



The 2nd International Conference on
Software Engineering and Information Management
(ICSIM 2019)

Acceptance Notification

Bali, Indonesia on January 10-13, 2019.

Publication and Presentation

Paper ID:	B1-0025
Paper Title:	Developing Interactive Bible Learning Model Based on Mobile for Children

Congratulations!

Dear Hadi Sutopo, Hindriyanto Purnomo, Maria Silaen, Swati Lee, Justitia Hattu, Anastasia Maryatmi, Altobeli Lobodally and Arie Prasida

With heartiest congratulations I am pleased to inform you that based on the recommendations of the reviewers and the Technical Program Committees, your paper identified above has been accepted for *publication and oral presentation* in 2019 the 2nd International Conference on Software Engineering and Information Management (ICSIM 2019). Herewith, the conference committee sincerely invites you to come to present your paper at ICSIM 2019 to be held in **Bali, Indonesia on January 10-13, 2019**. If the registration procedure is completed before/on the set deadline, the paper will be collected in the conference proceedings, which will be published in International Conference Proceedings Series by ACM (ISBN: 978-1-4503-6642-7). To learn more information, you can log in the official website via <http://icsim.org/>

Registration Procedure

You are expected to complete the following SIX steps in order to register and have your paper included in the proceedings successfully:

1. **Revise your paper according to the Review Comments in the attachment carefully.**
2. **Format your paper according to the Template carefully.**
<http://icsim.org/Template.doc>
3. **Download and complete the Registration Form. (Attached in the email)**
4. **Finish the payment of Registration fee (The detailed information can be found in the Registration form)**
5. **Send your final papers (both doc and pdf version), filled registration form (doc.) and payment proof to icsim2018@vip.163.com Before November 25th, 2018**
6. **Copyright would be issued 10 days ahead of the conference date, please keep in touch for the copyright issue.**

Please strictly follow the instructions of the format specified in the conference template while preparing your final paper. If you have any problem in preparing the final paper, please feel free to contact us via icsim2018@vip.163.com. For the most updated information on the conference, please check the conference website at <http://icsim.org/>. The Conference Program will be available at the website in the late December, 2018.

We are looking forward to meeting you in Bali, Indonesia.

Yours sincerely,

ICSIM 2019

Organizing Committee



FRONT PAGE

2019 2nd International Conference on Software Engineering and
Information Management

ICSIM 2019

2019 2nd International Conference on Big Data and Smart Computing

ICBDSC 2019

Bali, Indonesia | January 10-13, 2019

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VENUE

Universitas Pendidikan Ganesha (Undiksha), Indonesia



Address: Jalan Udayana No.11 Singaraja-Bali 81116



VENUE



Local Temperature: 22~30°C

Emergency Call:

Main Emergency-**112** (like 911)

Ambulance-**118**

Search & Rescue-**111, 115, 151**

Police-**110**

Fire Dpt.-**113**

Tips

- ◆ The new MAIN EMERGENCY NUMBER is 112. Make sure you use the country and area code depending on what SIM card or phone you are using.
- ◆ Most times it will be faster to get a cab and drive to the nearest hospital or medical centre than calling an ambulance.
- ◆ Balinese are always ready to help so if you are in an emergency don't hesitate to ask for assistance!
- ◆ If you need to call abroad from Indonesia you need to use one of the following prefixes: 001 / 007 / 009 / 017 or 0107.
(0361 South Bali | 0362 North Bali | 0363 East Bali | 0365 West Bali | 0368 Bedugul).

AGENDA



[January 10, 2019]



Universitas Pendidikan Ganesha (Undiksha), Indonesia



In front of the Auditorium, second floor, Pascasarjana Undiksha



10:00-13:30



Registration & Material Collecting

Give your **Paper ID** to the staff



Sign your name in the attendance list and check the paper information



Check your **conference kit**, which includes conference bag, name tag, lunch & dinner coupon, conference program, the receipt of the payment and an USB drive with paper collection



Auditorium Pascasarjana

	14:30-14:45	[Welcome Speech] BY Dr. I Nyoman Jampel, Rector of Universitas Pendidikan Ganesha, Indonesia
	14:45-15:00	[Speech] BY Dr. Hadi Sutopo, Kalbis Institute, Indonesia, Conference Chair [Opening Ceremony] BY Dr. I Nyoman Jampel, Conference Chair and Rector of Universitas Pendidikan Ganesha, Indonesia
	15:00-15:30	[Coffee Breaks] [Bali Dance Performance] BY Students of Universitas Pendidikan Ganesha, Indonesia
	15:30-17:00	Campus Visit in Universitas Pendidikan Ganesha, Indonesia

AGENDA



[January 11, 2019]

Morning



Universitas Pendidikan Ganesha (Undiksha), Indonesia

	In front of the Auditorium, Second Floor, Pascasarjana Undiksha
	08:00-09:00 [Registration]

	Auditorium Pascasarjana	
	09:00-09:20	[Welcome Message (Notes & Announcement)] BY Dr. Hadi Sutopo, Kalbis Institute, Indonesia, Conference Chair
	09:20-10:00	[Keynote Speech] BY Prof. Rajkumar Buyya, The University of Melbourne, Australia Title-New Frontiers in Cloud Computing for Big Data and Internet-of-Things (IoT) Applications
	10:00-10:40	[Group Photo & Coffee Breaks]
	10:40-11:20	[Invited Speech] BY Dr. Eko K. Budiardjo, University of Indonesia, Indonesia Title-SCRUM Fine Tuning by Implementing CMMI Dev Process Area and Its Practices
	11:20-12:00	[Invited Speech] BY Prof. Dr. I Nengah Suparta, Universitas Pendidikan Ganesha, Indonesia Title-Some New Classes of Graceful Trees



