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VIRTUAL MOBILE PHONE

Sanskruti Deshpande

Abstract: - Virtual mobile phone systems, also known as virtual phones or virtual SIMs, represent a paradigm shift in tele communications technology. This resear ch paper aims to explore the concept of virtual mobile phones, their underlying technology, potential applications, and associated challenges. The paper begins with an overview of virtual mobile phone systems, detailing their definition, functionality, and architecture. It then delves into the various benefits and applications of virtual phones across different sectors, including telecommuni cations, business, and personal use. Furthermore, the paper discusses the challenges and limitations associated with virtual mobile phone systems, such as security concerns, regulatory issues, and interoperability challenges. Finally, it concludes with insights into the future prospects of virtual phones and reco mmendations for further research in this rapidly evolving field.

Keywords: - mobile phone, Virtual SIM, Telecommunications,Technology, Challenges, Applications

I. INTRODUCTION

Even though digital technologies have become more advanced in recent times and allowed for the development of social networking sites, computer software applications, and emails, research findings have shown that phone calls and text messages still represent the greatest proportions of mobile data usage. Statist, a German company specializing in market and consumer data, estimated that the global number of mobile subscriptions would exceed 8 billion as of 2020. Whenever mobile phone users initiate an activity (e.g., calling, texting, and connecting to the Internet), this action is recorded by the mobile network operator. The information saved includes such details as each call's duration, timestamp, and location at which the interaction started. When considering theaforementioned points along with the mobile subscription figure, it could be concluded that tremendous amounts of mobile phone data are generated every day.

Maintaining such rich data, which comprise the details of individuals' behaviours and activities is advantageous in the sense that human communication behaviour and mobility patterns can be studied at a low cost. The accessibility of this data has been reflected in various studies and disciplines over the years in terms of the ubiquitous use of mobile phone data .For instance, publications have focused on urban sensing, safety, health, emergencies, transportation planning, and criminology. Mobile phone data are log files collected from the users by mobile network operators during the service provision process. They contain all of the interactions that the user has initiated with the network, whether actively or passively. They also contain the details of each of these interactions, such as the phone numbers of the caller and receiver, the timestamp, and the duration and location of the interaction. Every telecommunicat ions service provider records users' interactions with the cellular network whenever they engage in an activity on their mobile devices; here, the data are recorded in the service provider's databas

II. OBJECTIVES

The main objective of this Review is to analyse the Research paper and review on their ideas and innovation as how much is their efficient and how can the product created by them be developed even more. Also, the perspective of the people as what they want for this product. The objective of virtual smartphone is to provide access to digital devices virtually with the help of gesture-based interaction on the user palm or hand. Virtual smartphone provides transfer of data from user to user or from user digital devices without need of any platform or platform dependency.

III. Survey Analysis

Limited types of reviews and survey articles related to mobile phone data have summarized applications in the mobile phone data domain. Notably, Refs. presented comprehensive surveys about different applications of mobile phone data. Blonde et al. reviewed social network applications that can be derived from mobile phone data in various disciplines and domains, such as social relationships, urban sensing, epidemics, public transportation, data protection, and criminology, with a major focus on studies that construct social networks according to communications behaviour. Calabrese et al. presented a comprehensive review of mobile phone data applications in the urban sensing domain by discussing the different types of mobile phone datasets and processing techniques that have been created in this domain. Okmi et al. presented surveys about different methods, characteristics, and features usedfor assessing and predicting human behavio urs in various domains such as urban sensing, criminology, transportation, and health. Bhattacharya and Kaski reviewed the human social network application, one of the social network applications in the mobile phone data domain. Ghahramani et al. reviewed another survey paper about mobile phone data in the urban sensing domain. The authors presented a survey of the techniques and methods that have been used with mobile phone data in urban sensing applications, such as urban planning and public safety, by discussing the strengths and weaknesses of various approaches and comparing their advant ages anddisadvantages with those of other mobility datasets that capture people's mobilitypatterns, including GPS, handover records, and location data. This study differs from the previous survey framework in the sense that it examines and investigates various processing techniques and analytical perspectives that have been builtbased on mobile phone data at various levels to capture many aspects of human behaviours. These analytical perspectives, such as human mobility patterns, communication behaviours, social interactions, and mobile phone usage activities, have been built on multiple spatiotemporal and call characteristics extracted from mobile phone data. Even though Blondel et al. aimed to review social network applications built on analysing human social interactions that can be derived from mobile phone data and Calabrese et al. presented a survey of urban sensing applications that are built on analysing mobility patterns, knowledge about the use of mobile phone data in crime applications is still lacking. Thus, this study is the first to review the research focused on human mobility patterns, social interactions, and

communication behaviours in crime applications and urban sensing applications. Figure illustrates the multiple analytical perspectives and applications that this study has investigated and evaluated. The primary contribution of this systematic literature review is to provide a comprehensive overview of the applications of mobile phone data in crime-control research. To achieve this goal, a thorough search of eight top scientific databases was performed, and 107 primary studies that met the study's scope and criteria were retrieved

