

LITREATURE SURVEY

1 TITLE OF THE PAPER:

Development of An Android
Application for Viewing Covid19 Containment Zones
and Monitoring Violators.

Author:

Ranajoy Mallik

Published:

May 11 2020

The World Health Organization has declared the outbreak of the novel corona virus, COVID-19 as pandemic across the world. With its alarming surge of affected cases throughout the world, lockdown and awareness (social distancing, use of masks etc) among people are found to be the only means for restricting the community transmission. In a densely populated country like India, it is very difficult to

prevent the community transmission even during lockdown without social awareness and precautionary measures taken by the people. Recently, several containment zones had been identified throughout the country and divided into red, orange and green zones, respectively. The red zones indicate the infection hotspots, orange zones denote some infection and green zones indicate an area with no infection. This paper mainly focuses on development of an Android application which can inform people of the COVID-19 containment zones and prevent trespassing into these zones. This Android application updates the locations of the areas in a Google map which are identified to be the containment zones. The application also notifies the users if they have entered a containment zone and uploads the user's IMEI number to the online database. With this IMEI number, the police can keep an eye on the people who are frequently violating the lockdown rules. To achieve all these functionalities, many tools and APIs from Google

like Firebase and Geofence are used in this app. Therefore, this application can be used as a tool for creating further social awareness about the arising need of precautionary measures to be taken by the people of India.

A real-time database is created in Google Cloud Firestore which contains all the data related to the containment zones like latitudes, longitude, radius and zone names. Cloud Firestore features a NoSQL, document-oriented database (Firebase Cloud Firestore). There are no tables or rows. Instead, the location data are stored in documents, which are organized into collections. All the containment zones are stored in a collection in which each containment zone is represented as an individual document. Each document has four fields namely “Lat”, “Long”, “location Name” and “radius” for storing latitudes, longitudes, location names and radius, respectively. The Cloud firestore is connected to the android application by registering

the SHA-1 (Secure Hash Algorithm 1) certificate fingerprint of the application in the Firebase project settings. After the database is connected, the location data of the containment zones can be retrieved by the Android application and can be shown in Google map.

2 TITLE OF THE PAPER:

Application of Geofencing Technology

Author :

Natalia Wawrzyniak .

Published:

02-04 June 2016.

In this paper we analyze geofencing technology in inland mobile navigation systems. We describe implementation issues related to proximity analysis used for safety and informational purposes with the usage of geofences. This includes generation of warnings and alarm messages when approaching to navigational hazards. Characteristics of spatial data management in mobile on-water navigation systems are presented. Advantages and disadvantages of applying geofencing technology in spatial analyses are described. Also, we present a case scenario which showcases the benefits of performing automated analyses to mobile user.

3 TITLE OF THE PAPER:

Geofencing-based Auto-Silent Mode Application

Author:

M. S. I. M. Zin, M. F. M. Nurji, A. A. M. Isa,
M. S. M. Isa

The usage of mobile devices such as smartphones and tablets has increased dramatically over the past years. Most of people carry at least one mobile device wherever they go. Mobile devices are becoming really important nowadays because they are usually the main tool for communications. However, sometimes the ringing sound of mobile devices can be a nuisance in certain circumstances such as during an important meeting or inside places that require silence such as library, cinema and prayer area. This problem occurs because most users forgot to switch their mobile device into silent mode. To address the problem, this paper presents a novel concept of

automatically switching mobile devices into silent mode. This concept is developed based on the geofencing technique where a virtual fence will be created around a specific area. Whenever a mobile device crosses the virtual fence into the area, the device will be automatically switched into silent or vibrate mode. The device will be switched back to normal mode once it crosses the virtual fence to exit the area. This is done by utilizing the current location of the user based on the Global Positioning System (GPS) data provided through the device. The advantage of this application over other geofencing applications is that the geofence locations will be preloaded in the application, allowing applications with specific purpose and pre-determined locations to be developed.

The geofencing-based auto-silent mode application for Android is developed using Android Studio Software Development Kit (SDK). Android Studio SDK is used to design the user interface (UI)

and to code the main activity java codes. It also acts as an emulator to test the running project or application without installing the application on an actual device. Android Studio SDK is the official IntegratedDevelopment Environment (IDE) launched by Google, for Android application development.