Lunch @ Auditorium, the Second Floor

12:00-13:30

AGENDA



[January 11, 2019]

Afternoon



Universitas Pendidikan Ganesha (Undiksha), Indonesia

Room 1	
13:30-15:45	Session I-Data Mining and Data Management Chaired by Prof. Zhaohao Sun, PNG University of Technology, PNG
	9 Presentations —B1-0009, B1-0045, B1-0047, B2-0013, B2-0017, B2-0018, B2-0022, B2-0023, B2-0027
15:45-16:00	Coffee Break
16:00-18:30	Session II-Software Engineering Chaired by TBA
	10 Presentations —B1-0003, B1-0017, B1-0026, B1-0040, B1-0058, B1-0049, B1-0062, B1-0064, B1-0020, B1-0023

Room 2	
13:30-15:45	Session III-Computer and Information Network Technology Chaired by TBA
	9 Presentations —B1-0019, B1-0030, B2-0020, B1-0006, B1-0010, B1-0037, B1-0068, B1-0069, B1-0024
15:45-16:00	Coffee Break
16:00-18:45	Session IV-Computer Theory and Application Chaired by TBA
	10 Presentations —B1-0048, B1-0015, B1-0065, B1-0070, B1-0057, B1-0051, B1-0061, B1-0029, B1-0004, B1-0034, B2-0014



Dinner Banquet @ Unki Warung Seafood Singaraja-temukus Street

<18:45-20:00>

AGENDA



[January 12, 2019]



Universitas Pendidikan Ganesha (Undiksha), Indonesia

Room 1	
08:00-09:45	Session V-Image and Signal Processing Chaired by TBA <hr/> 7 Presentations —B1-0027, B1-0035, B2-0004, B2-0015, B2-0024, B1-0042, B1-0050
09:45-10:00	Coffee Break
10:00-12:15	Session VI—Service Science and Information Management Chaired by Asst. Prof. Roseclaremath A. Caroro, Technological Institute of the Philippines, Philippines <hr/> 9 Presentations —B1-0071, B1-0031, B1-0036, B1-0056, B1-0060, B1-0055, B2-0019, B1-0016, B1-0025



Lunch@ Auditorium, the Second Floor
<12:30-13:30>

Room 1	
13:30-14:30	Poster Presentations —B2-0001, B2-0008, B2-0010, B1-0053, B1-0028



Tips for Participants

- ✧ Your punctual arrival and active involvement in each session will be highly appreciated.
- ✧ The listeners are welcome to register at any working time during the conference.
- ✧ Get your presentation PPT or PDF files prepared.
- ✧ Regular oral presentation: 15 minutes (including Q&A).
- ✧ Laptop (with MS-Office & Adobe Reader), projector & screen, laser pointer will be provided by the conference organizer.
- ✧ Please keep all your belongings (laptop and camera etc.) with you in the public places, buses, metro.

AGENDA



[January 13, 2019]
Social Program



Duration: 10 hours



Pick-up from Universitas Pendidikan Ganesha (Undiksha).



Pick-up Time: 08:30

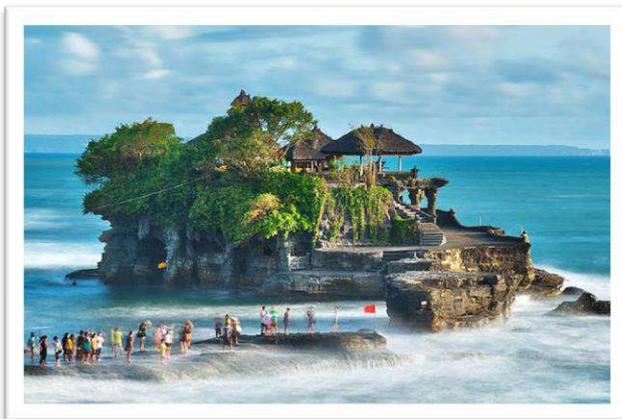


Routine: Danau Buyun & Danau Tamblingan ➡ Lunch in Ubud ➡ Ubud Palace
➡ Tanah Lot



Highlight

- ✓ Visit the focal landmark of Ubud - Ubud Palace
- ✓ Enjoy a full-day tour and discover the Balinese culture and Tanah Lot
- ✓ Enjoy the beautiful scene of the two volcanic lakes
- ✓ Stay cool in a modern, air-conditioned vehicle



Inclusions:

- ◆ Transportation by air-conditioned vehicle
- ◆ English-speaking driver
- ◆ Private tour
- ◆ All entrance fees
- ◆ Special local lunch in Bali

Exclusions:

- ◆ Tips
- ◆ Dinner

Attention:

- ◆ Please keep your belongings with you.
- ◆ If you are interested, please give your feedback before or on December 30. If you miss this date, we can't accept your request anymore.
- ◆ Please arrive the assembly point 10 minutes earlier. Thanks for your kind understanding!



WELCOME

Dear distinguished delegates,

It is our great honor and pleasure to welcome you to 2019 2nd International Conference on Software Engineering and Information Management (ICSIM 2018) as well as its workshop- 2019 2nd International Conference on Big Data and Smart Computing (ICBDSC 2019) held in Bali, Indonesia on January 10-13, 2019.

We'd like to express our heartfelt appreciation to our chairs, sponsors, technical program committee members, organizing committee members, authors and delegates, who made a lot of efforts and contributions year by year. Thanks to your support and help, we can hold this conference successfully and always keep making progress.

