Multi Attribute Content Searching Scheme Based Social Group Identification For Social Networks In Mobile Disconnected Networks

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ABSTRACT:
The strength of peer to peer networks in file sharing systems is well known but the problem of sharing files to unknown nodes has not been solved efficiently. There are many techniques has been proposed earlier to perform file sharing in peer to peer content sharing in mobile disconnected networks. We propose a multi attribute content searching scheme to identify the social groups to perform content sharing in peer to peer networks. The users of the common network investigate many equipment and they contribute topoles apart information stuck between them. The determination of the concentration or the investigateexpression is acknowledged by the planned approach and base on the importunate interest, we make out the set of user group in the community network and according to the attention of the communal groups, the contented are common to provide right of admission to the users of the network. We propose a multi attribute content searching scheme which identifies the locations the content is available and computes the frequency of content searching and set of user groups searching the file content. The proposed method identifies the social group at each region and performs identification of interest of the social group and shares the file content in the selective nodes of the network. The proposed method reduces the time complexity and improves the performance of content sharing and content searching.

Index Terms: Social Groups, Content Searching, Content Management, Mobile Disconnected Networks

1. INTRODUCTION:

In modern society the people's interest and their motivation are not same and differ according to their personal and social view. But still the peoples maintain set of groups with similar ideas and have communication between them. Social network is one like that which provides a platform to know more peoples and communicate and share information between them. In social network, every user maintains a group or friends list who has similar interest as the person. In universal the user of the common network know how to be group according to loads of ways or merely based on several context.

For example, a communalestimationbe capable of be composedfrom side to side the social network or communal forums, anywhereevery user in the communal network position their observationconcerning the estimation which could be old to bring to a shut about any topic. From the communityestimation the users of the social network can be grouped into many categories which show that they have the same opinion or same interest against the topic of review. The development of communication and internet technology has provided an opportunity for the modern people to share their information. The classic example of such information sharing between the social groups is web search and it reduces the search time and improves the quality of search.

Content searching is one where the information is stored in mobile disconnected networks and the user of the network search for the required information from the network. There are many users in the network but has similar interest or searching for similar content. Every user generates the query and propagates the query throughout the network and finally collects some locations where the data is available. From the locations a single location is selected for data retrieval. This increases the search time when the same content is being searched by some other users of the network. So most of the time is spent on searching and increases the cost of data retrieval.

The question is why the search results could not be used in efficient way to reduce the search time by grouping the search nodes or users with similar queries done in collaborative web search. By grouping the similar queries and the users with similar interest the search time and the search cost could be reduced highly. The mobile disconnected networks are collection of nodes or mobile nodes where each node has different information and there are some nodes or users search for required information.

According to the interest of the users they can be grouped and their content search can be utilized for the group user in reducing the search time and improving the quality of search in mobile disconnected networks.

2. RELATED WORKS:

There are many approaches has been discussed in the literature for content searching in mobile disconnected networks and we discuss few of them here in this section.

Remote Data examination for system Coding-Based dispersedstorage space Systems [2],suggest RDC-NC, a work of fictionsafe and efficient RDC system for system coding-based dispersed storage system. RDC-NC mitigates new

attacks with the meaning ofstalk from the fundamental principle of system coding. The systemis able to protect in an adversarial location the negligiblecommuniqué overhead of the mendconstituentattain by system coding in a benevolent setting. We put into practice our scheme in addition to experimentally give you an idea about that it is computationally reasonably priced for togethercustomers and servers.

A Message Service for Opportunistic compute in detached MANETs [3], bring in JOMS (Java Opportunistic communication Service), a JMS supplierspecially designed for D-MANETs, and by means of which pre-existing or new-fangled JMS-based application can exist easily deploy in such networks.

A Protocol intended for Content-Based message in detached Mobile Ad Hoc Networks [4], speak to the difficulty of behind content-based message in incompletelyor sporadicallyassociated mobile ad hoc networks (MANETs). The procedure we intended leverageson the concept of opportunistic network and delay-tolerant network in order to explanation forthe nonattendance of end-to-end connectivity in detached MANETs. The document provides an impression of the protocol, as glowing as imitation results that demonstrate how this protocol can carry out in realisticconditions.

Opportunistic Trust base P2P Services structure for Disconnected MANETs [5], suggest a trust based structure for P2P armed forces in a delay-tolerant detached MANET. The plannedconstruction utilizesdecentralizedconfidenceduplication and a P2P memorandumcode of behavior for sheltered file trade over in an opportunistic store-carry in adding toonwardgadget. We talk in family affiliate to the develop of the organization and transportationelsewhere testby means of a gnutella style P2P file giving out application in a disengaged MANET. Our consequencesoffer important imminent into the key confront and short-comings tolerate by researchers and engineers at what timescheming and deploy such systems.