4 TITLE OF THE PAPER:

Perceiving Lane-Level Moving Vehicle
Danger Regions to Warn Surrounding Drivers and
Pedestrians

Author:

Jesus Corres

Published:

09 Dec 2015

Perceiving the location of dangerous moving vehicles and broadcasting this information to vehicles nearby are essential to achieve active safety in the Internet of Vehicles (IOV). To address this issue, we implement a real-time high-precision lane-level danger region service for moving vehicles. A traditional service depends on static geofencing and fails to deal with dynamic vehicles. To overcome this defect, we devised a new type of IOV service that manages to track dangerous moving vehicles in real time and recognize their danger

regions quickly and accurately. Next, we designed algorithms to distinguish the vehicles in danger regions and broadcast the information to these vehicles. Our system can simultaneously manipulate a mass of danger regions for various dangerous vehicles and broadcast this information to surrounding vehicles at a large scale. This new system was tested in Shanghai, Guangzhou, Wuhan, and other cities; the data analysis is presented in this paper as well. A danger region for vehicles is the region where danger targets are prone to cause accidents. Based on danger regions, we can sort the objects located in this region and push warnings to them. A simple way to define a danger region is to draw a circle around the danger target; however, without considering the road site, this way may push information to vehicles located inside but on a nonadjacent road. Therefore, it is of immense value to define danger region in a more rational way.

5 TITLE OF THE PAPER:

Geofence and Network Proximity

Author:

Dmitry Namiot

Published :

7 Sep 2013

Many of modern location-based services are often based on an area or place as opposed to an accurate determination of the precise location. Geofencing approach is based on the observation that users move from one place to another and then stay at that place for a while. These places can be, for example, commercial properties, homes, office centers and so on. As per geofencing approach they could be described (defined) as some geographic areas bounded by polygons. It assumes users simply move from fence to fence and stay inside fences for a while. In this article we replace geo-based boundaries with network proximity rules.

This new approach let us effectively deploy indoor location based services and provide a significant energy saving for mobile devices comparing with the traditional methods.

6 TITLE OF THE PAPER:

Advantages and Disadvantages of
Geofencing Applications

Author:

Juned Ghanchi

Published:

june 1 2015

Advantages of Geofencing

Geofencing surely is a great technology to drive customers to your business. But sending push notifications randomly you can actually force them to inactivate the Geofencing ability in the app settings. In such cases you are likely to lose contact with customers. Geofencing should be used in a very contextual and relevant way with an objective to add value and deliver better experience.

Geofencing for customers also offers an array of benefits. A customer coming close to a business store can be notified for buying anything that is on sale with some exciting offers. This actually provides

him scope to remain in touch with new offers, freebies and anything that can interest him to buy a product or two. For instance, using a booking app with Geofencing capacity a frequent traveler can actually find help from booking status notifications. So, when effectively used Geofencing can make a win-win situation for both customers and businesses.

Geofencing is also used by businesses to gather customer data to understand their buying capacity, buying motivation and buying habits better.

Gathering large amount of customer data over a period of time you can be make better decisions to target customers in that location. Geofencing can be used as a great apparatus for gathering user and customer information to further process them for business analytics.

As part of enterprise apps Geofencing feature can be effective to monitor workforce movement and activities in a given locality. Through the use of Geofencing the workers movement and recess time can be monitored remotely. Geofencing can easily

offer better control over transport in the time of need.

Finally, Geofencing is really great app feature that can be utilized to enhance security measures in any event or situation. Having a security app with Geofencing capability on your kid's phone you can always keep track of his movement. Similarly at an event security personnel with this feature can easily be moved where they are needed most.

Disadvantages of Geofencing

No great technology ever comes without limitations. So is Geofencing. But obviously, in consideration to the wide range of benefits and utilitarian scopes, there are only few disadvantages of Geofencing.

Geofencing is a technology that requires approval or participation from the user. Naturally, if the feature is not turned on the user device it will not produce any result. The human spirit by nature is antipathetic to any monitoring kind of thing and this makes Geofencing a culprit against privacy. This results in users turning off the feature in most cases.