The evaluation of all the papers was performed based on the reports from anonymous reviewers, who are qualified in the field of software engineering and information management as well as software engineering and information management. As a result of their hard work, we are pleased to have accepted 59 presentations coming from China, Taiwan, Korea, Japan, India, United States, Indonesia Malaysia, Canada, Philippines, Viet Nam, Jordan, South Africa, Australia and Turkey in this program.

A word of special welcome is due to our keynote speakers who are pleased to make contributions to our conference and share their new research ideas with us. They are Prof. Rajkumar Buyya as IEEE Fellow from The University of Melbourne, Australia, who is delivering a speech on "New Frontiers in Cloud Computing for Big Data and Internet-of-Things (IoT) Applications"; Prof. Eko K. Budiardjo from University of Indonesia, who will make a speech on "SCRUM Fine Tuning by Implementing CMMI Dev Process Area and Its Practices"; and Prof. Dr. I Nengah Suparta from Universitas Pendidikan Ganesha (Undiksha) with a talk on "Some New Classes of Graceful Trees".

On Jan.11-12, we have 6 parallel presentation sessions including data mining and data management, software engineering, computer and information network technology, computer theory and application, image and signal processing, service science and information management. The platform is ready, so please seize this opportunity to show your thoughts and opinions confidently.

Wish you will enjoy this conference, contribute effectively toward it and take back with you knowledge, experiences, contacts and happy memories of these days. Thank you for your attention!

Yours sincerely,

Conference Organizing Committee

SPEAKERS



Prof. Rajkumar Buyya

IEEE Fellow

The University of Melbourne, Australia

Dr. Rajkumar Buyya is a Redmond Barry Distinguished Professor and Director of the Cloud Computing and Distributed Systems (CLOUDS) Laboratory at the University of Melbourne, Australia. He is also serving as the founding CEO of Manjrasoft, a spin-off company of the University, commercializing its innovations in Cloud Computing. He served as a Future Fellow of the Australian Research Council during 2012-2016. He has authored over 625 publications and seven text books including "Mastering Cloud Computing" published by McGraw Hill, China Machine Press, and Morgan Kaufmann for Indian, Chinese and international markets respectively. He is one of the highly cited authors in computer science and software engineering worldwide (h-index=117, g-index=245, 71,100+ citations). Dr. Buyya is recognized as a "Web of Science Highly Cited Researcher" in 2016 and 2017 by Thomson Reuters, a Fellow of IEEE, and Scopus Researcher of the Year 2017 with Excellence in Innovative Research Award by Elsevier for his outstanding contributions to Cloud computing.

Title---New Frontiers in Cloud Computing for Big Data and Internet-of-Things (IoT) Applications

Abstract---Computing is being transformed to a model consisting of services that are commoditised and delivered in a manner similar to utilities such as water, electricity, gas, and telephony. Several computing paradigms have promised to deliver this utility computing vision. Cloud computing has emerged as one of the buzzwords in the IT industry and turned the vision of "computing utilities" into a reality. Clouds deliver infrastructure, platform, and software (application) as services, which are made available as subscription-based services in a pay-as-you-go model to consumers. Cloud application platforms need to offer (1) APIs and tools for rapid creation of elastic applications and (2) a runtime system for deployment of applications on geographically distributed computing infrastructure in a seamless manner.

The Internet of Things (IoT) paradigm enables seamless integration of cyber-and-physical worlds and opening up opportunities for creating new class of applications for domains such as smart cities. The emerging Fog computing is extending Cloud computing paradigm to edge resources for latency sensitive IoT applications.

This keynote presentation will cover (a) 21st century vision of computing and identifies various IT paradigms promising to deliver the vision of computing utilities; (b) opportunities and challenges for utility and market-oriented Cloud computing, (c) innovative architecture for creating market-oriented and elastic Clouds by harnessing virtualisation technologies; (d) Aneka, a Cloud Application Platform, for rapid development of Cloud/Big Data applications and their deployment on private/public Clouds with resource provisioning driven by SLAs; (e) experimental results on deploying Cloud and Big Data/Internet-of-Things (IoT) applications in engineering, and health care, satellite image processing, and smart cities on elastic Clouds; and (f) directions for delivering our 21st century vision along with pathways for future research in Cloud and Fog computing.

SPEAKERS



Dr. Eko K. Budiardjo

University of Indonesia, Indonesia

Dr. Eko K. Budiardjo has been the faculty member of the Faculty of Computer Science - University of Indonesia since 1985. Teaching, research, and practical services are aligned; give result in a full spectrum of academic achievement. Majoring in Software Engineering as professional track record, he has made some scientific contribution such as Software Requirement Specification (SRS) patterns representation method, R3 Method, ZEF Framework, FrontCRM Framework, and Social CRM Framework for Higher Education Institution. Graduated from Bandung Institute of Technology (ITB) in 1985, holds Master of Science in Computer Science from the University of New Brunswick – Canada in 1991, and awarded Philosophical Doctor in Computer Science from the University of Indonesia in 2007. He is a member of the International Association of Engineers (IAENG)? a senior member of the International Association of Computer Science and Information Technology (IACSIT). Currently he is the Head of Reliable Software Engineering (RSE) Lab., and Chairman of The Indonesian ICT Profession Society (IPKIN).