Trust-based content allocation for mobile Ad Hoc networks [8], recommend a narrativeconviction and probabilistic swellingcollection mechanism for contentedallocation in mobile adhocnetwork which aim to achieve dependable node assortment andto safeguard mobile node resources. The wished-forinstrumentis evaluated against chosen alternative conviction schemes, with theresults presentation that our suggestion achieves its goals.

A trust value-based system for efficient insidedistribution over mobile P2P network [7], suggest the Trust value-based Local movable P2P (TLoMP) system, which is appropriate for movable P2P inside sharing base on trust principles to reduce inside server transfer. After construct a contents-sharing collection based on faith values among movable nodes which demand identical CD contents from its wine waiter, this system attempts to decrease contents server traffic to get better the quality of armed forces through inside sharing. We established that the TLoMPmethod reduces the inside server transfer more competently in terms of the full amountmember of staff serving at table bandwidth usage, contrast with the cluster-based procedure, from end to endimitationparticularly, our organizationshow more betterpresentation than the easy to

get to protocol at what timemovable nodes are cluster more densely.

A pattern scheme for connectivity-aware movable P2P network for well-organized mobile cloud-based videocassettestream services [11], propose a pattern scheme for connectivity-aware P2P network which be capable ofdecrease network traffic of cloud-based stream servers from side to sidedistribution of stream video by utilizein turn on connectivity status of mobile campaign, and which can get better the quality of transportable cloud-based video stream services by bearing in mind mobility of movableplans and QoS which contain not bewell thought-out in obtainable P2P scheme. Our futurescheme reduces the amount of server transferin adding together to the unscrambling times of mobile devices considerably, measure up to the non-P2P technique and the AODV organization. It also augmentsconsiderably the number of mobile movement to which a cloud-based stream server can provide videocassettewatercoursearmed forcesat the similar time, contrast to the two scheme.

Community wanderer: A Social-Based steering Algorithm in Opportunistic Mobile Networks [13], look at the threshold pattern of community amalgamation during the procedure of distributed group of people discovery. We then bring in a new social-based steering algorithm, called group of peoplewanderer, which identifies those lively nodes moving sandwiched between different clustered communities to create anwell-organized inter-community forward path. Simulations on top of four real data sets show that the new algorithm has a much lower overhead than the existing algorithms and analogousmemorandum delivery ratio.

All the above discussed approaches have the problem of sharing the file content in efficient manner.

3. PROBLEM STATEMENT:

The earlier method performs content sharing according to the user interest, but the identification of user interest is performed based on the communication between the users of the group. The social group is not identified efficiently.

- The content sharing is performed based on the total interest which reduces the security of the file content.
- The file sharing approach is based on earlier methods does not produce, efficient results and the methods shares the content in inefficient manner.
- The identification of files is not efficient and lags with the social group identification efficiency.

4. PROPOSED METHOD:

We proposed a multi attribute content search algorithm and content sharing approach. The proposed approach has various functional components namely, multi attribute content search, social group identification and content sharing algorithm. We will discuss each of the functional component in detail in this section.
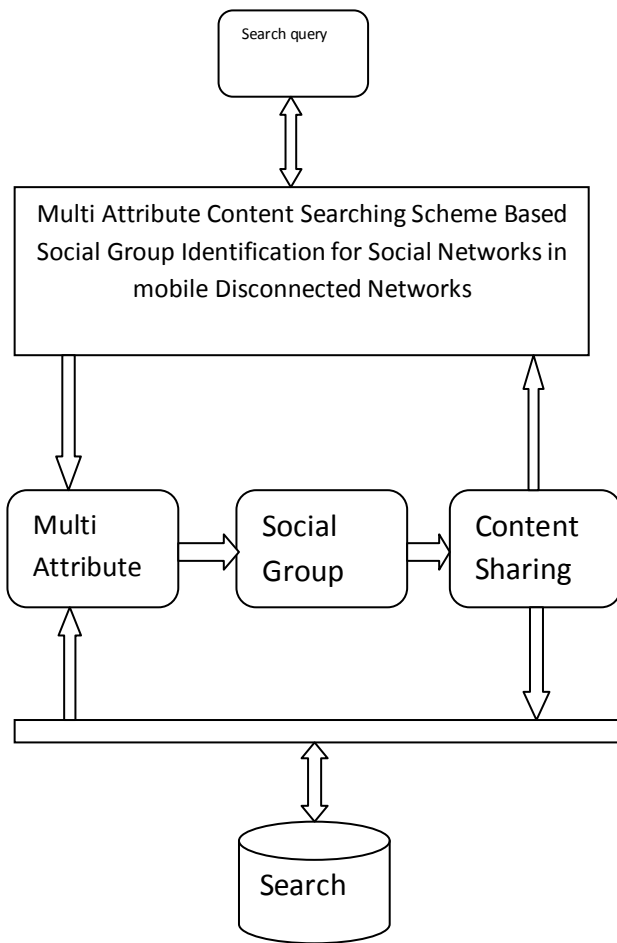
Figure 1: Proposed system architecture

The Figure 1, shows the proposed system architecture and shows the functional components of the proposed approach.