For producing business intelligence Geofencing is only effective when customer data from other sources are mobilized in unison. So, Geofencing is basically not a very independent technology for gaining quality business intelligence input.

Geofencing in most mobile devices take too much battery life and this makes users turn off the feature. Many users even prefer to avoid apps with Geofencing capability because of this. Furthermore, network capacity, bandwidth, device capacity and battery life remained as the constraints for this technology to function seamlessly across devices and in all situations.

Compared to emerging technologies like Beacon which gives location data even in micro spaces, Geofencing is only limited to fixed radius and is good for large areas like a city. Naturally, for more contextual real time business driving notifications it lacks credibility for business specific use.

7 TITLE OF THE PAPER:

A systematic literature review of actionable alert identification techniques for automated static code analysis

Author:

Laurie Williams

Published:

11 April 2011

Context Automated static analysis (ASA) identifies potential source code anomalies early in the software development lifecycle that could lead to field failures. Excessive alert generation and a large proportion of unimportant or incorrect alerts (unactionable alerts) may cause developers to reject the use of ASA. Techniques that identify anomalies important enough for developers to fix (actionable alerts) may increase the usefulness of ASA in practice. Objective The goal of this work is to synthesize available research results to inform evidence-based selection of actionable alert

identification techniques (AAIT).MethodRelevant studies about AAITs were gathered via a systematic literature review.ResultsWe selected 21 peer-reviewed studies of AAITs. The techniques use alert type selection; contextual information; data fusion; graph theory; machine learning; mathematical and statistical models; or dynamic detection to classify and prioritize actionable alerts. All of the AAITs are evaluated via an example with a variety of evaluation metrics.ConclusionThe selected studies support (with varying strength), the premise that the effective use of ASA is improved by supplementing ASA with an AAIT. Seven of the 21 selected studies reported the precision of the proposed AAITs. The two studies with the highest precision built models using the subject program's history. Precision measures how well a technique identifies true actionable alerts out of all predicted actionable alerts. Precision does not measure the number of actionable alerts missed by an AAIT or how well an AAIT identifies unactionable alerts.

Inconsistent use of evaluation metrics, subject programs, and ASAs in the selected studies preclude meta-analysis and prevent the current results from informing evidence-based selection of an AAIT. We propose building on an actionable alert identification benchmark for comparison and evaluation of AAIT from literature on a standard set of subjects and utilizing a common set of evaluation metrics.

8 TITLE OF THE PAPER:

Towards Smart Notifications using Research in the Large

Author:

Niels Henze

Published:

17 August 2015

Notifications are a core function of current smart devices. They inform users about a variety of events, such as new messages, comments on social networks posts or application updates. As such, notifications are the main mechanisms to proactively communicate with the user. Focusing on individual device types such as PCs and smartphones, previous work showed that notifications can be distractive and disruptive. The ongoing wave of smart devices makes it possible to reach the user through multiple devices at once -- amplifying the effects of notifications. What is

missing is an understanding of notifications in a multi-device environment to enable the smart management of notifications across devices. In this paper we present a system that is able to share notifications across smartphones, tablets, PCs, and smart TVs. It can further reach users through connected devices such as smart watches and smart glasses. The system currently distributes 5.3 million notifications by almost 30,000 users every day. It is not only intended to provide a holistic notification mechanism but also serves us to conduct large scale user studies to gain a deeper understanding of notifications in a multi-device environment.

9 TITLE OF THE PAPER:

Systematic Literature Survey on
Accident Alert & Detection System

Author:

Sharmila Gaikwad

Published:

