

# A Framework Towards A Trust Management System For Services In Cloud Environments

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**ABSTRACT:** Trust management is one of the most challenging issues for the adoption and growth of cloud computing. The highly dynamic, distributed, and non-transparent nature of cloud services introduces several challenging issues such as privacy, security, and availability. Preserving consumers' privacy is not an easy task due to the sensitive information involved in the interactions between consumers and the trust management service. Protecting cloud services against their malicious users (e.g., such users might give misleading feedback to disadvantage a particular cloud service) is a difficult problem. Guaranteeing the availability of the trust management service is another significant challenge because of the dynamic nature of cloud environments. In this article, we describe the design and implementation of CloudArmor, a reputation-based trust management framework that provides a set of functionalities to deliver trust as a service (TaaS), which includes i) a novel protocol to prove the credibility of trust feedbacks and preserve users' privacy, ii) an adaptive and robust credibility model for measuring the credibility of trust feedbacks to protect cloud services from malicious users and to compare the trustworthiness of cloud services, and iii) an availability model to manage the availability of the decentralized implementation of the trust management service. The feasibility and benefits of our approach have been validated by a prototype and experimental studies using a collection of real-world trust feedbacks on cloud services..

**Key Words-** Opinion mining, opinion targets extraction, opinion words extraction

## 1. INTRODUCTION

There are millions of web customers at present, as a final result of which lots of the social media has gathered tremendous quantity of valuable peer assessment and records on practically the whole thing. With the fast development of e-commerce, extra merchandise are sold on the internet as well as many folks are buying products online. So as to gain consumer satisfaction and their looking experiences, it has grow to be foremost for manufacturers to allow consumers to

check or to specific opinions on the merchandise which they purchase. Most of the

time the reviews are text and this makes it very tough for a potential purchaser to learn them and to make a selection on whether to purchase the product or no longer. With the intention to make it effortless, mining this pool of reports and detecting opinion function has become valuable.

## 2. RELATED WORK

1) Trust as a service: A framework for trust management in cloud environments

AUTHORS: T. H. Noor and Q. Z. Sheng

Establishing trust for resource sharing and collaboration has become an important issue in distributed computing environment. In this paper, we investigate the problem of establishing trust in hybrid cloud computing environments. As the scope of federated cloud computing enlarges to ubiquitous and pervasive computing, there will be a need to assess and maintain the trustworthiness of the cloud computing entities. We present a fully distributed framework that enable trust-based cloud customer and cloud service provider interactions. The framework aids a service consumer in assigning an appropriate weight to the feedback of different raters regarding a prospective service provider. Based on the framework, we developed a mechanism for controlling falsified feedback ratings from iteratively exerting trust level contamination due to falsified feedback ratings. The experimental analysis shows that the proposed framework successfully dilutes the effects of falsified feedback ratings, thereby facilitating accurate and fair assessment of the service reputations.

2) Improving privacy and security in multi-authority attribute-based encryption

AUTHORS: M. Chase and S. S. M. Chow

Attribute based encryption (ABE) [13] determines decryption

ability based on a user's attributes. In a multi-authority ABE scheme, multiple attribute-authorities monitor different sets of attributes and issue corresponding decryption keys to users, and encryptors can require that a user obtain keys for appropriate attributes from each authority before decrypting a message. Chase [5] gave a multi-authority ABE scheme using the concepts of a trusted central authority (CA) and global identifiers (GID). However, the CA in that construction has the power to decrypt every ciphertext, which seems somehow contradictory to the original goal of distributing control over many potentially untrusted authorities. Moreover, in that construction, the use of a consistent GID allowed the authorities to combine their information to build a full profile with all of a user's attributes, which unnecessarily compromises the privacy of the user. In this paper, we propose a solution which removes the trusted central authority, and protects the users' privacy by preventing the authorities from pooling their information on particular users, thus making ABE more usable in practice.

3) Secure threshold multi authority attribute based encryption without a central authority

AUTHORS: H. Lin, Z. Cao, X. Liang, and J. Shao

An attribute based encryption scheme (ABE) is a cryptographic primitive in which every user is identified by a set of attributes, and some function of these attributes is used to determine the ability to decrypt each ciphertext. Chase proposed the first multi authority ABE scheme in TCC 2007 as an answer to an open problem presented by Sahai and Waters in EUROCRYPT 2005. However, her scheme needs a fully trusted central authority which can decrypt every ciphertext in the system. This central authority would endanger the whole system if it's corrupted.

This paper presents a threshold multi authority fuzzy identity based encryption (MA-FIBE) scheme without a central authority for the first time. An encrypter can encrypt a message such that a user could only decrypt if he has at least  $d$  of the given attributes about the message for at least  $t + 1$ ,  $t \leq n/2$  honest authorities of all the  $n$  attribute authorities in the proposed scheme. The security proof is based on the secrecy of the underlying joint random secret sharing protocol and joint zero secret sharing protocol and the standard decisional bilinear Diffie-Hellman assumption. The proposed MA-FIBE could be extended to the threshold multi authority attribute based encryption (MA-ABE) scheme and be further extended to a proactive MA-ABE scheme.

### 3. PROPOSED SYSTEM

In this, we can present a characteristic-established product

ranking procedure that mines various customer experiences. We first establish product aspects and analyze their frequencies. For each and every function, we establish subjective and comparative sentences in studies. We then assign overview orientations to those sentences. The relationships among merchandise through utilising the knowledge bought from consumer studies, by establishing a weighted and directed graph. We mine this graph to investigate relative nice of merchandise.

