Efficient Data Query in Intermittently-Connected Mobile Ad Hoc Social Networks

Abstract:

This work addresses the problem of how to enable efficient data query in a Mobile Ad-hoc Social Network (MASON), formed by mobile users who share similar interests and connect with one another by exploiting Bluetooth and/or WiFi connections. The data query in MASONs faces several unique challenges including opportunistic link connectivity, autonomous computing and storage, and unknown or inaccurate data providers. Our goal is to determine an optimal transmission strategy that supports the desired query rate within a delay budget and at the same time minimizes the total communication cost. To this end, we propose a centralized optimization model that offers useful theoretic insights and develop a distributed data query protocol for practical applications. To demonstrate the feasibility and efficiency of the proposed scheme and to gain useful empirical insights, we carry out a testbed experiment by using 25 off-the-shelf Dell Streak tablets for a period of 15 days. Moreover, extensive simulations are carried out to learn the performance trend under various network settings, which are not practical to build and evaluate in laboratories.

Existing System:

An automation social network formed by mobile users who share similar interests and connect with one another by exploiting the Bluetooth and wifi connections of their mobile phones or portable tablets is called mason. An individual mason is incomparable with online social networks in terms of the population of the participants, the number of social connection and the amount of social data. It helps to discover and update social links that are not captured by online social networks and allows a user to query localized data such as local knowledge, contacts and expertise, surrounding news and photos or other information that people usually cannot or do not bother to report to online websites.
Disadvantages:

1. Autonomous computing and storage
2. Unknown or inaccurate expertise
3. Opportunistic link connectivity

Proposed System:

We propose a centralized optimization model that offers useful theoretic insights and develop a distributed data query protocol for practical applications. Based on the insight gained from the analysis on mason a distributed data query protocol is proposed aiming to enable highly efficient ad hoc query under practical mason settings. A distributed protocol for the data query in masons is based on two key techniques. First it employs reachable expertise as the routing metric to guide the transmission of query requests. Second it exploits the redundancy in query transmission.

Advantages:

1. The feasibility and efficiency of the data query protocol is increased
2. The Protocol system provides facilates to gain useful empirical insights.
3. Minimize total communication cost.
**System Requirements:**

**Hardware Requirements:**

- **System**: Pentium IV 2.4 GHz.
- **Hard Disk**: 40 GB.
- **Floppy Drive**: 1.44 Mb.
- **Monitor**: 15 VGA Colour.
- **Mouse**: Logitech.
- **Ram**: 512 Mb.

**Software Requirements:**

- **Operating system**: Windows 7.
- **Coding Language**: C#.net, Asp.net
- **IDE**: VisualStudio 2010