Title---SCRUM Fine Tuning by Implementing CMMI Dev Process Area and Its Practices

Abstract---The era of startup, agile paradigm for Software Engineering (SE) process become more popular compare to waterfall paradigm. Although some improvement has been made to the waterfall paradigm by applying prototyping, incremental, and iterative concepts. Some development model like Rapid Application Development (RAD), Incremental Build Model, Iterative methodology (i.e. RUP) as the manifesto of those improvement. Capability Maturity Model Integration for system / software Development (CMMI-Dev) emerges as a framework for SE processes improvement, consist of 22 Process Areas (PA) in which totally have 49 Specific Goals (SG). Those SG achieved by practicing or implementing 167 Specific Practices (SP). There are two approach models for SE process improvement, by means gradually or continuously. In the case of requirements uncertainty are quite high, like in the startup environment, enhanced or modified waterfall paradigm methodologies are not fit. Agile based methodologies like SCRUM and XP promise that they are suitable to overcome this challenge. Although most of CMMI-Dev adopter use Waterfall based methodology, CMMI Institutes research shows that SCRUM as SE process able to take benefit from CMMI Dev SP in improving its ceremonies and techniques. In other word, SCRUM Fine Tuning achieved by implementing CMMI-Dev SP. As an example, the Product Backlog Grooming performance is improved by practicing SP in Requirements Management (REQM) & Requirements Development (RD) CMMI-Dev PA.

SPEAKERS



Prof. Dr. I Nengah Suparta

Universitas Pendidikan Ganesha (Undiksha), Indonesia

I Nengah Suparta was born in Buleleng regency, Bali – Indonesia, in 1965. He got his bachelor degree in mathematics education from Udayana University in 1988. Since then he taught mathematics in a couple of secondary schools and private colleges until 1991. In 1992 he received a scholarship from DIKTI to do his master program in mathematics at ITB Bandung, and finished this program in 1994. In 1999 till 2001 he was the head of Mathematics Department at Ganesha University of Education. After finishing a couple workshops in coding theory, he was awarded a PhD scholarship from Koninklijke Nederlandse Academie van Wetenschappen (KNAW) to have his PhD program in a part of coding theory at Delft University of Technology, Holland, in 2002, and finished this program in 2006. He has involved himself in some conferences for parallel, invited, and keynote speakers. He is now a member of Indonesian Mathematical Society as the head of Teaching-Learning Development section and of Indonesian Combinatorics group as a vice president. He now also serves as the Dean of Mathematics and Natural Sciences Faculty at Ganesha University of Education.

Title---Some New Classes of Graceful Trees

Abstract---A graph labeling is a notorious topic in graph theory. This is not merely because of its combinatorial properties but also its applications. In this talk we will focus on graceful labeling of trees. A graceful labeling of a tree, $T(V,E)$, having q edges is an injective function f with domain $V(T)$ into the set $\{0, 1, \dots, q\}$ such that the induced function $f'(uv) := |f(u)-f(v)|$ for every edge $uv \in E(T)$ onto the set $\{1, 2, \dots, q\}$, is a bijection. Many graceful classes of trees have been identified. These works had been mainly done for proposing partial answers to the long standing conjecture stating that all trees are graceful. This conjecture was proposed by Ringel and Kotzig in 1960s which then was reformulated by Rosa 1967. In this talk we will introduce some new classes of graceful trees. Our method for producing these classes is based on a graceful tree T of m vertices as the core, and a certain collection $\Gamma(m)$ of m graceful trees T_i , $1 \leq i \leq m$. The way we apply for producing a new bigger tree is by identifying each vertex of T with exactly one certain vertex of every tree in $\Gamma(m)$. The method is a generalization of the methods introduced by Stanton and Zarnke [6] and Koh, Rogers and Tan [2, 3, 4, 5]. In constructing a new class of graceful tree, the method makes use of the so called compatible collection of trees.

Let $\Gamma(m)$ be a graph of m tree components T_1, T_2, \dots, T_m , with T_i of n_i vertices. Denote $N(m) = \sum_{j=1}^m n_j$. Adopting the terminology of Koh, Rogers, and Tan in [5], we call $\Gamma(m)$ a compatible collection if there exists a labeling function g for $\Gamma(m)$ such that all vertex labels of $\Gamma(m)$ range from 0 to $N(m) - 1$, inclusively, and the edge labels of $\Gamma(m)$ range from 1 to $N(m) - 1$ with $m - 1$ missing edge labels. The function g is called compatible labeling of $\Gamma(m)$.

In this talk we introduce two types of compatible collections: interlaced and matched pair collections, and then construct two classes of larger graceful trees.

SESSION I

January 11, 2019

Session I

[Data Mining and Data Management]

13:30-15:45

Room 1

**Chaired by Prof. Zhaohao Sun,
PNG University of Technology, PNG**

9 presentations-

B1-0009, B1-0045, B1-0047, B2-0013, B2-0017, B2-0018, B2-0022, B2-0023, B2-0027

***Note:**

Please arrive 30 minutes ahead of the sessions to prepare and test your PowerPoint.

Certificate of Presentation will be awarded to each presenter by the session chair when the session is over.

One Best Presentation will be selected from each parallel session and the author of best presentation will be announced and awarded when the session is over.