4.1 Multi Attribute Content Searching Algorithms:

In general phenomena, the content are distributed at different nodes of the mobile disconnected networks and the users of the network generate queries at different time window and the motivation of the search varies between users. For the same content of the network, the demand varies at different time window according to different constraints. For example for a content C_i in the Node N_i, the demand can be computed as follows:

The content demand Cd = $\frac{Number of request generated at time Ti}{Total Number of nodes present in the network}$ ×Number of locations the resource exist.

Here the content demand is computed based on the frequency of searching and the number of locations the content is available and so on. Similarly to compute the frequency of content search, we consider the number of locations the content is available, number of user groups interested in that content and so on.

MACS Algorithm:

Identify the resource Requested Res = Resource $\in Request$

Identify set of all locations the resource available Rl = $\sum Loc \in Res$
for each location Li
Compute frequency Freq = $\frac{Number of request generated at resource}{Total number of request generated}$
Compute content demand cd = $\frac{Number of request generated at time Ti}{Total Number of nodes present in the network}$ ×Number of locations the resource exist.
Compute content weightage CW = Cd×Freq.
end

The multi attribute content sharing algorithm computes the number of available resource location and for each the resource, we computes the contend demand factor. Using both the measure, we compute the content weightage value for each of the resource available.

4.2 Social Group Identification:

The method identifies set of users who searching for the same content and with the similar interest. For each user, the method maintains search history and using the history of search we identify set of users with similar interest is identified. The identified users are added to the social group and for everyconsumer of the communalgroup; we recognize the unrelenting interest and the paying attentioninside are applied with multi quality content look for algorithm. Based on the consequence of the satisfied search algorithm the happy with additional weight determination be shared among the communal groups.

Algorithm:
Initialize User Groups UG.
Identify the record of users of the network.
Us = $\sum Users \in Network$
for each user Ui from Us
Compute all resources requested Rr = $\sum Request(Ui) \in RequestLog$
Identify Persistent interest Pi = $\sum Interest(Ui) \in \forall(Time window of Rr)$
end
for each user group Ugi from Ug
Identify similar interested users.
Ugi = $\sum Users(Us) \in Similar Interst$
end

The algorithm computes the set of all resources requested and identifies the persistent interest. Then from the interest identified, we identify the similar interested users.

4.3 Content Sharing Approach:

The proposed content sharing approach performs multi attribute content searching algorithm, which identifies the frequency and weightage of each content being searched. This is performed for each of the social groups being identified and based on identifies social group, with the content search result a set of resource will be selected based on content search threshold and shared between the users of the group.

Algorithm:

Identify set of all interest of search for the social group.
SI = $\sum Interest of social group SG$
for each content of SI
compute multi attribute content search weight MW.

if MW>Threshold
share the content between users.
end
end

The content sharing algorithm, computes the multi attribute search weight for each of the resource being available and if the weight is greater than the threshold then it will be shared with other users.

5. EXPERIMENTAL RESULTS:

The proposed multi attribute content search algorithm based social group identification for content search in mobile disconnected networks has been implemented and tested for its results. The above discussed approach has been evaluated with the following parameters.

Table 1: Simulation Parameters

Parameter	Value
Number of Nodes	500
Number of social groups	10
Number of interests	20

