Studying Location Sharing on Social Networks with Mobile Experience Sampling

Fehmi Ben Abdesslem, Iain Parris and Tristan Henderson
School of Computer Science, University of St Andrews, UK
{fehmi,ip,tristan}@cs.st-andrews.ac.uk

1. INTRODUCTION

Formal interviews and questionnaires allow to collect self-reported information about users' behaviours when using mobile social applications, but users may forget some details about their experiences or report inaccurate information when answering questionnaires. On the other hand, analysing the information shared on social network sites (SNSes) only allows the examination of those information that have been shared, rather than the information that have not been shared, or the contexts in which users do not wish to share. The Experience Sampling Method (ESM) [3] is a diary method that consists of asking participants to stop at certain times and report about their experiences in real time.

We advocate the use of ESM, possibly in addition to questionnaires and analyses of SNS accounts, for capturing information about mobile users' behaviour *in situ*, when the mobile social application is actually used. In this poster, we describe our testbed using ESM with smartphones to study the behaviour of mobile social application users.

2. EXPERIMENT

Our research is interested in how, when, where and to whom people share their locations with their social network, to better understand their privacy concerns. We go a step further than previous experiments by actually disclosing location to the participants' social network. Moreover, we use a single device to detect location, ask ESM questions, and then collect both ESM answers and detected locations.

Our experiment [1] involved 80 participants sharing their location to their social network with a smartphone over the course of one week. Each participant was given a Nokia N95 8GB smartphone, constantly running a custom application that detects their location using GPS and Wi-Fi scanning. Locations were regularly uploaded to our server through the cellular network, and published on their Facebook SNS account according to their disclosure choices. To this end, participants were asked during a pre-briefing session to set up friend groups on Facebook if these did not already exist (e.g., family, classmates) and default disclosure choices. Signal-contingent ESM questions (at random times of the day) and event-contingent ones (when the server detects a new location) were sent to the participants through an SMS handled and displayed by the application (cf. Figure 1).

3. CHALLENGES

Compared to SNS analysis or traditional surveys, implementing the Experience Sampling Method to study the behaviour of mobile social application users is more complicated and time consuming. Our method requires designing, implementing and deploying an appropriate testbed composed of smartphones to collect data and a server to monitor and store these data.

Figure 1: A participant is asked whether he would share a photograph with his social network friends.

Using a single device to collect data, ask questions and collect answers necessitates the use of more energy than the normal use of such a device to answer calls. In particular, monitoring users' behaviour continuously may involve multiple sensors to be triggered frequently, which may quickly deplete the battery. Hence, managing efficiently the sensors to save energy is an important challenge to collect data on participants' behaviour in their everyday lives. For instance, in our system, we use the accelerometer embedded in most smartphones to detect motion, and switch off the GPS when the participant is not moving to save energy [2].

Other challenges include avoiding the experiment being too intrusive, remotely managing the devices and ethical considerations that must be carefully taken into account.

Acknowledgements

4. REFERENCES

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