UPM
UNIVERSITI PUTRA MALAYSIA
BERILMU BERBAKTI

2ND APPLIED INFORMATICS INTERNATIONAL CONFERENCE

AiIC 2020

Abstract

Empowering Applied Informatics Research for Contemporary Technological Trends

AUGUST 12 - 13, 2020

ONLINE CONFERENCE

ABSTRACTS

PID-1

LIBRARIANS SKILLS AND COMPETENCIES FOR SCHOLARLY COMMUNICATION AND REPOSITORY MANAGEMENT IN NIGERIA

Usman Ahmed Adam and Kiran Kaur

The rapid change in scholarly communication and knowledge management has transformed the repository services and imposed new skills and competencies for repository management. This study is posed to assess the skills and competencies of librarians for repository management and scholarly communication in academic institutions in Nigeria. The study adopted a survey research design to assess the skills and competencies of the librarians using NASIG "Core Competencies for Scholarly Communication Librarians" 2017. The sample size of the study comprises 120 librarians across 40 institutions. The findings of the study indicate among others that; 74 % of the librarians have a general understanding of "repository platforms", 54.17% background knowledge of open access movement, and 58% experience in advocacy for open access. At the same time, 83.3% of the librarians can capture, store, and preserve the intellectual output. While 62.3% understand research impact, only 35.8% understand emerging alternatives measures of impact. Although 73.1 % understand Data description and storage, only 20.8% understand text and data mining. The study concluded that awareness, skills, and competencies of the librarians is increasing and recommends among others; setting up a framework for the employment of repository and scholarly communication librarians and training on repository management and scholarly communication.

Keywords: Repository management, Librarians skills, and competencies, Scholarly communication, Open access.

PID-2

DR MINER: AN APPLICATION OF AUTO DETECTING DIABETIC RETINOPATHY USING AUTO COLOUR CORRELOGRAM AND BAGGING

Chew-Wai Yap, Kai-Jie Lim, Keng-Hoong Ng and Kok Chin Khor

An application of auto detecting Diabetic Retinopathy (DR) is indispensable to aid the ophthalmologists in diagnosing patients and also to help relevant organisations in accumulating and analysing data. This project presents DR Miner, an application that is able to extract data from fundus images, identify the symptoms of DR in retina images by using data science approaches, and collect the ophthalmologist's review to improve the detection model in the future. To form the DR data set with binary classes, Auto Colour Correlogram (ACC) was utilised to extract the features from DR images. Over-sampling was then conducted to balance the class distribution in the data set. To reduce the variance of the single learning algorithms, various bagging approaches had been evaluated. It was found that the bagging approaches gave better results than the single learning algorithms in general. Out of all bagging approaches we evaluated, bagged k-nearest neighbours gave the best result. The sensitivity achieved was 85.1%, which met the requirement set by the UK National Institute for Clinical Excellence.

ABSTRACTS

PID-4

CULTIVATING THE IDEAL TEAMWORK THROUGH REAL SOFTWARE DEVELOPMENT PROJECT EXPERIENCE

Salfarina Abdullah, Yusmadi Yah Jusoh, Sazly Anuar and Marzanah A Jabar

It is proven by many studies that software project failures are driven by not just from a single reason but multiple factors, combined and somehow closely related to each other. Basically, failure in projects is when the software developed is not delivered within time, within stipulated budget and of poor quality. All these rooted from poor project management and certainly in agreement with findings reported in the literature. Realizing the importance of this aspect in ensuring software project success, this paper presents our efforts in preparing future software practitioners to become readily equipped especially with teamwork essence through gaining real project work experience with the industry. Emphasizing the application of Teamwork Quality (TWQ) constructs, we invited several software houses to be part of our teaching plan and assigned our students in 12 teams from SSE4301 course to the projects initiated by each company. 14 weeks duration of coursework were given to these students to carry out their projects and at week 15 they delivered a presentation of their product in front of the industrial supervisors, lecturers and the rest of the class for assessment. Our premise is ideal teamwork influences the success of a software project. We believe this small effort capable to instill and cultivate ideal teamwork among the students when dealing with real clients and different set of expectations. Apart from that, we hope the implementation of our teaching plan that incorporated the industry involvement directly would be able to transform and elevate the landscape of teaching and learning we have been practicing for all these years.

PID-9

FUZZY-BASED TRUST MODEL TO EVALUATE CUSTOMER TRUST TOWARDS ONLINE SNSS SELLERS

Ramona Ramli, Asmidar Abu Bakar, Roslan Ismail and Abdul Hadi Mohamad

The rapid growth of Social Networking Sites (SNSs) as business platforms for individual or small sellers recognised trust as the main important role in determining the successful execution of their business operation. Current trust model focused in business sellers by considering website as one of the trust factors. However, these model are not applicable for SNSs environment. Based on the identified factors affecting trust in SNSs environment, this paper proposed a fuzzy-based trust model to evaluate customers‘ trust based on their perception and experiences. The evaluation model was then tested to validate its efficiency in evaluating trust level.

ABSTRACTS

PID-10

EXPLORING THE TREND OF SPATIAL CROWD-SOURCING ASSIGNMENT: A SYSTEMATIC LITERATURE REVIEW

Masnida Hussin, Shirley Salimun, Rohaya Binti Latip and Shamala K. Subramaniam

Today, spatial crowd-sourcing concept has been widely applied in various fields. The increasing of mobile user and adoption of social network has catalyst spatial crowd-sourcing growth. It has made various types of data to be easily collected and transmitted from different geographical location. However, the massive amounts of task in spatial area bring challenges for the online system to manage especially when the task is heterogeneous, and the interactions are dynamic. Such scenario has alerted the researchers to understand different types of information in order to make task assignment reliable and efficient. This study investigates current state of task assignment for spatial crowd-sourcing. It basically, aims to identify several issues like trend in publication and crowd-computing areas that studies task assignment in crowd-sourcing. We used Systematic Literature Review (SLR) method for analyzing the trends and significance of task classification for better dynamic crowd-computing.

PID-11

TRANSLATING IDIOMS USING PARAPHRASING AND RESCORING

Tien Ping Tan and Jia Jun Dong

Idioms are rich multi-word expressions that can be found in many works of literature. The meaning of most idioms cannot be deduced literally. This makes translating idioms challenging. Moreover, the parallel text that contains idioms is limited. As a result, machine translation has difficulty in translating idioms correctly. Paraphrasing is a process to restate the meaning of a text or a passage using different words in the same language. Often, paraphrasing is used to give readers a clearer understanding of the original text. Paraphrasing can be used to assist machine translation in translating idioms. In this article, we attempted to improve the translation of idioms using paraphrasing. An approach that uses paraphrasing with machine translation is proposed.

ABSTRACTS

PID-12

TEST SUITE REDUCTION AND PRIORITIZATION FRAMEWORK IN REGRESSION TESTING

Samaila Musa and Abu Bakar Md Sultan

Most of the regression test case minimization reduced test cases such that the size of the previous test suite is reduced in order to generate new test suite that will guarantee the same software requirements coverage that was achieved before the test suite minimization. The objective of this research is to integrate the idea of minimization and prioritization to present regression test case minimization framework and an algorithm for regression test case reduction and prioritization technique that reduce test cases based on the statements covered by the previous test cases to avoid redundancy of statements. After the reduction of the test cases, we prioritized the test cases based on their weight in order arrange them based on their usefulness The evidence of the effectiveness of the proposed strategy was tested using sample test suite and it was found that it increases average percentage of rate of faults detection. Therefore, the strategy could be in regression test case minimization and prioritization.