For the reason that of the person convenience as well as reliability, and the product cost there are the enormous numbers of buyers are making a choice on probably the most great option to online shopping online browsing. And now a days, online shopping is much more general in the world. And this makes very moneymaking to patron. To make purchasing the decisions is situated on best photos and short descriptions of the product, and it is very difficult for customers to purchasing the shoppers; as the quantity of merchandise being offered online is raises. On the other hand, client reviews, i.e. Text.

Describing features of the product, their comparisons and experiences of targeted product furnish a wealthy source quantity of expertise to examine products. And to make the good purchasing choices, online shops like Amazon.Com, and flipcart.Com permit us buyers so as to add reviews of products that they have got bought. These reports emerge as diverse to support the opposite customers. Most often, many consumers have used informed rankings. To assign the rank to the product, then it is rather invaluable for the consumer to prefer the product and its pleasant like excellent in nice or dangerous. Furthermore, the product usually has more than one product features, their advantages and some drawbacks, which plays a relevant function in unique manner. Extraordinary consumers may be eager about special points of a product, and their preferences may vary as a result.

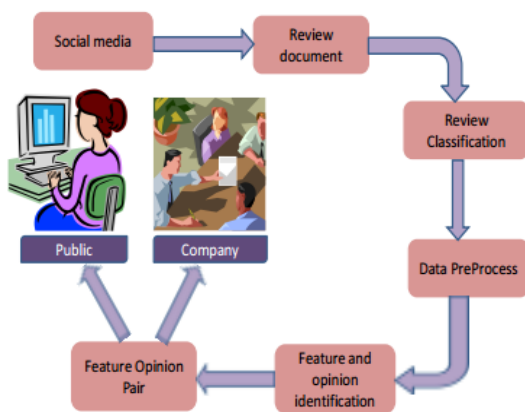
WAM is used for capture the opinion relations. Partially supervised WAM is used to analyze the relationship among the opinion words and targets. In a people opinions it could be relate the words among the given opinion. When compared to unsupervised alignment model partially supervised alignment model provides the better accuracy for relating words. Also it decreases the parsing

errors. Example: opinion word "awesome feeling", "awesome design" here, awesome is get into the high ranking to the graph. as a result, design, feeling could be considered for opinion target. It also get extract the symbolic opinions.

All the data's collected are used as a dataset. In the Dataset, we identify the Positive and Negative user ratings by number of feedbacks provided. The graph displays the user's feedback across positive and negative terminals with overall total ratings as well is shown in fig 2.

Mathematical calculation of those reviews can be committed into the form of overall percentage ratings, could give more idea of the product features in users point of view and also it could be helpful for the manufacturers.

### 3. SYSTEM ARCHITECTURE



**Fig 1 System Architecture**

We pick on-line reviews from one-of-a-kind domains and languages to the analysis datasets. We evaluate to a number of modern day ways on opinion goal/word extraction. The principal framework is extracting opinion targets/phrases as a co-rating approach. We assume that all nouns/noun phrases in sentences are opinion goal candidates, and all adjectives/verbs are viewed as advantage opinion words, which are broadly adopted by way of prior approaches. Each candidate shall be assigned a confidence, and candidates with better confidence than a threshold are extracted as the opinion goals or opinion phrases. To assign a self belief to every candidate, our common motivation is as follows.

If a phrase is likely to be an opinion word, the nouns/noun phrases with which that word has a modified relation

could have better self assurance as opinion target. If a noun/noun phrase is an opinion goal, the phrase that modifies it'll be particularly more likely to be an opinion word".

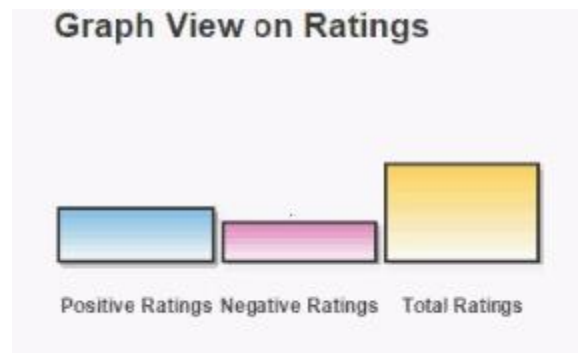
We are able to see that the boldness of a candidate (opinion target or opinion word) is at the same time determined by means of its neighbors in line with the opinion associations amongst them.

Simultaneously, every candidate could impact its neighbors. This is an iterative reinforcement method.

The fig. 1.1 says that once a targeted consumer does on-line browsing, after that in step with that particular product she or he must submit studies i.e. Suggestions of client about product. Those reviews may be both positive or terrible. After sending the experiences, approach will send reviews to the server. Server will practice filter for those assessment. Filter is utilized to separate constructive or bad review in order that extraction of optimistic studies and negative experiences can be carried out. As well as separation of phrases those are meaningful shall be extracted.

For this separation Hill mountain climbing algorithm is used. Server will establish key phrase for this in part supervise algorithm is used and will assign polarity to them in this optimistic and bad sentence is exclusive.

### Results



**Fig 2 user ratings**

### 3. CONCLUSION

In this paper, a novel technique is implemented that help in detecting reputation-based trust management framework that



provides a set of functionalities to deliver trust as a service (TaaS), which includes i) a novel protocol to prove the credibility of trust feedbacks and preserve users privacy, ii) an adaptive and robust credibility model for measuring the credibility of trust feedbacks to protect cloud services. We also develop an availability model that maintains the trust management service at a desired level. We have collected a large number of consumer's trust feedbacks given on real-world cloud services. iii) an availability model to manage the availability of the decentralized implementation of the trust management service.

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