SESSION I

<p>B1-0009 13:30-13:45</p>	<p>Data Analytics for Veterinary Clinic using Predictive Analysis Technique and Segmentation Algorithm Mariella P. Buot, Risty M. Acerado, Beulah Grace A. Duque, Roselia C. Morco and Jemimah A. Padilla Technological Institute of the Philippines, Philippines</p> <p>ABSTRACT Management Information System (MIS) is a factor that supports the decision makings of business organizations. The competition between organizations are tight in terms of services offered these days. Therefore, implementing data analytics might be a unique technique to gain a competitive advantage by offering greater benefits and services to customers. Furry Tales Veterinary Clinic is one of the animal clinics in Quezon City that offers pet services. Some issues encountered by the company involve managing medicine supplies and inefficient customer management. Because of this, an MIS was developed to help the clinic in amending the processes. Health care organization like animal clinics collects, stores, and retrieves large number of data. This study utilizes data analytics as a business strategic technique to help the Furry tales veterinary clinic in anticipating the needs of the pet owners based on the historical medical data of the pets. Predictive analysis was being used to determine the possible trends or outcomes in the future. The segmentation algorithm for Microsoft Power BI tool was applied to cluster and transform the data collected. Based on the result of evaluation and opinions from the respondents, it was proven that MIS and data analytics could be used as a strategy to help business companies increase their revenue.</p>
<p>B1-0045 13:45-14:00</p>	<p>Data Mining Technique To Get Characteristics Customers Of Bendesa Hotel with K-MEANS Algorithm IG. Karang Komala Putra, G. Indrawan and I M. Candiasa Universitas Pendidikan Ganesha ,Indonesia</p> <p>ABSTRACT This research aims to find customers based on characteristics of hotel customers who stay since there is still no research provides its technological state of the art. Through collaboration between Computer Science and Tourism, this research contributes on the development of K-Means Algorithm using WEKA application that can be elaborated into: 1) Search for best number of clusters used; 2) Identification of hotel customer characteristics; 3) Measurement of accuracy customer characteristics. This research can be used by hotel management to recognize customer characteristics so that they can develop strategies to get as many customers as possible, especially in Bali Province where Bali tourism is considered as one of the largest foreign exchange earners. K-Means algorithm uses CRISP-DM as a data mining life cycle which consists of 6 phases, the entire sequential phase is adaptive. The next phase in sequence depends on the output from the previous phase. In this research, it was tested on 2 clusters of up to 6 clusters. Using the value of sum of squared errors (SSE) is</p>

SESSION I

	<p>generated 5 clusters are the best from the other. Data on 5 clusters is used as reference to find characteristics of potential customers who stay in hotels. Through experiments, K-Means algorithm has an accuracy of 72% (108 of 150) tests using sample data compared to characteristics produced by K-Means. In the future, this research could be improved by: 1) collaboration between the K-Means algorithm and other clustering algorithms; and 2) add customer characteristics.</p>
<p>B1-0047 14:00-14:15</p>	<p>Modified Anti-Monotone Support Pruning on FP Tree for Improved Frequent Pattern Generation Roseclaremath A. Caroro, Ariel M. Sison and Ruji P. Medina Technological Institute of the Philippines, Philippines</p> <p>ABSTRACT Pattern discovery plays a very important role in mining interesting frequent patterns from any data sources. Besides, it also includes determining whether the pattern is interesting. The study applied the modified anti-monotone support constraint to the Frequent Pattern-Growth (FP-Growth) algorithm to enhance its frequent pattern generation. Besides, the study applied the alteration after constructing the FP tree, thereby traversing and searching the nodes of the tree for possible nodes not satisfying the minimum support. The mining process resulted to a comparable difference in the number of generated itemsets and association rules. The second pruning showed more interesting frequent patterns compared to those generated only from the first pruning. The study used the confidence measure in assessing the algorithm's performance. The result of the evaluation showed that of the two itemsets used in the testing, only very few frequent patterns generated after the first pruning obtained most interesting measures, having 1 out of 6 for itemset S40 and 5 out of 20 for itemset S82. On the other hand, all the frequent patterns generated after the second pruning obtained the most interesting measures. Hence, the dual pruning removes infrequent and weak patterns, leaving only those interesting and strong ones.</p>
<p>B2-0013 14:15-14:30</p>	<p>Integrating Labeled and Unlabeled Data for Classification Eric Jiang University of San Diego, USA</p> <p>ABSTRACT Automatic classification is a process of assigning data objects into one or more predefined categories or classes and it has been broadly applied in many areas in business, finance, health care, science and security. The process, however, typically requires a sufficient amount of labeled training samples and can underperform significantly when such labeled data are limited in supply. In this talk, we discuss a general classification framework for incorporating a clustering based algorithm into machine learning paradigms and it can learn for classification effectively from both limited labeled samples and additional unlabeled data. Further, the framework has a control mechanism of modulating the influence of unlabeled data in model parameter</p>

SESSION I

	<p>estimation in order to adequately balance predictive values between both types of data and to improve overall classification performance. Experimental results with several benchmark data corpora show that the proposed framework provides an efficient classification approach and also an appropriate integration of labeled and unlabeled data in learning can generally reduce classification errors.</p>
<p>B2-0017 14:30-14:45</p>	<p>Measles Metapopulation Modeling using Ideal Flow of Transportation Networks Jann Railey E. Montalan, Maria Regina Justina Estuar, Kardi Teknomo and Roselle Wednesday Gardon Ateneo de Manila University, Philippines</p> <p>ABSTRACT In developing countries with limited access to medical resources, infectious diseases like measles can develop rapidly within and between communities. Combination of data coming from various sources that report historical disease incidences and transportation infrastructures are valuable sources of knowledge that can assist in public health policies and initiatives surrounding disease surveillance. This study integrates population, disease incidence, and transportation network data into measles modeling. Results show that a hybrid metapopulation modeling approach using ideal flow distribution over mobility networks can yield more accurate models for measles progression. This demonstrates the feasibility of using big data in the monitoring of measles propagation.</p>
<p>B2-0018 14:45-15:00</p>	<p>A Managerial Framework for Intelligent Big Data Analytics Zhaohao Sun and Yanxia Huo PNG University of Technology, PNG</p> <p>ABSTRACT Intelligent big data analytics is an emerging paradigm for integrating big data, analytics, and artificial intelligence. The objective of this paper is to provide a managerial framework of intelligent big data analytics. More specifically, this paper proposes a managerial framework of intelligent big data analytics, which consists of intelligent big data analytics as a science, technology, system, service and management for improving business decision making. Then it elaborates intelligent big data analytics for management taking into account main managerial functions: planning, organising, leading and controlling. The proposed approach in this paper might facilitate the research and development of business analytics, big data analytics, business intelligence, artificial intelligence and data science.</p>
<p>B2-0022 15:00-15:15</p>	<p>Revealing High-Frequency Trading Provision of Liquidity with Visualization M. Hirsch, P.Lajbcygier, R. Hyndman and D. Cook Monash University, Australia</p> <p>ABSTRACT Liquidity is crucial for successful financial markets. It ensures that all investors are able to buy and sell assets quickly at a fair price. High Frequency Traders (HFTs) utilize</p>