PID-13

EVALUATION OF STUDENT'S INTEREST IN LECTURES USING FACIAL EXPRESSION RECOGNITION

Arshaad Mohiadeen, Mohd Azam Osman and Abdullah Zawawi Talib

Interaction between lecturers and students plays a critical role in defining one's view of class. However, with an increasing number of students enrolled in universities every year and limited classroom space available, classrooms are often overcrowded. As a result, it is difficult for lecturers to immediately notice the learning feedback from all students in the classroom on whether or not they are truly able to follow their lectures. In this paper, we propose a tool named Facial Expression Analysis Tool (F.E.A.T.) to help lecturers in universities evaluate the effectiveness of their lecture by evaluating their student's facial expression based on the following 3 facial expressions ,i.e., Bored, Satisfied or Confused. The entire tool utilizes dual CNN to help detect faces and evaluate. F.E.A.T. will be receiving the video feed via an IP camera from the classroom to be analyzed and store the information on a cloud database. The aggregated information from the database is further filtered and the statistical details will be displayed on a visual dashboard on the web. F.E.A.T. 's main goal is to provide useful insights for the lecturers to help them better understand how their students perceive their lectures and improve their teaching approach if required.

ABSTRACTS

PID-14

IoTContact: A STRATEGY FOR PREDICTING CONTAGIOUS IOT NODES IN MITIGATING RANSOMWARE ATTACKS

Mohammed Ibrahim, Mohd Taufik Abdullah, Azizol Abdullah and Thinagaran Perumal

Although the emergence of the Internet of Things (IoT) can facilitate various aspects of people's lives, most IoT devices are vulnerable to ransomware attacks. Ransomware attacks in IoT networks can be more devastating due to its capability to affect billions of interconnected devices. Ransomware can take control of compromised devices or an overall system and allow limited access to user interaction with IoT devices. Hence, there is a need for a strategy that can mitigate and predicts affected IoT devices to conduct in-depth forensic analysis in the event of a ransomware attack. This paper critically analyzes ransomware in IoT platforms and proposes IoTContact. IoTContact can formulate the mathematical model based on the interaction of multihop IoT devices and its relationship with ransomware. Consequently, it is expected that IoTContact can predict and classify affected IoT nodes into susceptible, compromise and resistible from the huge number of connected devices in the event of ransomware attacks. Therefore, the scope and the size of the object of forensic interest can be foreseen in the preparation of an investigation.

PID-15

IDENTIFIED HUMAN FACTORS IN KNOWLEDGE MANAGEMENT IN THE CONTEXT OF KNOWLEDGE SHARING

Julius Olusegun Oyelami and Azleena Mohd Kassim

With the present and advances in information and communication technology (ICT), sharing knowledge across organisations has become easier and feasible. However, knowledge sharing has been a complex phenomenon over the years and identifying factors that influence knowledge sharing (KS) across organisation has becomes crucial and critical in the recent days. This paper review the effect of culture and behavioural differences as a human factors and the knowledge management practices needed to improve KS in organisations. Data were collected from 7 experts and 50 personnel by questionnaire. The result from the statistical data analysis revealed 15.67 and 3.96 as variance and standard deviation on culture respectively. The variance on behaviour is 8 and its standard deviation is 2.83, this indicate weakness in KS therefore, there is a presence of non- sharing culture and behaviour that discourage knowledge sharing. The findings from this pilot study suggest that, a centralised knowledge management structure without effective human practice towards its policies of sharing, coordination and distribution of knowledge in the context of knowledge management towards knowledge sharing, sharing of knowledge might fail. For organisation to avoid knowledge holding (KH) and knowledge risk (KR), a mechanism like knowledge sharing strategic implementation plan (KSSIP) can used as a solution

ABSTRACTS

PID-16

PSYCHOLOGY SOFTWARE TOOL (PST) FOR SPECIFIC LANGUAGE IMPAIRMENT PERSON

Yan Huan Ch'Ng, Mohd Azam Osman and Hui Ying Jong

Specific Language Impairment (SLI) is a disorder categorized by the inability of an individual to master spoken and written language, despite the absence of any apparent handicapping conditions. Many tools have been developed to diagnose or treat SLI, but these tools are largely made up of standalone components which must be utilized separately to obtain sufficient data for the diagnosis and treatment of SLI. Furthermore, some of these components are either very expensive or not widely available. As a result, therapists have faced many inconveniences when trying to treat individuals suffering from SLI. Hence, the development of an integrated, cost-effective Psychology Software Tool (PST) to diagnose and treat SLI is being developed as a solution to counter the inconveniences currently faced by SLI therapists. As a tool by SLI therapists to diagnose and treat SLI within children, the Psychology Software Tool offers standardized questionnaires with a special method to diagnose SLI will be presented in both text and audio, while a webcam will be used to deduce the amount of focus which is given by the patient to comprehend a particular element displayed on the screen. The diagnosis shall take into account the accuracy of answers provided within the questionnaires, the time taken to provide those answers and the aforementioned degree of focus. In terms of SLI treatment, the tool will also provide music therapy for SLI patients to work towards better speech production and comprehension. In short, PST will simplify and enhance the process of diagnosing and treating SLI patients.

PID-22

THE LIMITATIONS OF CROSS-SITE SCRIPTING VULNERABILITIES DETECTION AND REMOVAL TECHNIQUES

Isatou Hydara, Abu Bakar Md Sultan, Hazura Zulzalil and Novia Admodisastro

Web applications have become very important tools in our daily activities as we use them to share and get information, conduct businesses, and interact with family and friends on social media through the Internet. Despite their importance, web applications are plagued with many security vulnerabilities that enable hackers to attack them and compromise user information and privacy. Cross-site scripting vulnerabilities are a type of injection vulnerabilities existing in web applications. They can lead to web application attacks due to lack of proper validation of input data in the affected web pages of an application. Many approaches and techniques have been proposed to mitigate this type of vulnerabilities. However, these solutions have some limitations and cross-site scripting vulnerabilities still remain as a major security problem for web applications. This paper explores and presents the existing techniques for detecting and removing cross-site scripting vulnerabilities in web applications. It gives an overview of cross-site scripting as a security issue in web application and its different types. The advantages as well as the limitations of each techniques are highlighted and discussed. Based on the limitations, some possible future research directions are identified, and recommendations are given as reference for researchers interested in this topic.

ABSTRACTS

PID-23

SELECTION OF TRUSTED ORGANIC FOOD SELLERS ON INSTAGRAM USING FUZZY ANALYTIC HIERARCHY PROCESS

Ramona Ramli, Ahmad Zulqarnain Mohamed Ibrahim, Asmidar Abu Bakar and Abdul Hadi Mohamed

The awareness on healthy lifestyle, particularly in food intake, has resulted in the visibility of organic food products. Most of the organic food products are local-based and home-grown. The popularity of Social Network Sites (SNSs) opens the opportunity for organic food sellers to educate, promote and market their product to customers. However, the credibility of organic food sellers remains as barriers for customer to purchase from them. In this study, organic food sellers selection problem are investigated and fuzzy analytic hierarchy process method are applied to determine the most trusted sellers. Organic food sellers with highest priority weight is selected as trusted sellers. The results of the study are expected to be used by organic food sellers to improve their business operation. At the same time, the results will serve as guidelines for customers to evaluate the trustworthiness of organic food sellers.