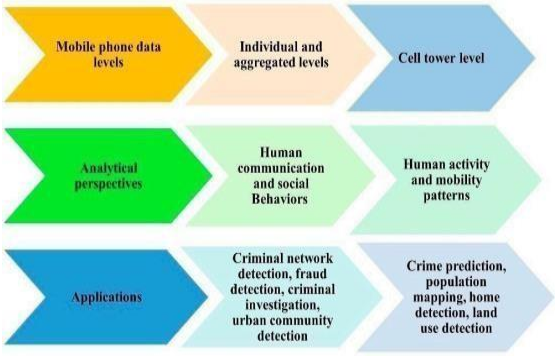
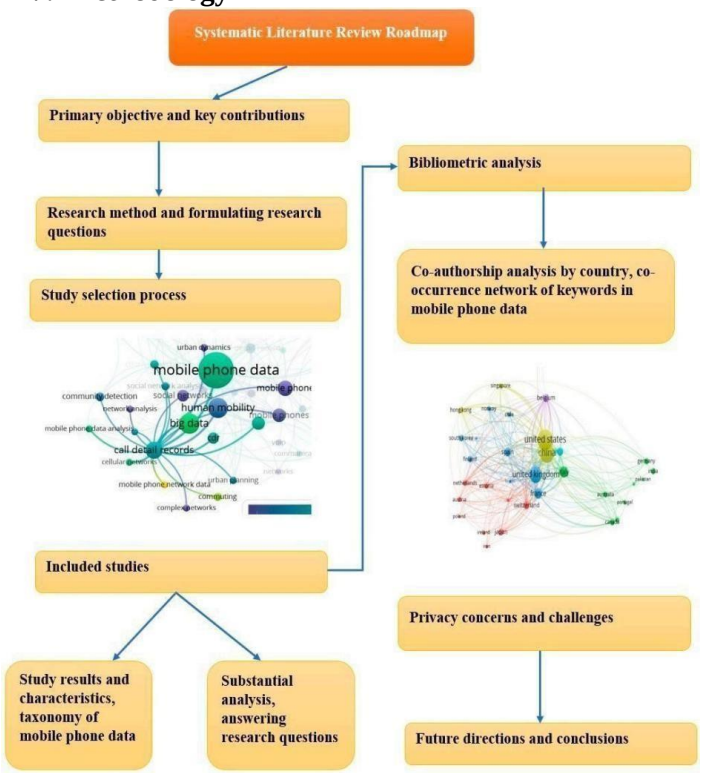


Figure 1. Multiple analytical perspectives and applications based on mobile phone data at various levels capture aspects of human behaviours.

This study involved four steps. The first was to extensively and systematically review the current state of mobile phone data use in crime applications, especially in those involving the identification and detection of criminals and the prediction of crimes. The second step was to investigate empirical research using mobile phone data to predict human behaviour and mobility patterns in urban sensing applications. The third step involved providing a taxonomy for the final dataset of articles based on the scientific approach used and the research questions answered. The last step was to point out the potential challenges faced by this body of literature's state-of-the-art techniques and to provide potential directions for future research.

IV. Methodology



This section outlines the research methodology used for the study. A systematic literature review was conducted by adopting Kitchenham's guidelines for search processes, inclusion and exclusion criteria, and data extraction. This study follows the reporting guidelines of "PRISMA" which consist of a 27-item checklist and a 4-phase flow diagram for the selection of papers. The PRISMA statement by Liberate et al. was used for the study selection process. This study also performed a bibliometric analysis along with the SLR to provide more thorough insights into the topic. Figure shows the roadmap of the SLR, which clarified the planning of the review regarding the following points: the formulation of research questions, the study selection process, eligibility criteria (inclusion and exclusion criteria), biometrics and data extraction and synthesis strategies, study taxonomies, research questions, and future work. The systematic literature review road map begins with defining the main contributions andobjectives of the review to allow the formulation of the research

questions needed to achieve the study objectives. To answer these questions, a systematic review and biometric analysis were conducted to provide a thorough analysis of the topic. In the next stage, the studies were summarized, and a taxonomy based on the scientifific approach was produced. This taxonomy helped to answer the research questions while establishing the current state of the research trends and applications of mobile phone data. In the final step of the road map, study limitations and future work werediscussed.