SESSION I

	<p>sophisticated algorithms operating with extreme speed and are frequently cited as liquidity providers. The objective of this paper is to investigate the liquidity provision of a number of HFTs to determine their effects on aggregate marketplace liquidity. We consider a large data set collected from the Australian Securities Exchange throughout 2013, providing a near complete picture of all trading activity. Our method is to consider temporal bar charts, association scatterplots, faceted plots and network diagrams to provide visualizations that yield both novel and conventional insights into how HFTs are operating in the market, specifically with respect to liquidity provision. Consistent with HFTs avoiding adverse selection, our results show that on aggregate, HFTs often consume rather than provide liquidity. Furthermore, liquidity consumption often occurs very quickly over intra-millisecond time periods. We conclude that HFTs are not exclusively focused on liquidity</p>
<p>B2-0023 15:15-15:30</p>	<p>Analysis of Outlier Data using Parallel Maximum Likelihood Estimator Yekti Widyaningsih, Devvi Sarwinda and Anis Y. Yasinta Universitas Indonesia, Indonesia</p> <p>ABSTRACT In this paper, we investigate about implementation of parallel maximum likelihood estimator (Parallel-MLE) in analysis of outlier data for multiple linear regression model. Parallel method is a method that divides data into clusters. In this study, K-Means Clustering is applied for clustering method. The data in this research was obtained from bankruptcy data (bank32nh). Bank32 is queues data at an XYZ bank, where it consist of 4500 observations, 1 dependent variable, and 31 independent variables. The experimental results show Parallel-MLE show better mean square error (MSE) and performance compare to MLE. Our proposed method achieved smaller MSE for more outlier observations (7-30 outliers) i.e. 0.000059.</p>
<p>B2-0027 15:30-15:45</p>	<p>Heterogeneous Data Integration using Confidence Estimation of Unseen Visual Data for Zero-shot Learning Sanghyun Seo and Juntae Kim Dongguk University, Korea</p> <p>ABSTRACT Zero-shot learning is a learning methodology that can be used to recognize concepts that have never been seen during the training phase. Recently, interest in zero-shot learning has been increased by embedding multi-modal data into common vector space through heterogeneous data integration methodology. However, since the existing methodologies compare heterogeneous data focusing on the similarity between each vector, the performance of zero-shot learning decreases when the number of semantic candidates increases. We propose a heterogeneous data integration methodology using a confidence estimator for unseen visual data which estimates that whether input data is unseen data or not and output confidence measure. The proposed methodology constructs a more efficient zero-shot learning model by applying estimated confidence of input unseen visual data to the</p>

SESSION I

visual-semantic distance obtained from heterogeneous data integration model. Experiments have shown that the proposed methodology can improve zero-shot learning performance for unseen data despite a small performance decrease in the seen data.



Coffee Break

<15:45-16:00>

SESSION II

January 11, 2019

Session II

[Software Engineering]

16:00-18:30

Room 1

Chaired by TBA

10 presentations-

B1-0003, B1-0017, B1-0026, B1-0040, B1-0058, B1-0049, B1-0062, B1-0064, B1-0020,
B1-0023

***Note:**

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SESSION II

<p>B1-0003 16:00-16:15</p>	<p>A Productivity Framework for Software Development Literature Review Steven Delaney and Doug Schmidt Ryerson University (Toronto), Canada</p> <p>ABSTRACT Productivity research has for the most part examined approaches that are focused on deriving a single measure for Productivity = Output / Input. This can work under specific scenarios and context but cannot be applied universally to a broad range of software development projects. This paper makes the assertion that it is possible to measure productivity in a manner that will help identify opportunities to improve productivity.</p>
<p>B1-0017 16:15-16:30</p>	<p>A New Method of Latin-to-Balinese Script Transliteration based on Noto Sans Balinese Font and Dictionary Data Structure G. Indrawan, I K. Paramarta and K. Agustini Universitas Pendidikan Ganesha (Undiksha), Indonesia</p> <p>ABSTRACT This research aims to provide a new method of Latin-to-Balinese script transliteration based on the Noto Sans Balinese font since so far no research provides its technological state of the art. This multi-disciplines collaboration research produced the first known method utilizing the Noto Sans Balinese font that can be elaborated into: 1) the establishment of the MVC design pattern and its implementation; 2) the identification of 17 types of particular words; 3) the accomodation of those particular words by the dictionary data structure; 4) the establishment of the accuracy measurement for the next new method development; and 5) the accuracy improvement compared to other methods utilizing Bali Simbar font. This method can be utilized as a core of learning application to provide the knowledge of transliteration, as a part of Balinese Language learning program in Indonesia, especially in Bali Province where its Balinese Language was considered as a mandatory subject from elementary to high school. This method used MVC architectural pattern, where Model handles a repository for the particular words, View handles application User Interface, and Controller handles transliteration algorithm based on string pattern matching. Through the experiment, accuracy above 91% (138 of 151 cases) has been achieved by this method on the testing cases of The Balinese Alphabet document. On the same testing cases, that result outperformed the existing method Transliterasi Aksara Bali based on the Bali Simbar font, with its accuracy a little above 68% (103 of 151 cases). In the future work, this method could be enhanced by: 1) accommodating remain and future rules and examples inside and outside the testing document that recently cannot be handled or gave incorrect result; and 2) enriching the particular words repository.</p>
<p>B1-0026 16:30-16:45</p>	<p>JavaRelationshipGraphs (JRG): Transforming Java Projects into Graphs using Neo4j Graph Databases Ritu Arora and Sanjay Goel</p>