PID-24

CLASSIFYING MULTILINGUAL TEXT IN QUALITY ASSURANCE

Sze Pei Tan and Tien Ping Tan

Machine learning systems play an important role in helping and assisting engineers in their daily activities. Many jobs can now be automated, and one of them is in handling and processing customers' complaints before they could proceed with failure investigation. In this paper, we discuss a real-life challenge faced by the manufacturing engineers in a life science multinational company. This paper presents a step by step methodology of multilingual translation and multiclassification of Repair Codes. This solution will allow manufacturing engineers to take advantage of machine learning model to reduce the time taken to manually translate row by row and verify the Repair Codes in the file.

ABSTRACTS

PID-25

USING COMPUTER GAME-BASED STUDENT RESPONSE SYSTEMS TO ENHANCE JAPANESE STUDENTS' ENGLISH LANGUAGE EXPERIENCE

Si Na Kew, Tieng Wei Koh and Tze Wei Liew

Technology has been vastly used in learning context for the purpose of enhancing students' learning performance. The integration of computer in language teaching and learning is growing. In particular, the computer game-based student response systems such as Kahoot! application is implemented by some educators in their teaching classesto improve students' learning experience. Meanwhile, collaborative learning plays an important role in teaching and learning practice. Thus, this paper aims to examine the use of Kahoot! application integrated with collaborative learning approach influences the learning experiences of Japanese students in English language classroom. An experimental research approach was conducted to study how Kahoot! application is affecting the learning experiences of Japenese students. Student engegement observation checklist and reflective journal were used as the research instruments in this study. The population comprised 20 Japanese students who enrolled in English language classroom participated in this experiment. The findings show that Kahoot! integrated with collaborative learning approach made positive impact on students by contributing to better engagement and enhanced learning experience of students. This study can be a reference for instructors who plan to implement game-based student response systems and collaborative learning in English language classroom.

PID-26

PARAPHRASING CHINESE IDIOMS: PARAPHRASE ACQUISITION, REWORDING AND SCORING

Jia Jun Dong and Tien-Ping Tan

Paraphrasing is a process to restate the meaning of a text or a passage using different words in the same language to give a clearer understanding of the original sentence to the readers. Paraphrasing is important in many natural language processing tasks such as plagiarism detection, information retrieval, and machine translation. In this article, we describe our work in paraphrasing Chinese idioms by using the definitions from dictionaries. The definitions of the idioms will be reworded and then scored to find the best paraphrase candidates to be used for the given context. With the proposed approach to paraphrase Chinse idioms in sentences, the BLEU was 75.69%, compared to the baseline approach that was 66.34%.

ABSTRACTS

PID-28

ON UNDERSTANDING THE METHODOLOGIES ADOPTED IN KMS STUDIES WITHIN THE CONTEXT OF QUALITY STRATEGY

Mohammad Fakhrulnizam Mohammad, Rusli Abdullah, Marzanah A Jabar and Rozi Nor Haizan Nor

In the past, quite number of studies have been conducted acknowledges the benefit and imperative roles of knowledge in supporting quality strategies among organizations, as well as enhancing their competitive advantage. In accordance with that, organizations established IT system to facilitate proper dissemination, creation and management of knowledge. Establishment of IT system in managing knowledge or known as knowledge management system (KMS) have indicated on the importance of technical and social aspects inclusion. From the past, various academic studies had been conducted in the establishment of KMS with multiple objectives, strategy and scope. As always, establishment of IT system as a platform for knowledge management such as KMS does require structured and systematic methodology. Moreover, establishment of KMS does not only relies on the technical aspects only, but also from its foundations and social aspects. Hence, the objective of this study is to unwrap the approaches and methodologies that have been conducted by past studies in relation to KMS establishment within the quality context. As such, review of past articles published a decade ago were conducted and analysed. Past articles were retrieved from various established journals such as Emerald, Science Direct, Journal of the Association for Information Systems (AIS), Association for Computing Machinery (ACM) as well as Google Scholar database and was verified with the SCOPUS journal database to ensure its integrity. Review of past articles discovered several findings that contribute to gap fulfilment of the research in future.

PID-29

GREEN SOFTWARE PROCESS ASSESSMENT: A CONCEPTUAL MODEL

Siti Rohana Ahmad Ibrahim, Jamaiah Yahaya and Hasimi Sallehudin

Most of domain such as engineering, education and health are moving toward green through the sustainable development. It aimed to ensure the product are still relevance and applicable used for the next generation. There are three pillars of sustainability dimensions which are economic, social, and environmental. The technical and individual dimensions were added to evaluate the software system. Yet, so much effort is made to achieve the green development that can achieved by reducing waste to preserve the environment. Most studies targeted on green for software product itself and less consideration on green software process. In this study, focus is given to make green in software process activities. Therefore, this paper presents the background on related works, theoretical framework which is based on literature study and the proposed conceptual model of this research. The conceptual model consist of green factors, software process, assessment mechanism and target user. The elements of sustainability and waste reduction elements will be identified further.

ABSTRACTS

PID-35

THE INTERNET OF THINGS READINESS IN PUBLIC ORGANIZATION: DESCRIPTIVE ANALYSIS

Nurazean Maarop, Ganthan Narayana Samy and Norshaliza Kamaruddin

The Internet of Things (IoT) is a system of interrelated computing devices. IoT involves mechanical and digital machines, objects, animals or people that are indicated with unique identifiers and the ability to transfer data over a network without requiring human-to-human as well as human-to-computer interaction. Government of Malaysia in 2015 has introduced the National Internet of Things Strategic Road Map as a way to provide the backbone of modern and smart cities as well to sustain the economic growth. However, the factors influencing IoT readiness in Malaysian organization needs to be further investigated. The purpose of this study is to investigate, identify and propose the readiness factors of IoT implementation. A survey involving a distribution of questionnaire to 30 respondents to get a descriptive indication coupled with interviews with 5 key expert employees from relevant agencies were executed. As a result, there are five factors being proposed and validated descriptively to influence the readiness of implementing IoT in Malaysia. These factors are Human Perspective, Technology Perspective, Governance and Management Perspective, Security Perspective and Policy and Law Perspective. For future work, this study suggest to include more participants using power statistics, hypothetical model testing and expand the questionnaire to other organization in order to develop a more comprehensive result of IoT readiness in Malaysia.

PID-36

AMBIDETECT: AN AMBIGUOUS SOFTWARE REQUIREMENTS SPECIFICATION DETECTION TOOL

Mohd Hafeez Osman and Mohd Firdaus Zahrin

Software Requirements Specification (SRS) is considered the most important artifact in the software development lifecycle because all phases in the software development are influenced by this artifact. Defects in requirements may influence the development activities and higher the risk of time and cost overrun of the project. Researchers have shown that finding defects in the initial software development phase is crucial since the defect that found late is more expensive than if it was found early. Hence, our main goal is to provide a platform for requirement engineers to produce better requirement specifications. We propose AmbiDetect, a (prototype) tool that provides an automated approach for detecting ambiguous software requirements specification. AmbiDetect combines text mining and machine learning for ambiguous requirement specification detection. The text mining technique is used for feature extraction and for preparing the training set. The tools ‘learns’ to detect the ambiguous requirement specification by using a machine learning technique. An initial user study has been conducted to validate this approach. The results show that the result produced by the classification model is reasonably acceptable. Even though this (prototype) tool is an early experimental benchmark, we optimist that this tool may contribute to improving the quality of SRS.

