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Efficient Search Concert in Unstructured P2P Networks Based On UIM

Amudha S[1] and Belina N[2]

[1]**Department of CSE, Sriram Engineering College, Anna University, Chennai, Guindy, Tamilnadu, India**

[2]**Department of CSE, Sriram Engineering College, Anna University, Chennai, Guindy, Tamilnadu, India**

ABSTRACT

Peer-to-peer (P2P) networks establish loosely coupled application-level overlays on top of the Internet to facilitate efficient sharing of resources. They can be roughly classified as either structured or unstructured networks. Without stringent constraints over the network topology, unstructured P2P networks can be constructed very efficiently and are therefore considered suitable to the Internet environment. However, the random search strategies adopted by these networks usually perform poorly with a large network Size. In this paper, we seek to enhance the search performance in unstructured P2P networks through exploiting users' common interest patterns captured within a probability-theoretic framework termed the user interest model (UIM). A search protocol and a routing table updating protocol are further proposed in order to expedite the search process through self organizing the P2P network into a small world. Both theoretical and experimental analyses are conducted and demonstrated the effectiveness and efficiency of our approach.

KEYWORDS: *UIM- User Interest Model, Search Protocol, Routing table updating protocol, efficient performance in large network size*

1. INTRODUCTION

The search performance in unstructured P2P networks can be effectively improved through exploiting the statistical patterns over user's common interest. To improve the search performance in unstructured P2P networks based on the common interest of the users. Locally shared resources of a peer can be explored to guide the distributed resource discovery process and therefore enhance the overall resource discovery performance in unstructured P2P networks. Uses the User Interest Model (UIM) based on the general probabilistic tool termed Condition Random Fields (CRF) to model user's diverse interests. If the search content is available in local peer then it will retrieve the content of the file from local system. Else it forwards the query to its neighboring Peers. If the neighboring peer have the search content, then it response to searching peer.

One fundamental challenge of P2P networks is to achieve efficient resources discovery. In the literature, many P2P networks have been proposed in an attempt to overcome this challenge. Those networks can be largely classified into two categories, namely, structured P2P networks based on a distributed hash table (DHT) and unstructured P2P networks based on diverse random search strategies (e.g., flooding). Without imposing any stringent constraints over the network topology, unstructured P2P networks can be constructed very efficiently and have therefore attracted far more practical use in the Internet than the structured networks. Peers in unstructured networks are often termed blind, since they are usually incapable of determining the possibility that their neighbor peers can satisfy any resource queries. An undesirable consequence of this is that the efficiency of distributed

resource discovery techniques will have to be compromised. In practice, resources shared by a peer often exhibit some statistical patterns. The fundamental idea of this paper is that the statistical patterns over locally shared resources of a peer can be explored to guide the distributed resource discovery process and therefore enhance the overall resource discovery performance in unstructured P2P networks. Three essential research issues have been identified and studied in this paper in order to save peers from their blindness. For ease of discussion, only one important type of resources, namely, data files will be considered in this paper.

Research issue deals with arbitrary searches. unstructured P2P networks, such as Gnutella, are used for performing arbitrary searches (i.e., the form of a search request is not restricted) and structured networks, such as the ones based on Distributed Hash Table algorithms, are used for performing exact searches (i.e., the form of a search request is restricted)[1].

The second research issue deals with social networks. In social networks, people can directly contact some acquaintances that potentially have knowledge about the resources they are looking for. In this paper, evolution of social models in P2P networking is systematically investigated with a focus on utilizing self- organization to improve the performance of resource discovery in large scale P2P networks [2].

2. RELATED WORKS

To enhance the search performance in unstructured P2P network, User Interest Model (UIM) is used to exploit the User's common interest pattern. A search protocol and a routing table updating protocol are further proposed in order to expedite the search process through self organizing P2P network. In addition to this a greedy protocol has been proposed to drive the distributed search queried files through peer's local interactions. So the search performance offered is Optimal. In order to improve search performance, guided search. The key problem is what information is actually eligible to guide the search. Used Interest-based locality as the general search guidance. The basic assumption is that if a peer p0 has a particular file required by another peer p, and then p0 is likely to have other files to be requested by p in the future. According to previous successful queries, shortcuts from peer p to several peers p0 are established in order to expedite subsequent search processes.

ADVANTAGES OF PROPOSED SYSTEM

- Guided Search.
- Routing updating table.
- High degree of optimality can be achieved using this technique.
- Improved performance of search offered using network protocols in an efficient manner.
- Fast Search Technique based on UIM.

3. TECHNIQUE

The search performance in unstructured P2P networks can be effectively improved through exploiting the statistical patterns over user's common interest.

To improve the search performance in unstructured P2P networks based on the common interest of the users. Locally shared resources of a peer can be explored to guide the distributed resource discovery process and therefore enhance the overall resource discovery performance in unstructured P2P networks .Uses the User Interest Model (UIM) based on the general probabilistic tool termed Condition Random Fields (CRF) to model user's diverse interests. If the search content is available in local peer then it will retrieve the content of the file from local system. Else it forwards the query to its neighboring Peers. If the neighboring peer have the search content, then it response to searching peer.

4.ARCHITECTURE

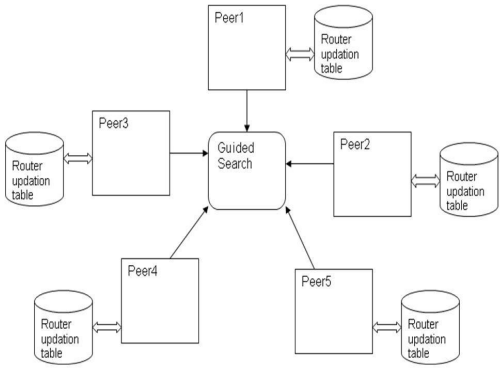

FIGURE 1 SYSTEM STRUCTURE

E DIAGRAM

5. PERFORMANCE EVOLUTION

It's shown that search performance in unstructured P2P networks can be effectively improved through exploiting the statistical patterns over user's common interest. To improve the search performance in unstructured P2P networks based on the common interest of the users. Locally shared resources of a peer can be explored to guide the distributed resource discovery process and therefore enhance the overall resource discovery performance in unstructured P2P networks .Uses the User Interest Model (UIM) based on the general probabilistic tool termed Condition Random Fields (CRF) to model user's diverse interests.

If the search content is available in local peer then it will retrieve the content of the file from local system. Else it forwards the query to its neighboring Peers. If the neighboring peer have the search content, then it response to searching peer.

Our solution toward enhancing search performance was presented in three steps.

1. A UIM has been introduced in order to capture user's diverse interests within a probability –theoretic Framework .It leads us to further introduce a concept of interest distance between any two peers.

2. Guided by UIM, a greedy protocol has been proposed to drive the distributed search of queried files through peer's local interactions.

3. Finally, a routing table updating protocol has been proposed to manage peer's neighbor lists.

6. CONCLUSION

The search performance in unstructured P2P networks can be effectively improved through exploiting the statistical patterns over users' common interests. Uses the User Interest Model (UIM) based on the general probabilistic tool termed Condition Random Fields (CRF) to model user's diverse interests. With UIM, one can estimate the probability of any peer sharing a certain file upon given fact that it shares another file.With the help of a newly introduced filtering mechanism, the whole P2P network will gradually self organize into a small world.

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