SESSION II

	<p>Birla Institute of Technology and Science, India</p> <p>ABSTRACT Understanding dependency relationship between various program elements in an object-oriented system is essential for many software engineering applications. In this paper, we propose a novel approach of transforming a Java project into a connected graph comprising of program elements (represented as graph nodes) connected to each other using ownership and dependency relationships (represented as edges). These graphs, named as JavaRelationshipGraphs (JRG) are created and stored using Neo4j Graph Database. Additionally, the proposed JavaRelationshipGraphs framework provides details about the two-staged conversion process along with the algorithms involved. The JRG framework uses compiled Java project to obtain the corresponding graph, which can be effectively visualized and queried using the Neo4j browser. JRG is capable of representing most of the important object-oriented features like inheritance, encapsulation, method overloading and overriding. Hence, they are suitable for use in software engineering applications like program dependence analysis, code mining, etc.</p>
<p>B1-0040 16:45-17:00</p>	<p>Automated Modular Invertebrate Research Environment Using Software Embedded Systems Mehdi Mekni and Ashish Jayan St. Cloud State University, USA</p> <p>ABSTRACT In this paper, we propose the first model of an embedded system involving software and hardware components for complex animal behavior analysis. Currently, a monitoring system that automatically collects, processes and analyzes data from an invertebrate research environment does not exist. One solution to this problem is Software Engineering (SE). SE is the application of a systematic, disciplined, quantifiable approach to solve a real-world problem by designing, developing, operating, and maintaining software that controls a complex hardware platform. In order to demonstrate the feasibility and validate our model, we will be applying AMIRE to the study of Madagascar Hissing Cockroaches behaviors. While the use of Madagascar Hissing Cockroaches as a species for training and investigation in behavior analysis grows in popularity, limitations in knowledge and research design hampers the field's ability to work effectively with this species.</p>
<p>B1-0058 17:00-17:15</p>	<p>A Systematic Literature Review of Improved Knowledge Management in Agile Software Development Mochamad Umar Al Hafidz and Dana Indra Sensus Universitas Indonesia, Indonesia</p> <p>ABSTRACT Agile Software Development (ASD) is an adaptive software development approach that easily adapts to changing software requirements. It offers an advantage in time</p>

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	<p>management but has disadvantages such as lack of software documentation and knowledge management. This research aims to understand more about research development in the knowledge management improvisation in Agile Software Development by collecting various themes of improved area and method used. To achieve this goal, 226 articles written in 2009-2018 are screened by using Kitchenham method to produce 15 best articles. This systematic literature review (SLR) results in a summary of improvements in knowledge management. The summary includes various approaches of several themes such as documentation, tools or technology, and others. The areas that need improvement are tools for supporting communication and documentation. The suggested improvement that has been proposed by researcher focuses mostly on artifact documentation, decision making, effort estimation and tools. In these studies, research question can be identified, analyzed, and answered.</p>
<p>B1-0049 17:15-17:30</p>	<p>Literature Review on Test Case Generation Techniques Novi Setiani, Ridi Ferdiana, Paulus Insap Santosa and Rudy Hertanto Universitas Gadjah Mada and Universitas Islam Indonesia Yogyakarta, Indonesia</p> <p>ABSTRACT Test case generation is a testing stage that requires the greatest resources among other stages so it has significant impact on the effectiveness and efficiency of software testing. Test case is a pair of input and output that will be executed by the tester whose aim is reveal the failures in software under test (SUT). For decades, this topic has become one of the most active topics in research on software testing. It has been proved by a variety of techniques and diverse tools proposed. In last decade, research in the field of test case generation experienced some progress. Nowadays, software testing is challenged to be able to test complex computation software that intensively interact with another system. The aim of this study is to give an up-to-date and overview of research in test case generation researches.</p>
<p>B1-0064 17:30-17:45</p>	<p>Using Interactive Mouthguard as Alternative Control Method and Improve Mobile Gaming Experience With Self-adaptive Human-Computer Interface Shih-Chieh Liao, Fong-Gong Wu and Shu-Hsuan Feng National Cheng Kung University, Taiwan</p> <p>ABSTRACT This research attempts to introduce a new way for users to interact with their devices in gaming session. Using interactive mouthguard as a new method of input, the new user interface system will be able to react to the user without them physically tapping the screen, adapt to the user, reduce the amount of direct hand control, making the control more intuitive and streamline the whole user experience</p>
<p>B1-0020 17:45-18:00</p>	<p>Predict: A Mobile Application for Predicting the Students' Career using Naïve Bayes Algorithm Risty M. Acerado, Roselia C. Morco, John Richard Santos, Janina Jasmin Carpio and Hannah Aubrey Isanan</p>

