Effective Avoidance of Queuing and Analyzing User Behavior using Android

Sudha S

Department of Computer Science, Assistant Professor, Dr.APJ Abdul Kalam Centre for Research,
Adhi College of Engineering and Technology, Chennai, Tamilnadu, India
, sudhatech19@gmail.com

Abstract

Android Application is deployed on the Consumer Phone which is attached with LiFi Hardware via OTG. Every Product is attached with LiFi Module. User will have to show the product in front of the Mobile so that corresponding Product info is automatically updated. This includes Product ID & Cost. LiFi Module is also connected with the Trolley. Android user can pay the bill via mobile phone and the details are updated to the shop server. Shop server communicates to the Gate hardware, where another LiFi is connected. Trolley communicates with the Gate section so that the products are packed safely without standing in the queue. Normal mobile users can place the order via computer & cash is paid on COD mode. User's previous purchase & offers of the day are also analyzed using cloud.

Key words - Android Application, OTG, LiFi, Trolley, COD.

INTRODUCTION

QUEUING is a pervasive phenomenon occurring in public areas such as supermarkets, banks, restaurants, amusement parks, and transportation terminals. People spend a substantial amount of time waiting in lines, and long waiting time brings about awful user experience. People usually want to know more about the waiting lines, e.g., the number of people ahead or waiting time before determining whether to take a line or not. Providing such queuing information helps customers better spend time doing something alternative rather than blindly waiting in line, thereby mitigating their anxiety and improving user experience. In addition, managing queues is important for business since it can help reduce revenue loss and inefficient resource allocation. Therefore, there is a need for a better understanding of emerging trends of the queues in order to not only improve user experience but also benefit business.

Nowadays, mobile phones present an attractive platform for people-centric applications as they integrate a variety of sensors that may make similar observations as human. Most smart phones have built-in sensors that measure motion, orientation, location and various environmental conditions. For sensing and inferring queuing behavior recognition, these sensors are capable of providing raw data with high precision and accuracy. Besides, we observe that people often carry their phones when they are not home and people are willing to obtain queue information if it does not affect the typical usage of their smart phones. This motivates us to use commodity mobile phones to detect queuing and obtain queuing information as a people-centric sensing application. While the idea of using smart phones for queuing detection seems simple, many challenges arise in practice.

LIMITATIONS OF PRIOR WORK

The Queue Sense, a queuing recognition system to assist in a queue management system. Queue Sense consists of clients on smartphones that provide automatic, energy-efficient, and accurate queuing recognition, and a server in the cloud that collects data, identifies multi-queue lines, and provides waiting time estimation [1].

Today's smartphones are programmable and come with a growing set of cheap powerful embedded sensors which are enabling the emergence of personal, group, and community-scale sensing applications. The emerging sensing paradigms, and formulate an architectural framework for number of the open issues and challenges emerging in the new area of mobile phone sensing research [2]. The Emotion Sense, a framework for collecting data in human interaction studies based on mobile phones. Emotion Sense gathers participant's emotions as well as proximity and patterns of conversion by processing the outputs from the sensors of off-the-shelf smartphones [3].

Most people spend more than 90% of their time indoors; indoor air quality (IAQ) influences human health, safety, productivity, and comfort. For IAQ monitoring, MAQS a personalized mobile sensing system. In contrast with existing stationary or outdoor air quality sensing systems, MAQS users carry portable, indoor location tracking sensors that provide personalized IAQ information [4].

System energy models are important for energy optimization and management in the mobile systems. Self-modeling paradigm in which a mobile system automatically generates its energy model without any external assistance. Sesame, leverages the possibility of self-power measurement through the smart battery interface and exploits a suite of novel techniques to achieve rate and accuracy much higher than that of the smart battery interface [5]. Sensor convergence on the mobile phone is spawning a broad base of new and interesting mobile applications. As applications grow in sophistication, raw sensor readings often require classification into more useful application precise high-level data. Unfortunately, traditional classifiers are not built for the challenges of mobile systems: energy, latency, and the dynamics of mobile [6].