

The University of Birmingham
School of Computer Science
MSc in Advanced Computer Science

SECOND SEMESTER MINI-PROJECT

Analysing User Interaction On Mobile Devices

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Abstract

abstract

here.

Keywords

keywords here.

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Chapter 1

Introduction

Over the last two decades the world has been revolutionised by technologies beyond what could have been even imagined a century ago. The digital revolution has effected our lives in every possible aspect, mobility is one of the key components of this revolution and has been incorporated in people's live at a very drastic rate [14-1]. Smart phones and portable devices have become an extension of our persona and have been personalised by us, they reflect our preferences, social choices we make, places we go even the food we prefer to eat. These devices have provided a new meaning to the vision of Mark Wesiser [1] and also a means to achieve more with the network of wireless sensors in the hands of the people providing realtime information [7]. As we can see in section [x], much work has been done in this direction to make the vision a reality, systems that can provide a groundwork to build ubiquitous systems, algorithms to process the data and make inferences have been developed. This is what we are trying to accomplish in our research as well.

A key component of creating a building block for such a ubiquitous and anticipatory system would be to understand why people perform the actions that they perform at the given time [13] and how it be generalised across the masses which would eventually helps improves their lives without and not be a hindrance, anticipating their actions and adapt itself to their needs [12], Tennehouse [12-43] introduces this concept as proactive computing wherein the system would become so familiar with the user that it would be able to perform action on user's behest.

For us to accomplish this we would need a way in which we can monitor what activities people perform, what are the various contexts which effect these actions and to be able to do this on a large scale. Demographics have been proven to be a very important aspect in extracting features of the user as an individual [12, 4] and also as a collective [6, 3].

This whole process involves a lot of complexities surrounding it, firstly there is an issue of a platform to target, there is also a concern that in achieving such a system we might end up violating user's privacy and interfere in his life all of

which among many other are once we address in this research.

1.1 Context

To understand what are the various circumstances under which the user takes a particular action on the device we analyse the *Context* in which the user reacted in the given way. Context

1.2 Anticipatory System

Chapter 2

Context Sensing Framework

Chapter 3

User Demographics Data Collection Application

Chapter 4

Research Value of Data Collected

Chapter 5

Performance Evaluation

Chapter 6

Negative Aspects

Chapter 7

Related Work

Chapter 8

Future Work

Chapter 9

Conclusion

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Appendix A

Mini-Project Declaration

The University of Birmingham

School of Computer Science

Second Semester Mini-Project: Declaration

1. Project Details

Name: Karthikeya Udupa Kuppar Manjunath

Student number: 1393456

Mini-project title: *Analysing User Web Interaction On Mobile Devices.*

Mini-project supervisor: **Mirco Musolesi** <m.musolesi@cs.bham.ac.uk>

2. Project Description

The following questions should be answered in conjunction with a reading of your programme handbook.

Aim of mini-project	<i>To capture and analyse the way in which the user interacts with his device in relation to his context.</i>
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Objectives to be achieved	<ul style="list-style-type: none">• <i>Development of a methodology to capture user's interaction with his mobile device.</i><ul style="list-style-type: none">• <i>Identifying the URL's being accessed by the user.</i>• <i>Tracking the application's usage by the user.</i>• <i>Identifying the various context's associated with the user during the interaction.</i><ul style="list-style-type: none">• <i>Finding the location of the user when the content was accessed along with time.</i>• <i>Uniquely identifying the user amongst all other users.</i>• <i>Tagging of important location with respect to the user.</i>• <i>Storing and categorisation of the information that is collected from the user.</i><ul style="list-style-type: none">• <i>Identifying the nature of the content on the website.</i>• <i>Identifying the nature of the application that is being used.</i>• <i>Analysing the possible use of such information in development of anticipatory systems.</i>• <i>Literature review of anticipatory systems.</i>
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Project management skills Briefly explain how you will devise a management plan to allow your supervisor to evaluate your progress	<p><i>The initial 4 weeks period would be dedicated to understanding the various possible approaches to collect the various possible information from the user.</i></p> <p><i>A two week period would be to analyse the information to build an effective application for gathering of information (in android platform).</i></p> <p><i>The reminder of the time would be given to analysing the information that has been collected and understanding the possible usage and also in perfection of the application.</i></p> <p><i>To Summarise the plan.</i></p> <ul style="list-style-type: none"> • Week 1-4: Understanding the approaches to extract the various possible information from the user. • Week 5-6: Development of an refined application to collect and display the relevant information. • Week 6-9: Formulating and finalising a report concluding the findings and possible applications of information that was collected.
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Systematic literature skills Briefly explain how you will find previous relevant work	<p><i>The primary source of the previously done relevant work would be through the library and the online research/conference paper archives.</i></p> <p><i>Further information would also be gained by interacting with the various people working in the related fields.</i></p>
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Communication skills What communication skills will you practise during this mini-project?	<p><i>A bi-weekly meeting with the mini-project supervisor to discuss and update the progress of the project with intermediate updates through email.</i></p> <p><i>Email would be used as a primary means to contact the supervisor in case of any requirement of assistance.</i></p>
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3. Project Ethics Self-Assessment Form

Appendix B

Statement of information search strategy

statement of search