ABSTRACTS

PID-37

INFLUENCING FACTORS FOR INTERNET BANKING ADOPTION USING ANALYTICAL HIERARCHY PROCESS (AHP) APPROACH

Khairi Azhar Aziz, Marzanah A. Jabar, Salfarina Abdullah, Rozi Nor Haizan Nor and Nur Ilyana Ismarau Tajuddin

Internet banking is an online financial transaction approach that uses internet as the platform. Customers could perform their transactions anywhere and anytime. Current extensive researches from the literature have analyzed and investigated on various factors related to the internet banking adoption. Drawing from the various theories associated with acceptance model, this paper will combine these various predetermined factors into one model. Analytical Hierarchy Process (AHP), method was adapted in identifying the relevant multiple factors for the model. AHP is the best technique to use for mathematical calculation, to allow decision makers to prioritize their ranking to fit and resolve multiple criteria. The purpose of these paper is to prioritize the influencing factors to use internet banking. Based on the literature review, three main factors namely technical information, website and service availability had been identified as the main construct of the model and the sub factors were communication, responsiveness, privacy, ease of use, security, reliability and efficiency had been proposed into one integrated framework. These factors were identified by using Systematic Literature Review (SLR) methodology. Hence, the paper will deepen the understanding of the specific factors underpinned in the study of internet banking adoption.

PID-38

EXTENDED USER EXPERIENCE MODEL TO SUPPORT WEB ACCESSIBILITY AND EMOTIONAL QUALITIES AMONG VISUALLY IMPAIRED USERS

Azrul Hazri Jantan, Mariam Azwa Yazid and Siti Azreena Mubin

To date, the advancement in mobile applications and Internet technologies have changed the way on how people interact with computer software/application. Information is much easier to accessed, processes can be performed faster, and interaction can be controlled fully by users. This paper will elaborate and discuss the information and interaction processes taken between users and computer software/application according to the existing user experience model. The main objective is to present an extension of user experience model that to support the interaction between users and applications among the disabilities (visually impaired). It will include better technology understanding on both conceptual and interaction properties of the whole application domain and their associations between web accessibility, user experience, and technology acceptance. The proposed model will be focusing on two parts; user experience components, and consequences (outcome). It will be used in further empirical study on modeling the relationships between the application users, user experience, and technology acceptance. We envisage effective and comprehensive design model that could be integrated and provide positive progress from the existing literature findings.

ABSTRACTS

PID-39

LEVERAGING ENTERPRISE ARCHITECTURE FOR DIGITAL TRANSFORMATION ADAPTATION CHALLENGES IN HIGHER EDUCATION INSTITUTIONS

Wan Faezah Abbas, Mohd Naz'Ri Mahrin and Nurazean Maarop

The rapid proliferation and emergence of mobile, digital technologies, smartphone devices, big data, cloud computing and Internet of Things (IoT) have given rise to a new era of Digital Transformation (DT). DT is shifting not only technological advancements but also involves changes to business processes, organization structure, business models, managerial and culture. Higher Education Institution (HEI) are undergoing some forms of DT and is affected by these changes. Technology is changing the way many HEIs operate and to ensure survival, HEI needs to adapt to DT changes. However, HEIs are facing difficulties in adapting to DT. The main objective of this paper is to identify DT adaptation challenges in HEI based on the literature review. Result from the literature review lists the HEI DT adaptation challenges and Enterprise Architecture (EA) is identified as a facilitator and enabler to support DT initiatives.

PID-40

ENHANCING THE TRANSPARENCY OF STUDENT MERIT SYSTEM USING QR CODE TECHNOLOGY: A SMART CAMPUS INITIATIVE

Salfarina Abdullah, Muhammad Azhad Hilmi Muhammad Aiman Hilmi, Sazly Anuar and Masnida Hussin

Technology has led to the utilization of information systems into human daily life activities. Computer systems have helped improve the modern human lifestyle by simplifying and facilitating activities from listening to music, grocery shopping to communicating with peoples across the world. Gearing up to smart campus initiatives, one of the issues to be tackled was the transparency in validating the student's attendance system used in many campuses and university events. The employment of technologies such as QR Code and facial recognition to validate the student's attendance certainly have helped in addressing this issue. In order to ensure the transparency of the existing manual student merit system used in the campus, this paper presents a solution known as CyberScan QR Code for Student Merit System that allows the students to obtain merits by scanning QR codes, as well as allowing student councils to provide merits for any events by generating QR codes. Students can keep track of their current total merit points and the events that they have previously attended so if there are any problems regarding their merits, they can always refer to their history of attended events as evidence. This paperless solution merit system also helps to reduce the usual time taken to calculate a huge amount of merits thus preventing from any miscalculation. Clearly, this initiative creates not just an efficient, transparent service but another greater experience for students to feel connected academically and socially.

ABSTRACTS

PID-42

CONCEPT-BASED RECOMMENDATION SYSTEM FOR FINDING SERENDIPITY

Kodai Tsukahara, Eiji Kamioka and Phan Xuan Tan

Current information recommendation systems obtain users' preferences from Web browsing histories and activities such as purchase of products, and efficiently provide the users with their preferable information. In such a case, however, the same or similar information is always recommended, which is called filter bubble and it decreases the users' satisfaction to the systems. If information recommendation systems could provide users with something surprising and useful as output information, the user's satisfaction to the systems would drastically increase. Therefore, "serendipity" is paid attention to in this research. In this paper, a new information recommendation system using a concept-based information retrieval is proposed to provide the users with serendipitous information. In this system, concepts which describe features or roles of items are input instead of the items themselves, and information which can meet the concepts are output as candidates of serendipitous information. The serendipitous information is extracted from the output information using the criteria which are the indexes of serendipity defined in this research. Through the evaluation experiment, it is revealed that the proposed system achieves the accuracy of 70% for the serendipitous information determination and the accuracy of 100% for the information retrieval, which are satisfactory for this research purpose.

PID-43

TOWARDS INTEGRATING SIX SIGMA APPROACH: SERVICE LEVEL AGREEMENT MEASUREMENT AND MONITORING (A MALAYSIAN IT OUTSOURCING CASE STUDY)

Whee Yen Wong, Chan Wai Lee, Kim Yeow Tshai and Toong Hai Sam

Service Level Agreements (SLAs) are critical for outsourcing and technological related vendors companies. SLAs are the key requirements for outsourcing implementation and deployment as well as are the key differentiator in the service provider’s offerings industry. Over time, SLAs drive behaviors delivering a minimum level of service to the provider resultant in limited room in innovation and improvement in SLA arrangement and SLA contract renewal. As such, outsourcing companies may deem become a commodity, lacking strategic, innovative and value-added partner to the business. In long run, outsourcing companies face challenges with rapidly changing business requirements that drives business agility to stay competitive. The paper attempts to investigate a vendor IT Service Company accountable for continuous measurement and reporting of SLA activities where agreed-on service levels face challenges. This paper aims to evaluate the practical applicability of Six Sigma approach (i.e. DMAIC (Define, Measure, Analyze, Improve and Control)) as a result of root-cause-analysis; where everyone working on the problem(s) stays focus, drive towards a root cause and eventually address the problem directly. The result of this case study revealed how Six Sigma approach has successfully improve the SLA achievements by identifying the significant factors contributing remedies or penalties towards SLA measurements.