5 Jul 2017

Till date, there has been a lot of study about predicting a detecting the vehicle accident but there has not been pre intimation to the drivers about the accident. In this project, we propose to overcome the accident. The objective of this paper is to understand the various techniques that have contributed in the curb of accidents especially by preventing and detecting accidents. A study on different proposed methodologies involving various techniques for the stages involved along with their advantages and disadvantages is done which can help in the determination and appropriation of an

efficient, accurate accident alert and detection system. System specifications based on thorough analysis of existing solutions and literature are proposed. Critical analysis and review of the systems that have contributed in accident alert and detection. Now a day's numbers of vehicles are increasing very fast. This is causing a high increase in the number of road accidents due to which people are losing their lives. About 1.2 million people die each year, according to the World Health Organization. Despite contributing just 1% of the world's road vehicles, India is responsible for 16 percent of all road accident deaths. According to a report published in a leading newspaper, the number of people killed in road accidents in India reached an all-time high in 2018, with over 1.51 lakh fatalities, a rise of nearly 3,500 over 2017. The state of Uttar Pradesh had the most road fatalities, followed by Maharashtra and Tamil Nadu. In today's time, we see many people die on the road due to unnoticed road accidents. This is especially common

at night, when contact is limited to phone calls. Accidents are on the rise due to an increase in the number of vehicles on the road without a corresponding increase in the road infrastructure needed to support them. We may not be able to avoid injuries, but we can still rescue victims.

Vehicle collision detection is useful in such situations. Accident detection using smartphones, GSM and GPS software, vehicular ad-hoc networks, and mobile apps are among the systems suggested by various researchers.

10 TITLE OF THE PAPER:

A Literature Review on Impact of
COVID-19 Pandemic on Teaching and Learning

Author:

Sumitr Pokhrel

Published:

January 19, 2021

The COVID-19 pandemic has created the largest disruption of education systems in human history, affecting nearly 1.6 billion learners in more than 200 countries. Closures of schools, institutions and other learning spaces have impacted more than 94% of the world's student population. This has brought far-reaching changes in all aspects of our lives. Social distancing and restrictive movement policies have significantly disturbed traditional educational practices. Reopening of schools after relaxation of restriction is another challenge with many new standard

operating procedures put in place Within a short span of the COVID-19 pandemic, many researchers have shared their works on teaching and learning in different ways. Several schools, colleges and universities have discontinued face-to-face teachings. There is a fear of losing 2020 academic year or even more in the coming future. The need of the hour is to innovate and implement alternative educational system and assessment strategies. The COVID-19 pandemic has provided us with an opportunity to pave the way for introducing digital learning. This article aims to provide a comprehensive report on the impact of the COVID-19 pandemic on online teaching and learning of various papers and indicate the way forward.

11 TITLE OF THE PAPER:

Tracing and mining the covid_19 research literature.

Author:

Alan L. Porter

Published:

18 Oct 2014

The unprecedented, explosive growth of the COVID-19 domain presents challenges to researchers to keep up with research knowledge within the domain. This article profiles this research to help make that knowledge more accessible via overviews and novel categorizations. We provide websites offering means for researchers to probe more deeply to address specific questions. We further probe and reassemble COVID-19 topical content to address research issues concerning topical evolution and emphases on tactical vs. strategic approaches to mitigate this pandemic and

reduce future viral threats. Data suggest that heightened attention to strategic, immunological factors is warranted. Connecting with and transferring in research knowledge from outside the COVID-19 domain demand a viable COVID-19 knowledge model. This study provides complementary topical categorizations to facilitate such modeling to inform future Literature-Based Discovery endeavors.

12 TITLE OF THE PAPER:

COVID-19 Mobile Apps: A Systematic Review of the Literature

Author:

Ido Zamberg

Published:

2020 Dec 9

The COVID-19 outbreak, which first emerged in China, has spread worldwide. On March 11, 2020, the World Health Organization (WHO) declared COVID-19 as a pandemic . The disease has disrupted global trade, employment, and travel, and many governments had to take strict measures to control the spread of the virus and minimize the burden of morbidity and mortality so that health care systems remain functional . In many countries around the world, citizens have been recommended to stay at home and practice social distancing for as

long as possible as a primary measure of preventing the spread of COVID-19.

Although mobile apps are successfully used for managing chronic diseases , the ongoing COVID-19 pandemic has pushed the need for mobile app solutions at the forefront to reduce the risk of cross-contamination caused by close contact .

Mobile technology has been leveraged in a number of ways to control the spread of COVID-19. Mobile apps are accessible, acceptable, and easily adopted, and have the ability to support social distancing efforts. As such, they have been widely developed and implemented during the previous months in an attempt to “flatten the curve” of the increasing number of COVID-19 cases, providing knowledge and information to civilians while attempting to relieve the pressure from health care systems.

