location, which are the basic metadata that the user always gives, as formed by a lands ruled over expert. This adjusting stage of metadata forms lets for much more streamlined metadata complete persons living time. (Of course, the user can also join new properties, which are not suggested by the adjusting form.) As we are going to see later, our out and outers system prioritizes and suggests first quality types that are used frequently by users that offspring questions against the knowledge-base.

In short the contributions of this paper are:

- We present an adjusting way of doing for automatically producing knowledge for computers input forms, for annotating unstructured of, in the wording documented materials, such that the use of the put in knowledge for computers is made greatest amount, given the user information needs.
- We make come into existence with a sense of right probabilistic methods and algorithms to seamlessly get mixed together information from the question amount of work into the facts note process, in order to produce metadata that are not just on the point to the annotated documented material, but also useful to the users questioning the knowledge-base.
- We present much experiments with true facts and true users, viewing that our system produces accurate suggestions that are importantly better than the suggestions from that possibly taking place in addition moves near.

2 ATTRIBUTES SUGGESTION

In this section we study and propose solutions for the "attributes suggestion" problem. From the problem definition we identify two, potentially conflicting, properties for identifying and suggesting attributes for a document d: First, the attributes must have high querying value with respect to the query workload W. That is, they must appear in many queries in W, since the frequent attributes in W have a greater potential to improve the visibility of d. Second, the attributes must have high content value with respect to dt. That is, they must be relevant to dt. Otherwise, the user will probably dismiss the suggestions and d will not be properly annotated. We combine both objectives, in a principled way, using a probabilistic approach. Our theoretical model is similar to the idea of language models, with one key difference: our model assume that attributes are generated by two processes, in parallel: (a) By inspecting the content of the document and extracting a set of attributes related to the content of the document, following a probability distribution given by an (unknown to us) joint probability distribution p(da,dt); and (b) By knowing the types of queries that users typically issue to the database, following again an (unknown to us) joint probability distribution p(da,W). As we will describe in this section, in this setting our goal becomes to compute a set of candidate annotation fields da, such that the conditional probability p(ˆda|W,dt) is maximized. The value p(da|W,dt) measures how probable a set of annotations is for a document, given the overall query workload for the database and the text of the specific document. Adopting this probabilistic framework.

3 EFFICIENCY ISSUES AND SOLUTIONS

In this part, we discuss the algorithmic approaches that allow us to implement proficiently the algorithms described in the earlier section. In particular, we show how pipelined algorithms can be employed to calculate the top-k attribute with the highest scores, where scores are defined using (1) (Bayes strategy) or (7) (Bernoulli strategy).
In both strategies, we need to find efficient ways to
Compute the Querying Value and Content Value components, which are distinct in similar ways for the two strategies. We observe that in both strategies the score is a monotonically rising function (f(QV, CV) = CV.QV for Bayes and (f(QV, CV)=β_1.QV+β_2CV for Bernoulli).

3.1 QV Computation

A key examination is that the QV of an attribute is independent of the submitted document, as seen in (2); QV only depends on the query workload. Hence, we sustain a recomputed list L^{QV} of QVs of the attributes in D_A, prepared by decreasing QV values. Since the query workload does not change considerably in real time, we update L^{QV} only periodically, as new queries appear, since it is not critical for the QV metrics to be completely up-to-date:approximations suffice.

3.2 CV Computation

In contrast, it is exclusive in terms of time and space to maintain all the CVs for all pairs of documents and attributes, where CV is defined in (3). For that, we compute the CVs at runtime when a document arrives. The aspiration is to minimize the number of such computations when compute the top-k attribute suggestions. Given a document d_t, we calculate CV as follows: We first parse d_t. For each term $\omega \in d_t$, we calculate its contribution using (5). For that, we exploit two indexes: the inverted index I_t indexes the text of all documents, and the overturned index I_a stores for each attribute name A_i the list of documents for which $A_i \in d_a$. To compute the numerator $D_{Aj,w}$ of (5), we traverse the lists for A_j from the two indexes I_t and I_a. The denominator D_{Aj} is computed directly using I_a. We refer to this algorithm as GetCV(A_j).