ABSTRACTS

PID-45

THE DEVELOPMENT OF MOBILE AUGMENTED REALITY APPLICATION TO FACILITATE HIGH SCHOOL STUDENTS WITH VARIOUS LEARNING STRATEGIES IN LEARNING HISTORY

Azrina Kamaruddin, Jin-Zhi Low and Muhammed Dzulkiflee Hamzah

Augmented Reality is a demanding feature that widely embeds in our mobile devices. With the current mobile networks this feature will be more and increasingly accessible in many areas such as education. The current scenario in learning history was bored and unattractive to high school students. In addition, the current history text and additional books are very textual and less pictures. The aim of this paper is to describe the mapping of the different learning styles that the students employed onto the AR mobile application in learning history. The mapping should facilitate all learning styles so that the history learning becomes more interactive and engaging

PID-46

CLIMATE CHANGE: CLIMATE LITERACY AND RESPONSE AMONG HIGHER EDUCATION POPULATION

Wan Nur Syamilah Wan Ali and Nasuha Lee Abdullah

Climate change is a serious issue that not only affects Malaysia but also worldwide. Previous studies found that climate literacy may have a significant relationship with climate response while the level of education does not affect climate literacy. Thus, this study was conducted to gauge the level of climate literacy as well as their responses for Universiti Sains Malaysia students. A mobile climate application named SmaCli is proposed at the end of this study to address the issue of negative response towards climate change. The features of SmaCli are based on responses solicited from the questionnaire and the aim is to enhance climate literacy and encourage positive responses. However, for this paper, the prototype of the application is not included. A total of 196 responses were collected which consists of postgraduate and undergraduate students. The study found that 66% of the respondents have high literacy on climate change, level of education has no significant relationship with climate literacy level, mitigation act (climate response) showed a significant relationship with climate literacy level, and adaptation act (climate response) has no significant relationship with climate literacy. Hence, a concerted effort is still needed to improve climate literacy levels to ensure a positive climate response.

ABSTRACTS

PID-47

DESIGN AND EVALUATION OF USER INTERFACE DESIGN OF MOBILE HEART MONITORING APPLICATION

Muhammad Sobri, Mohamad Taha Ijab and Norshita Mat Nayan

Many mobile health applications including mobile heart monitoring applications are available on Apple App Store, and Google Play Store. However, when the user feels dissatisfied with the user interface design of the mobile heart monitoring application, it impacts user satisfaction level to the extent that the users do not use it anymore. User satisfaction level is very important factor in usability to identify a mobile heart monitoring application which is pleasant, and comfortable for continuous use. This study recruited four cardiologists in a hospital in Palembang, Indonesia for evaluating the user interface design of mobile heart monitoring prototype called HeartM. The prototype has several features including measuring patient's heart rate and blood pressure rate, treatment record, forum, and chat to ease communication between heart patients and their cardiologist. The focus of the user interface design evaluation are on content, visual and navigation aspects. This paper contributes to user interface designers and design recommendations particularly for mobile heart monitoring applications.

PID-48

AN APPROACH FOR SELECTING THE SUITABLE REQUIREMENT ELICITATION TECHNIQUE

Jamilah Din, Ibrahim Hassan Hussein, Salmi Baharom and Muhammed Basheer Jasser

Requirements elicitation is an initial phase in software development. In this phase, requirements engineers gather the requirements of the software under development from users, stakeholders and customers. The techniques used for gathering requirements have a big influence on the quality of requirements and the success of project. Many requirements elicitation techniques (RET) such as: interview, prototype and observation can be used for requirements gathering process. However, one technique is not suitable for all different projects. Usually requirement engineers select the RET based on personal preferences and assumptions such as; this is the only technique which they know. However, this subjective decision can result in using inappropriate RET. Using unsuitable RET may decrease the quality of elicited requirements. Even though researchers have proposed many techniques for elicitation, one of the challenging issues is to choose the suitable RET for specific situations. The purpose of this paper is to help requirement engineers to choose suitable RET. To do that firstly, we identify factors that affect in selecting RET. Secondly, an approach to select suitable RET is proposed. Thirdly, a prototype is developed to help requirements engineers and to ease the process of selecting elicitation technique. Lastly, experts are invited to evaluate the proposed approach and the prototype.

ABSTRACTS

PID-49

USER PERSONAS: DISCOVERING FACTORS THAT INFLUENCE GENZ'S SEDENTARY LIFESTYLE FOR THE DEVELOPMENT OF A MOBILE EXERGAME DESIGN MODEL

Hasdina Lynn Hashim, Azrina Kamaruddin, Azrul Hazri Jantan and Puteri Suhaiza Sulaiman

The use of mobile devices for youths in tertiary education is found to be linked to sedentary behaviour. This paper attempts to create user personas on these youths and finding the factors that affect their sedentary lifestyles, which could assist the development of a mobile exergame design model. An online survey consisting of sociodemographic and IPAQ questionnaires was used to collect data on students in a public university. Three user personas were derived, which are based on their weekly physical activity levels: Low, Moderate, and High. It was found that income status, time management, daily smartphone usage, and fitness self-rating has a direct relationship with physical activity levels. The user personas share a common factor in that smartphone usage is essential to manage the youths' daily activities regardless of their physical activities. The derived user personas would assist future mobile exergame design model development by concentrating on the influencing factors from the Low and Moderate physical activity level groups.

PID-50

AN ENHANCED MODEL FOR E-SERVICE QUALITY OF MOBILE BANKING

Jude N. Owuamanam, Salfarina Abdullah, Yusmadi Yah Jusoh and Noraini Che Pa

The increase growth in mobile device users and the rapid drop in conventional and mobile data charges have given way for a provision of banking services and mobile banking to be precise. Banks are now extending their services from traditional way of banking to a self-service system. Recently, mobile banking has been growing exponentially but there is still lack of confidence by the users because of low e-service quality of mobile banking. Researchers have done many works on mobile banking but were focused more on adoption and user intentions which contributes to the marketing and promotion of mobile banking. Mobile banking has some specific characteristic which makes it different from other web based e-service, so the previous studies lack specific in-depth of e-service quality of mobile banking such as failure to define the e-service quality of mobile banking and identification of mobile banking dimensions. This study was to identify the dimensions and attributes of mobile banking that have been given less attention, and proposed an enhanced model for the e-service quality of mobile banking.

ABSTRACTS

PID-51

nCODET: A TOOL FOR NOVICE DEVELOPER TO DETECT UNTESTABLE CODE

Saiful Bahri Hisamudin, Salmi Baharom and Jamilah Din

Uncontrollability is troublesome for unit testing. It causes a non-deterministic behavior where the same input can produce different results based on different executions. The non-deterministic characteristic makes it impossible to test the internal logic of a method because it suffers from tight coupling, a single responsibility principle violation, being an untestable code, being non-reusable or hard to maintain. This paper describes a tool, namely the non-deterministic Code Detection Tool (nCODET) that aims to assist novice developers to write testable codes by avoiding the non-deterministic characteristic in their codes. Our research focuses on the unit testability of classes; Particularly the effort involved in constructing unit test cases.