Despite increasing reliance on mobile health (mHealth) solutions as part of COVID-19–related

response plans, major knowledge gaps exist about their utility and efficacy during the current pandemic for both health professionals as well as for the general population. To this direction, this systematic review aims to shed light into studies found in the scientific literature on the use and evaluation of mobile apps for the prevention, management, treatment, or follow-up of COVID-19.

13 TITLE OF THE PAPER:

A survey of COVID-19 contact-tracing apps

Author:

Nasro Min-Allah

Published:

2021 Aug 21

Recently, the sudden outbreak of the COVID-19 virus caused a major health crisis by affecting masses around the world. The virus, which is known to be highly contagious, has forced the research community and governments to fight the disease and take prompt actions by applying various strategies to keep the numbers under control. These strategies range from imposing strict social distancing measures, isolating infected cases, and enforcing either a partial or a full lockdown, to mathematical modeling and contact-tracing applications. In this work, we survey the current

Coronavirus is a large group of viruses causing human respiratory infections that might lead to severe diseases. COVID-19 virus, a type of coronavirus, was discovered in 2019 in Wuhan, China . It is mainly transmitted through droplets generated when an infected person coughs, sneezes, or exhales. The outbreak of COVID-19 is affecting communities, businesses, organizations, and the global economy, resulting in shortages of many goods in markets around the world. According to World Health Organization (WHO) reports, this pandemic has triggered an unprecedented need for digital health technology solutions for population screening, tracking the infection, prioritizing the use and allocation of resources, and designing targeted responses . COVID-19 had immense effects on society's health and everyday life. Tasks like attending the workplace or meeting friends somewhere were once unremarkable, but suddenly became difficult without applying precautions advised by WHO, such as social distancing, frequent

hand washing, and wearing masks regularly .

Contact tracing emerged as a public health tool to battle and control the spread of infectious disease by identifying and monitoring people who were in close contact with an infected person. Contact means to be within 1m of a confirmed COVID-19 case for more than 15min, to have physical contact with an infected person, or to provide care for COVID-19 patients without protective equipment within 2 days before the onset of disease and 14 days afterward . In the case of COVID-19, confirmed contacts are required to quarantine for 14 days from the last point of exposure and to be monitored by health officials .

14 TITLE OF THE PAPER:

Acceptability of App-Based Contact
Tracing for COVID-19: Cross-Country Survey Study

Author:

Alex Akinbi

Published:

2020 Aug 28

The COVID-19 pandemic is the greatest public health crisis of the last 100 years. Countries have responded with various levels of lockdown to save lives and stop health systems from being overwhelmed. At the same time, lockdowns entail large socioeconomic costs. One exit strategy under consideration is a mobile phone app that traces the close contacts of those infected with COVID-19. Recent research has demonstrated the theoretical effectiveness of this solution in different disease settings. However, concerns have been raised about such apps because of the potential privacy

implications. This could limit the acceptability of app-based contact tracing in the general population. As the effectiveness of this approach increases strongly with app uptake, it is crucial to understand public support for this intervention. The objective of this study is to investigate the user acceptability of a contact-tracing app in five countries hit by the pandemic. We conducted a largescale, multicountry study to measure public support for the digital contact tracing of COVID-19 infections. We ran anonymous online surveys in France, Germany, Italy, the United Kingdom, and the United States. We measured intentions to use a contact-tracing app across different installation regimes (voluntary installation vs automatic installation by mobile phone providers) and studied how these intentions vary across individuals and countries. We found strong support for the app under both regimes, in all countries, across all subgroups of the population, and irrespective of regional-level COVID-19 mortality rates. We

investigated the main factors that may hinder or facilitate uptake and found that concerns about cybersecurity and privacy, together with a lack of trust in the government, are the main barriers to adoption. Epidemiological evidence shows that app-based contact tracing can suppress the spread of COVID-19 if a high enough proportion of the population uses the app and that it can still reduce the number of infections if uptake is moderate. Our findings show that the willingness to install the app is very high. The available evidence suggests that app-based contact tracing may be a viable approach to control the diffusion of COVID-19.