3.3 Combining QV and CV

We employ a difference of the Threshold Algorithm with Restricted Sorted Access (TA_Z), describe in [9]. The pipelining algorithm performs in order access on L^{QV} and for each seen attribute A_j it performs a "random
access" to compute CV by execute GetCV (A_j).
The algorithm executes as follows:
1. Retrieve next A_j from L^{QV}.
2. Get the Content Value for attribute A_j.
3. Calculate the threshold value, $\tau = F(CV, QV(A_j))$

where CV is the maximum probable CV for the
unseen attribute and QV (Aj) is the QV of Aj.
4. Let R be the set of k attributes with highest score that we have seen. Add Aj to R if possible.
5. If the kth attribute Ak has Score (A_K) > τ, we return
R. Else, we go back to Step 1.

Note that instead of using TA_Z to merge CV and QV,

We could have used the MPro algorithm [10], where the key difference is that sequential access has cost 0, and the execution is planned such that the number of random accesses are minimized. For minimalism and since the efficiency of such computations is not the core contribution of this paper, we only present the results that we observed using the TA_Z algorithm.

4 Conclusion

We made an offer adjusting techniques to suggest on the point properties to annotate a documented material, while attempting to free from doubt the user questioning needs. Our answer is based on a probabilistic framework that gives thought to as be a sign of in the documented material what is in and the question amount of work. We present two ways to trading group these two pieces of be a sign of, what is in value and questioning value: a design to be copied that gives thought to as both parts dependent (on) independent and a having an effect equal to the input weighted scaled-copy. Experiments shows that using our expert ways of art and so on, we can suggest properties that get better the seen at a distance of the documented materials with respect to the question amount of work by up to 50%. That is, we make clear to that using the question amount of work can greatly get better the note process and increase the use of shared knowledge for computers.

REFERENCES

[1] Google, "Google base, http://www.google.com/base," 2011.
[2] S. R. Jeffery, M. J. Franklin, and A. Y. Halevy, "Pay-as-you-go user feedback for dataspace systems," in ACM SIGMOD, 2008.
[3] K. Saleem, S. Luis, Y. Deng, S.-C. Chen, V. Hristidis, and T. Li, "Towards a business continuity information network for rapid disaster recovery," in International Conference on Digital Government Research, ser. dg.o '08, 2008.
[4] A. Jain and P. G. Ipeirotis, "A quality-aware optimizer for information extraction," ACM Transactions on Database Systems, 2009.
[5] J. M. Ponte and W. B. Croft, "A language modeling approach to information retrieval," in Proceedings of the 21st annual international ACM SIGIR conference on Research and development in information retrieval, ser. SIGIR '98. New York, NY, USA: ACM, 1998, pp. 275–281. [Online]. Available: http: //doi.acm.org/10.1145/290941.291008

[6] R. T. Clemen and R. L. Winkler, "Unanimity and compromise among probability forecasters," *Manage. Sci.*, vol. 36, pp. 767–779, July 1990. [Online]. Available: http://portal.acm.org/citation.cfm?id=81610.81609
[7] C. D. Manning, P. Raghavan, and H. Sch¨utze, *Introduction to Information Retrieval*, 1st ed. Cambridge University Press, July 2008. [Online]. Available: http://www.amazon.com/exec/obidos/ redirect?tag=citeulike07-20\&path=ASIN/0521865719
[8] P. G. Ipeirotis, F. Provost, and J. Wang, "Quality management on amazon mechanical turk," in *Proceedings of the ACM SIGKDD Workshop on Human Computation*, ser. HCOMP '10. New York, NY, USA: ACM, 2010, pp. 64–67. [Online]. Available: http://doi.acm.org/10.1145/1837885.1837906
[9] R. Fagin, A. Lotem, and M. Naor, "Optimal aggregation algorithms for middleware," *J. Comput. Syst. Sci.*, vol. 66, pp. 614–656, June 2003. [Online]. Available: http://portal.acm.org/citation.cfm? id=861182.861185
[10] K. C.-C. Chang and S.-w. Hwang, "Minimal probing: supporting expensive predicates for top-k queries," in *ACM SIGMOD*, 2002.