PID-52

THE STUDY OF DIGITAL IDENTITY OF MOBILE USERS BASED ON ANDROID DATASET

Azizul Rahman Mohd Shariff

A smartphone is said to be an extension of a mobile user's oneself. It is the ultimate mobile device today for humans, the one device that humans cannot avoid using, leave behind when on the move and becomes a necessity to own one. It allows humans to communicate and perform many daily person-al tasks. Smartphones continue to evolve embedding advanced device tech-nologies, sophisticated processes and applications. This symbiotic combina-tion generates immense data on a temporal and spatial scale for a mobile us-er. These data represent the behaviors of a mobile user, which is unique. In the digital mobile realm, there exists some digital identity about a mobile us-er, what can be thought as the mobile user's digital pheromone. This data mining study uses Android Device Analyzer dataset consists of Battery Lev-el, Battery Temperature, Battery Volt and App variables to understand the levels of volatility and their correlation measures. The finding shows there are wide dispersions for Battery Level, Battery Temp, Battery Volt and no statistical relationship exists for Battery Volt/App and Battery Temp/App cor-relation. Using a simple inequality that only a limited number of mobile users are contained within one standard deviation from the population mean, a smaller set of users exists. The results show that 'uniqueness' percentage of a mobile user increased from 61.7% and 66.7% for single variable to 81.7% in multi-variate condition, to 100% using the simple inequality. Ultimately, this uniqueness indicates that a mobile user can have a unique identity, in the dig-ital mobile world from the daily mobile data generated

ABSTRACTS

PID-53

EXPERTS REVIEW ON FACTORS TO CONSIDER WHEN DESIGNING VIRTUAL ENVIRONMENT FOR STRESS THERAPY

Farhah Amaliya Zaharuddin, Nazrita Ibrahim and Azmi Mohd Yusof

Virtual reality (VR) based therapy is an alternative technique available for stress treatment. In this technique, virtual reality system is used as a tool to assist users to reduce stress and induce relaxation. Many previous literatures published have acknowledged the effectiveness of virtual reality based therapy in reducing stress as compared to other techniques such as breathing exercise and imagination. However, previous studies available only focused on proving the effectiveness of virtual reality application in reducing stress, but are lacking discussions on factors that should be taken into consideration when designing its virtual environment. In previous study, initial framework containing possible factors to be considered when designing virtual environment for stress therapy has been proposed. In this paper, an expert review was conducted to validate the usefulness of the identified factors. Findings from the validation process has resulted in the improved version of the initial framework and their application in virtual environment.

PID-54

EMBEDDING CROWD-VOTE AS KNOWLEDGE SOURCE TO SUPPORT DECISION MAKING ON UNIVERSITY PROGRAM SELECTION

Sarerusaenye Ismail and Shahrinaz Ismail

Crowd-vote is implemented as part of a university program recommendation system, complementing the aspect of knowledge management. The recommendation system is developed to support freshmen students' decision making during program selection and first time of enrolment. The challenges of decision-making among students is formed by many influential factors like family, agents, universities and others. Popular decision making models include rational, intuitive, among others. Rational models have series of sequential steps that involve a thinking process, while intuitive models are more on people experiences and recognition of the pattern based on what people believe and think how it will work. Other models attempt to combine both rational and intuitive aspects of decision. The challenge is foreseen in capturing experts' opinion as part of students' decision making, since experts are the good source of knowledge to strengthen the process. A prototype is developed for this purpose and constructive feedback from experts and students were collected to examine the significant use of crowd-vote. The objectives of this paper are to investigate the use of crowd-vote in leveraging decision making, and to evaluate the implementation of crowd-vote in supporting decision making during program selection. The results from expert opinions and students' evaluation are discussed.

ABSTRACTS

PID-55

TINA: EMPOWERMENT BASED DESIGN FOR DOMESTIC VIOLENCE SURVIVORS MOBILE APPLICATION

Emma Nuraihan Mior Ibrahim, Azurawati Abdul Halim and Fariza Hanis Abdul Razak

This paper presents a preliminary work on empowerment-based design mobile application prototype for those living with or identified as domestic violence (DV) survivors in Malaysia. By using Design Thinking method, we developed a mobile application which acts as a social support platform for DV survivors especially to those who are reluctant or unwilling to seek help. The study was conducted with Women's Aid Organization (WAO), an NGO responsible for the provision of aid to domestic violence survivors in Malaysia. The aim of this project is to enhance TINA (Think I Need Aid) services provided by WAO. For the prototype design, the study proposed five (5) categories of empowerment features which include (i) screening and assessment, (ii) emergency response (iii) evidence reporting (iv) preventative and (v) self-efficacy and empowerment. The prototype was then tested and evaluated in terms of its functionality and practicality with 10 participants representing various stakeholders. A qualitative analysis was used to analyse the participant feedback. The paper concluded with discussion of the results and future works.

PID-56

PROJECT SCHEDULING MANAGEMENT IN THE SOFFTWARE INDUSTRY

Rozi Nor Haizan Nor, Yusmadi Yah Jusoh, Farihan Che Mohamed, Sawalrudin Abu Hassan and Mohd Fahmi Mohd Shari

Once project planning is completed, the next step is to schedule the project according to some timeline. This requires knowledge of the activities, the necessary depth of the activities, the dependencies between the activities, and the duration of the activities. Within the category of project scheduling problems, there is a specific problem within the software industry referred to as the software project scheduling problem. Creating a realistic project schedule is one of the biggest challenges a project manager faces. There are some common problems with project scheduling that can be impact towards project delay or performance: Assigning Resource or Resource Constraint, Managing the Unknown or Managing Change and Estimating Task Duration. These 3 factor and causes contributing to project scheduling problem. The impact of resource constraint causes towards be impact towards project delay or performance. To achieve this goal, the survey has been conducted. Finally, the results of the surveys are presented in order to see which commons problems are the most happening and really effected project scheduling.

ABSTRACTS

PID-59

LABORATORY INSTRUMENTS' PRODUCED SCIENTIFIC DATA STANDARDIZATION THROUGH THE USE OF METADATA

Nur Adila Azram and Rodziah Atan

The progression of scientific data from various laboratory instruments is increasing these days. As different laboratory instruments hold different structures and formats of data, it became a concern in the management and analysis of data because of the heterogeneity of data structure and format. This paper offered a metadata structure to standardize the laboratory instruments' -produced scientific data to attain a standard structure and format. This paper contains explanation regarding the methodology and the use of proposed metadata structure, before summarizing the implementation and its related result analysis. The proposed metadata structure extraction shows promising results based on conducted evaluation and validation.

PID-60

TOWARDS ADOPTING SOFTWARE QUALITY ASSURANCE IN AGILE DEVELOPMENT METHODOLOGY

Saadah Hassan and Rosnani Shuib

In agile software development methodology, software product is developed through a few iterations and delivered incrementally. In spite of the known benefits of the agile methodology, yet issue still exists in developing high-quality software product using this methodology. Hence, quality assurance mechanism should be in place in agile development to ensure quality adherence to the software product. Particularly, in each iteration where we need to assure that the product increment meets the requirements as well as to decide the requirements for next increment and iteration planning. However, taking up quality assurance in agile software development is not an easy task as it has its own manifesto and principles that need to be met. Thus, this paper highlights the issues and challenges towards adopting quality assurance in agile development methodology. Subsequently, few measures are identified concerning the issues. The discussion in this paper is based on Scrum case, yet still relevant to other types of agile methodologies.

ABSTRACTS

PID-62

MOBILE TIME TRACKER IN TRANSPORTATION SERVICE: A SURVEY

Chee Ling Thong, Lee Yen Chaw, Su Mon Chit and Chiw Yi Lee

Bus delay in transportation service is a common issue to be addressed. This issue is verified in a preliminary study conducted earlier among the bus riders. With the rapid growth of mobile technology particularly in mobile application development, transportation service provider today is able to address delay issue in mobile application. In this study, a GPS based mobile application (App) is proposed to estimate time arrival (ETA) of buses and an user acceptance test is used to verify the usability of the App. 76 bus riders have completed bus App testing and follow by a survey. The overall results show it is usable and able to solve issue of bus delay and long waiting time. In future work, mobile time trackers associate with other ETA prediction models will be explored and issues such as ETA accuracy will also be addressed.