The Table 1, shows the simulation parameters being used in evaluating the proposed method.
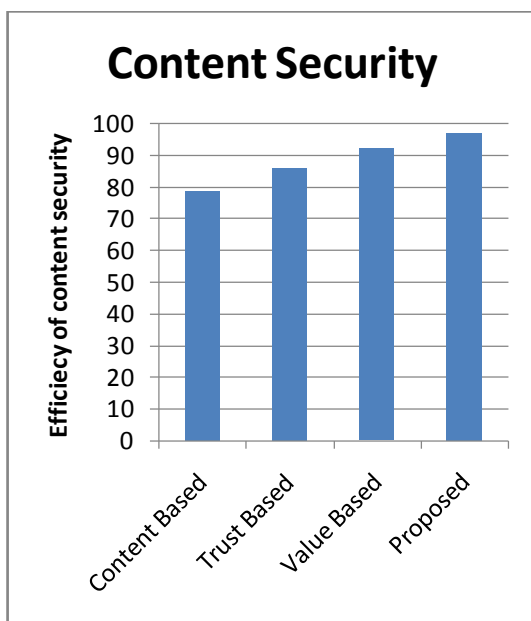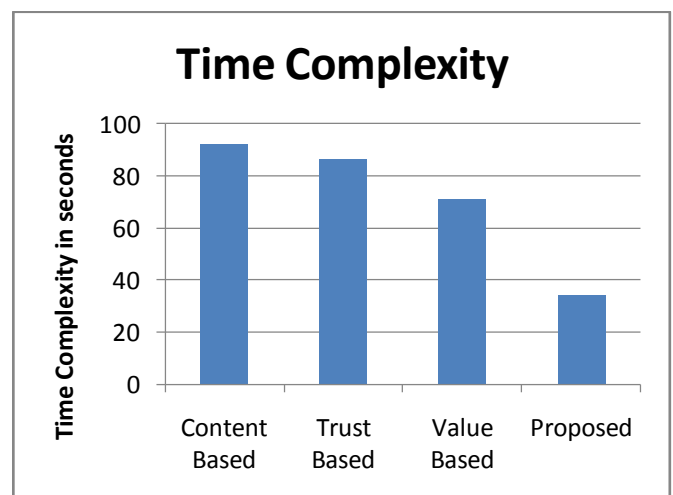

Graph 1: Comparison of content security

The Graph1, shows the comparison of content security produced by different methods and it shows clearly that the proposed method produces more security than other methods.
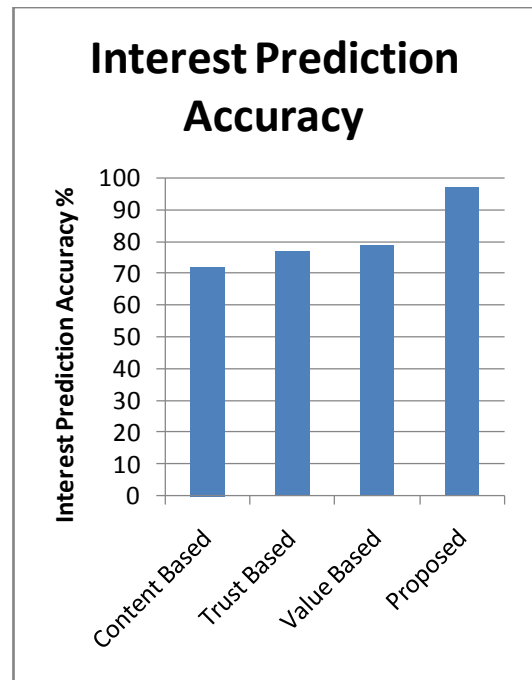

Graph 1: Comparison of interest prediction accuracy

The Graph2 shows the comparison of interest prediction accuracy and it shows clearly that the proposed method has produced more accuracy than other methods.

Graph 3: comparison of time complexity

The Graph 3, shows the comparison of time complexity of different methods and it shows clearly that the proposed method produced less time complexity than other methods.
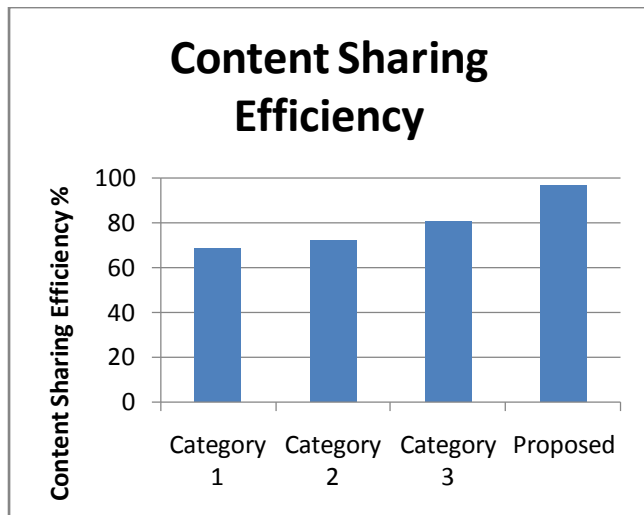
Graph 4: Comparison of content sharing efficiency

The graph 4, shows the efficiency of content sharing performed by different methods and it shows clearly that the proposed method has produced efficient results than other methods.

6.   CONCLUSION:

The proposed multi attribute content searching scheme for social group identification identifies the users interest in persistent manner. Based on user interest the social groups are identified and for each social group based on identified interest, we compute the multi attribute content searching algorithm which return weight for each of the content in the network being searched. Based on the content search weight and the threshold being used, a set of content will be selected for sharing into the social groups. The method improves the performance of content security and increase the efficiency of social group identification and interest identification. The method also reduces the time complexity of content sharing and search mechanism.

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