V. RESULTS

This section presents a summary of the results obtained from the study selection process and includes details about the search results, the distribution of mobile phone data types, and a visualization of the cooccurrence of keywords.
The distribution of publication type, pub lisher'slocations, most cited publications, distribution of analysis perspectives, and publication years are also provided.

The purpose of this research is to identify the impact of smartphones on the student's Academic performance of Iran University North Campus Karachi and for that we have observed the relationships and linkages between Smartphone addictions, Smartphone self efficacy, behavioural intention and interaction competency by providing the relevant evidences. As in youth, Smartphone addiction is getting higher due to over dependency on technology in every aspect, therefore it is required to have consistent and complete research of whether Smartphone addiction is beneficial for the students or it influences negatively on their Academic performance. Smartphone addiction does have positive influence on satisfaction in life but negative impact on Academic performance. In this research we have used correlation design because we have studied relationship between smartphone Self efficacy (SSE), Interaction competency (IC), Behavioural intention (BI) and Academic performance (AP). This design tells us how much independent variables (SSE, IC and BI) impact on dependent variable (AA) From the above analysis of data and after thoroughly examining the statistics, the study shows that behavioural intention of smart phones has a positive effect, which is in fact, impacting Smartphone addiction on academic performance of college students. It also shows there is a strong significant positive impact of behavioural intention of smartphones on the Academic performan ce of students. Regression analysis predicts that strength of relationship between independent (SSE, IC and BI) and dependent variable (AA). Validates Previous studies and suggests measures on factors that improve self-efficacy on students' Academic performance.
The study had three hypothesis discussed below:
H1: Smartphone self efficacy has positive influence on Academic
Performance.
H2: Interaction Competency has positive influence on
Academic performance.
H3: Behavioural Intention has positive influence on Academic performance.
The performance of a person's particular action is affected by his individual Judgment. Self efficacy is affiliated with the perception of having a confidence in Using the technology, an individual possesses if,taking the context of smartphones.
Until and unless the students are not intended to study All in all, according to the respective data collected, behavioural intention has a positive relationship with student's Academic performance as discussed previously.

VI. CONCLUSION

Virtual smartphone is a gesture and computer vision based wearable interface that augments physical world with digital information and provides user the mechanism to interact with information using natural hand gestures. Virtual smartphone is free of physical dependencies and connects physical world to virtual world. Some applications of virtual smartphone. Health Monitoring System Finds information about new device. Connects user with news and weather update.

VII. FURTHER WORK

The number of possible research questions on mobile phone datasets is gigantic. In this last part, we will present one research direction that we believe to be highly important and still not addressed in its most general form. A large number of researches has been conducted on the analysis of social networks, based onCDRs. As it appears from the different publications on this topic, there exist some common features but also many differences in the structure of the constructed network. Recall as simplest example the degree distributions, which show different functional forms for most datasets. These differences may, of course, be linked to cultural differences between the different countries of interest, but there are probably other, quantifiable, reasons. The datasets differ greatly in the market shares of the operators, in the time span of the data collection period, in the size of the network and in the geographical span of the considered country. The method of network construction is also always different and has a tangible impact on the network structure. The use of directed or undirected links, weights and thresholds for removing low-intensity or non-mutual links all greatly impact the structure and hence the statistical features of the obtained network. Hence, we believe that a serious analysis, both on theoretical and on empirical side of the influence of these factors on the general structure of mobile phone networks may lead to a general framework, allowing to interpret differences between results obtained on several datasets with the knowledge of Potential side-effects. This question is closely related to the even more general question of the significance of information provided by CDR data. Recalling what was said in Section 2, CDR Datasets are noisy data, and some links appear there by chance, while other has not been captured in the dataset. It would thus be interesting to question the stability of the obtained results, provided that the real network is different from what has been observed in the data. This links with the work of Gourab [213], who analysed the stability of PageRank under random noise on the network structure. Again, in this framework, no real theoretical result Has yet been achieved, allowing to characterize which results are significant, and which are Not.

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