PID-64

KELANTAN AND SARAWAK MALAY DIALECTS: PARALLEL DIALECT TEXT COLLECTION AND ALIGNMENT USING HYBRID DISTANCE-STATISTICAL-BASED PHRASE ALIGNMENT ALGORITHM

Jasmina Khaw Yen Min, Tien-Ping Tan and Bali Ranaivo-Malançon

Parallel texts corpora are essential resources in linguistics and natural language processing, especially in translation and multilingual information retrieval. The publicly available parallel text corpora are limited to certain genres, types and domains. Furthermore, the parallel dialect text is scarce, even though they are important in the analysis and study of a dialect. Collecting parallel dialect text is challenging because dialects typically appear in the form of speech and very limited dialectic texts exist. Moreover, there is no standard orthography in most dialects. The contributions of this paper are threefold. First, the paper describes a methodology in acquiring a parallel text corpus of Standard Malay and Malay dialects, particularly Kelantan Malay and Sarawak Malay. Second, we propose a hybrid of distance-based and statistical-based alignment algorithm to align words and phrases of the parallel text. The results show that the precision and recall values of the proposed alignment algorithm are more than 95% and better than the state-of-the-art GIZA++. Third, the alignment obtained were compared to find out the lexical similarities and differences between Standard Malay and the two studied Malay dialects.

ABSTRACTS

PID-65

CODE ANALYSIS TOOL TO DETECT EXTRACT CLASS REFACTORING ACTIVITY IN VB.NET CLASSES

Khaironi Yatim Sharif, Mohd Hafeez Osman and Mustafa G H Muftah

Code changes due to software change requests and bug fixing are inevitable in software lifecycle. The code modification may slowly deviate the code structure from its original structure that leads to unreadable code. Even though the code structure does not affect the software behaviour, it affects the code understandability and maintainability of software. Code refactoring is typically conducted to enhance the code structure; however, this task needs a lot of developers' effort. Thus, this paper aims at developing a tool that will help programmers identify possible code refactoring. We consider two aspects of refactoring: (i) refactoring activities, and (ii) refactoring prediction model. In terms of refactoring activity, we focus on Extract Class. The object-oriented metrics are used to predict the possibility of code refactoring. The combination of two refactoring aspects recommends the possible refactoring effort and identify classes that are involved. As a result, we managed to get 79% percent of accuracy based on the 11 correct results out of 14 that the tool correctly detected. On top of supporting programmers in improving codes, this work also may give more insight into how refactoring improves systems.

PID-67

INVESTIGATION OF ELECTRICAL INTERFERENCE TOWARDS PHOSPHENE-BASED WALKING SUPPORT SYSTEM

Manami Kanamaru, Tan Phan Xuan and Eiji Kamioka

A walking support system with phosphenes for blind people has been investigated. Phosphene is a phenomenon where a flash of light is recognized in the brain by giving an electrical stimulus to human's visual pathway. Phosphenes can be perceived even if their eyes are closed or they are blind. It has been clarified that phosphenes can be induced to several directions if electrodes placements are precisely selected. When phosphenes are presented to two directions for recognizing two obstacles, two pairs of electrodes must be applied. In such a case, however, the electrical interference occurs due to the short distance between electrodes. In the practical use of the phosphene-based walking support system, the avoidance of electrical interference is significant in order to present the phosphenes precisely. Therefore, in this paper, we first practically investigate the electrical interference by considering the difference in phosphene induction generated by a single pair of electrodes and by two pairs of electrodes. Then, the solutions to avoid the electrical interference are discussed.

ABSTRACTS

PID-68

CLASSIFYING SOCIAL COMMERCE FEATURES TOWARD IMPROVING A SOCIAL COMMERCE WEBSITE

Norshaharizan Puteh, Jamilah Din and Salmi Baharom

Social commerce has become more popular compare to e-commerce. This is caused by the transition development of the business transaction website. It has shifted from e-commerce website towards the social commerce website. The e-commerce website has its own standard features, however there are few features in the market for the social commerce website. This research focuses on investigating the essential features of social commerce that should be embedded into the social commerce website. The process of identifying the social commerce features is done through literature review and summarized the features. These summarized features then be analyzed and discussed with three expert reviewers to conform the relevant social commerce features. At this phase, it involve several steps where the discussion started with individual interview. The outcome then be consolidated into a table. The reviewed then be emailed to expert reviewers to get their feedback. The agreement from all of them then be gathered and summarized in a new set of features. The outcome from this study will be used in the development of design template for a social commerce website.

PID-69

THE USE OF REPEATABLE COMPONENTS IN HYBRID MODELS TO ENHANCE SOFTWARE PROJECT MANAGEMENT SUCCESS

Mohanarajah Seenivasagam and Marzanah A Jabar

The management of software project development requires a dynamic and reactive environment to meet shorter time-to-market demands to address competition efficently in the software industry. This scenario requires the use of effective and robust methodologies where opportunities are not lost due to delays and failures in timely software project deliveries. The Agile Manifesto in 2001 which introduced 4 values and 12 principles was designed to develop and manage software projects in a more suitable and effective way to improve the success rates of software projects. But, increase in overall success rates are still not significant with failure rates remaining plauteaued at about 30% over the last 10 years. Hybrids methodologies seem to have worked better as agile hybrid management methods have shown more promise when compared to pure agile methods with an overall success rate increase of 16%. There is evidence too that by combining agile methodologies with traditional methodologies, there would be a further increase in success rates. Whilst many hybrid methodologies have been suggested and researched, the gaps in the literature review reveal there is a lack of hybrid models that have been empirically developed and studied as second order components. To build a robust hybrid model, it is important to gather the relevant information and careful consuideration must be given to the design of the questionnaire to fit second order components and models must incorporate and provide for the use repeatable ways to test models once the data is collected. This paper presents a review of the current gaps in hybrid methodologies and proposes a questionnaire design that supports the research methodology and empirical study to be undertaken with second order components (Constructs). Further it looks at the design approach in questionnaires which incorporates the use of repeatable constructs and the measures used and emphasizes this as an important ingredient for developing and testing hybrid models in research studies.

ABSTRACTS

PID-70

CONCEPTUAL FRAMEWORK OF KXPERT: KNOWLEDGE-BASED INFORMATION RETRIEVAL FOR EXPERT PROFILING

Shahrinaz Ismail and Afifah Aliah Ahmad Suhaimi

With the constant demand for expertise within organisation, especially in boosting the credibility of experts in the organisation, it is a need to bring forth a simple yet effective knowledge-based expert profiling based on information retrieved from credential publication sites. A number of frameworks from previous authors are analysed to propose one sound framework for a case university, to improve its existing research expert database, to make it more efficient in the information retrieval process and knowledge repository technique. Knowledge expertise mapping is proposed to be part of the whole mechanism for the conceptual framework called kXpert in this paper. The choice of credential knowledge sources is highlighted due to the updated information made available on the sites that are based on the published works of the internal experts. Very rare that this information is referred to on daily basis when there is a need to find expertise, thinking that the existing database has it all. The proposed conceptual framework presented in this paper is the work to be completed in the next phase, and can be customised for other organisations, industries and purposes.

PID-71

SOCIAL SUPPORT IN MASSIVE OPEN ONLINE COURSES: A LITERATURE REVIEW

Veronica Clement Buyut, Salfarina Abdullah, Rusli Abdullah and Rodziah Atan

Massive Open Online Courses (MOOCs) provide open educational resources to people around the world. It allows massive number of users from around the world to access free, online based open high-quality educational content offered by world class institutions. However, numerous studies show that MOOCs success were marred by low completion rates and high dropout rates. This paper aims to identify and analyze the literature on the social support related factors that influence the use of MOOCs. Findings show that the relevant literature is extremely limited which calls for further studies to be done on influence of social support on MOOCs usage. The review reveals that emotional support is the most identified social support factor included in MOOC studies from various perspectives followed by informational support. Tangible support and belonging support were the least to be included in the selected studies. This study reveals that more studies are needed to identify the effect of social support factors in influencing the use of MOOCs among learners.

ABSTRACTS

PID-72

A PROPOSED INTEGRATION ARCHITECTURE FOR UNIVERSITY RESEARCH DATA REPOSITORY TO SUPPORT UNIVERSITY AND UNIVERSITY HOSPITAL ON MEDICAL DIGITAL IMAGE MANAGEMENT AND ANALYTICS USING HADOOP

Fatimah Sidi, Iskandar Ishak, Rusli Abdullah, Yusmadi Yah Jusoh, Azizi Sabron, Shahril Iskandar Amir, Saiful Ramadzan Hairani and Ahmad Sobri Muda

Big Data has been used in university and hospital due to its enormous potential in managing large volume and many types of data. However, university that also has hospitals may need to integrate their data repository to have a single site access for easier system administration and management. The needs of image analytics for both researchers in the university and physicians in the university hospital demand the need of Big Data platform such as Hadoop framework. Based on the literatures, there are no papers that describe in detail the integration of big data for university, which include its own teaching hospital. Therefore, this paper focuses on the proposed research data architecture for university and university hospital to support data repository for both with capability of image analytics using Hadoop technology.

PID-73

FAKEHEADER: TOOL TO DETECT DECEPTIVE ONLINE NEWS BASED ON MISLEADING NEWS HEADLINES AND CONTENTS

Iskandar Ishak, Normala Che Eembi Jamil, Fatimah Sidi and Lilly Suriani Affendey

Online news has been the primary source of news content for newsreaders. Unfortunately, based on several findings, readers tend to judge on specific events based on the news headlines rather than its contents. With the advancement of mobile and web technologies, it is easier to spread the news to others with these unhealthy habits that can cause negative impacts on individuals, organisations, or nations that are victimised by the news. In the proposed work, a tool to detect deceptive news based on misleading headlines or content is developed. The tools incorporate data veracity framework for online news with Support Vector Machine and proposed combination of features. The experimental results show the proposed tool managed to produce high performance results with more than 90% precisions and recalls.

ABSTRACTS

PID-74

NON-FUNCTIONAL REQUIREMENT DETECTION USING MACHINE LEARNING

Mar Yah Said and Hazlina Shariff

A key aspect of software quality is when the software has been operated functionally and meet user needs. A primary concern with non-functional requirements (NFR), they always being neglected because their information are hidden in the documents. NFR is a tacit knowledge about the system and as a human, a user usually hardly know how to describe NFR. Hence, affect the NFR to be absent during the elicitation process. The software engineer has to act proactively to demand the software quality criteria from the user so the objective of requirement can be achieved. In order to overcome these problems, we use machine learning to detect the indicator term of NFR in textual requirements so we can remind the software engineer to elicit the missing NFR. We developed a prototype tool to support our approach to classify the textual requirements and using supervised machine learning algorithms. The evaluation survey was done to evaluate the prototype tool by to verify the effectiveness of the prototype tool to detect the NFR.

PID-75

USABILITY TESTING OF DISLEKSIABELAJAR MOBILE APP FOR ASSISTING DYSLEXIA JUNIOR SCHOOL STUDENTS TO LEARN THE MALAY LANGUAGE

Novia Admodisastro, Chan Kai Fung, Siti Suhaila Abdul Hamid, Azrina Kamaruddin and Sa'adah Hassan

Mobile application is categorised as learning intervention in today's education platform. Countless mobile applications have been developed to support the learning of the students regardless their age and learning level. Students with dyslexia are one of the populations that are being addressed for the development of the mobile application. Students with dyslexia are defined as struggle readers who have difficulty in learning the language. With the advancement of technology in mobile application such as size, mobility, performance and interactivity, it is suitable for learning intervention of students with dyslexia. This study intends to evaluate the usability of mobile application for dyslexia in primary school children in learning the Malay language. The mobile app called DyslexiaBelajar is developed based on dyslexia -friendly user interface that includes four learning modules phonology, spelling, reading and writing. A usability testing is conducted using FunKit techniques i.e. Smileyometer, Software Usability Scale (SUS) and as well as Again-Again Table. This study has been conducted by involving a total of 12 students with dyslexia aged 7 to 12 years old. The finding shows that DisleksiaBelajar is usable with 78.3% from SUS result. Again-Again Table also shows students enjoying and willing to play the application again which indicates the effectiveness of the intervention. These early results have shown a promising feedback and improvement in children learning's experience.

ABSTRACTS

PID-76

AN EXPERIMENTAL EVALUATION OF THE DYNAMIC SERVICE ADAPTATION FRAMEWORK IN MOBILE CLOUD LEARNING

Sufri Muhammad, Novia Admodisastro, Norhayati Mohd Ali and Hafeez Osman

Service-Based Applications (SBAs) are required to operate in a highly dynamic environment such as a pervasive environment as they rely on the third-parties services available on the cloud. SBAs need to be self-adaptive to cope with the dynamism of such an environment. Besides, the integration between SBAs with context-aware capabilities has provided the users with personalized services based on their user's contextual information, device's contextual information as well as the Quality of Services (QoS). This contextual information, service description, and QoS have been represented using a Semantic-Based approach for the dynamic service adaptation process which involved in service discovery, ranking, and selection. However, the correctness to select the most equivalent services has not been addressed sufficiently. The correctness of services is substantial for the continuity of user activity on the system. Hence, this paper measure the correctness for the developed framework called Dynamic Service Adaptation of Context-Aware Mobile Cloud Learning (DACAMoL) tested in the Mobile Cloud Learning (MCL) environment which involved the learners as the participants. The evaluation result with end-users has demonstrated that the DACAMoL framework correctness has more than 32 adapted educational services are correct out of total 33 scenarios (i.e. 95% of the population) tested using One-Sample Wilcoxon Signed Rank test. DACAMoL is proposed to improve on the correctness of the dynamic service adaptation in regards to the substituted services.

PID-77

SAFETY FEATURES AND INVENTORY MANAGEMENT FOR VENDING MACHINE USING IoT

Sazly Anuar, Danial Mirza Madrawi and Farah Hana Mukhtar

Security features and inventory management for vending machines using IoT is a project which focus mainly on IoT implementation on vending machines. Although IoT is no stranger to vending machine, the project takes different approach of IoT. This time is not just about the inventory management but also mainly the security features. Since IoT requires internet connection and cloud storage, it requires a microcontroller that supports wireless connection. Therefore, all the operations including controlling the vending machine will be done using ESP32. Anything that are recorded from the vending machine like the number of product left, the amount of money and the condition of it will be uploaded to the cloud storage, Blynk. Blynk app and cloud storage are easy to use without need of professional knowledge. The inventory management is done by monitoring the amount of the money and items. The safety features will be done using accelerometer and gyroscope which will be detecting force on the body


AiIC
2020
Thank you
aiic.upm.edu.my
aiic.upm.edu.my