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	<p>Technological Institute of the Philippines, Philippines</p> <p>ABSTRACT</p> <p>In today's competitive economy, a lot of graduating students from different programs find it hard to look for the appropriate job after graduation that is related with their undergraduate programs. The proposed PredICT mobile application using Naïve Bayes algorithm is designed to help the students achieve their career goals by predicting the jobs depending on their skills. With the predicted job, the students can have more understanding of the required skills of the career they would most likely pursue. The result of the tests and evaluation shows that most users agreed or strongly agreed on the application's software quality.</p>
<p>B1-0023 18:00-18:15</p>	<p>How to Build Behavioral Intention on Start up Business of Mobile Application Joseph M J Renwarin Institut Teknologi dan Bisnis Kalbis (kalbis Institute) Indonesia,Indonesia</p> <p>ABSTRACT</p> <p>Indonesia is the big market for Internet of things because of bonus demography. The gap phenomenon that the low increasing of internet for business transaction user in Indonesia, only 3.63 % of world internet users. Because of internet of things is the new concept in Indonesia, this study aims to analyze and evaluate the behavioral intention users of business application. The research method is quantitative approach and survey method by questioners user disbursement. The number of user respondents are 248 respondents. The researcher use product quality to measure of behavioral intention. Perceived value and customer satisfaction as mediating variables. With t table 1.960 as standard, the research result showed that the positively affect are Product quality on mobile application to behavioral intention (2.339), perceived value to behavioral intention (2.085), perceived value to satisfaction (3.347), product quality on mobile application to behavioral intention (2.087). The negatively affect are product quality on mobile application to perceived value (0.422) and product quality product quality to satisfaction (0.23).</p>
<p>B1-0062 18:15-18:30</p>	<p>Requirement Elicitation Framework for Child Learning Application - A Research Plan Mira Kania Sabariah, Paulus Insap Santosa and Ridi Ferdiana Universitas Gadjah Mada, Indonesia</p> <p>ABSTRACT</p> <p>Requirements elicitation are the initial stages in requirements engineering and are crucial stages. Failure in the steps of requirements elicitation can lead to a lack of definition of user needs for the application so that it has an impact on the quality and usability of the software produced. That will also affect the application of children's education, where without involving children in the elicitation process, it can make the software built not by the age development needs of the child. Failure in requirements elicitation occurs because of lack of knowledge of analysts in communicating and choosing elicitation techniques. Both components have a close relationship with the</p>

SESSION II

type of users who will become respondents. Nowadays, requirements elicitation framework tends to pay more attention to adults and parents, while for children it is still not found. Children have different characteristics with adults and parents, so it needs to be considered in carrying out approaches or techniques in performing elicitation. The selection of elicitation techniques that are not by the characteristics of children can cause failure in exploring the needs of children for child learning applications built. Based on these problems, we need a requirements elicitation framework in children's education applications. The requirements for the elicitation framework are expected to make it easier for child learning application developers to get application requirements that are appropriate for the child's developmental age.



Dinner Banquet @ Unki Warung Seafood Singaraja-temukus Street

<18:45-20:00>

SESSION III

January 11, 2019

Session III

[Computer and Information Network Technology]

13:30-15:45

Room 2

Chaired by TBA

9 presentations-

B1-0019, B1-0030, B2-0020, B1-0006, B1-0010, B1-0037, B1-0068, B1-0069, B1-0024

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SESSION III

<p>B1-0019 13:30-13:45</p>	<p>A Computer System Quality metric for Infrastructure with Configuration Files' Changes Noriko Hanakawa and Masaki Obana Hannan University, Japan</p> <p>ABSTRACT We propose a system quality metric for computer infrastructure development. The feature of the metric is the usage of configuration files. The growths and changes of configuration files present characteristics of infrastructure development. The proposed metric consists of 4 element metrics and a total metric. The proposed metric was applied to a real large-scale project. The metric helps us understand how the configuration files were developed. There are two patterns, one is growing little by little, and another is suddenly large growth and suddenly decreasing. For evaluation of the metric, we compared the metric values with system faults that occurred in the real running. As a result, the two patterns of configuration files' development are not related to the system faults. However, the one element metric Scale is related to the system faults. Therefore, the Scale element metric may present system quality in the target project.</p>
<p>B1-0030 13:45-14:00</p>	<p>Development of Instrument for Assessing Information Systems Continuance Use Mohd Zuhan Bin Mohd Zain and Ab Razak Bin Che Hussin Universiti Teknologi Malaysia, Malaysia</p> <p>ABSTRACT Information systems (IS) or computer based systems plays a critical role in an organization's success. IS can facilitate organization through several courses of information management including gathering, processing and disseminating information. However, lack of research in continuance use of IS poses an obstacle in IS usage in an organization. Previous studies have examined continuance intention using the Expectation Confirmation Model (ECM) as it provides a basis of investigating IS continuance. ECM employed mainly the three factors or constructs to explain behavioural intention, namely confirmation, perceived usefulness, and satisfaction. However, the expansion in today's business requires a further integration with other constructs such as experience, self-efficacy, task technology fit, utilization and perceived support. Thus, this paper proposes a new comprehensive IS continuance model through the extension of ECM by integrating new constructs from other related theories which include Task-Technology Fit (TTF), Social Cognitive Theory (SCT), Social Support Theory (SST), and Unified Theory of Acceptance and Use of Technology (UTAUT). The items are grouped into nine constructs modified to suit the context of the study. The proposed model and measurement items will provide useful knowledge for exploring ISC research.</p>
<p>B2-0020 14:00-14:15</p>	<p>Analysis of SSD Internal Cache Problem in a Key-Value Store System Won Seob Jeong, Yongseok Won and Won Woo Ro Yonsei University, Republic of Korea</p>

SESSION III

	<p>ABSTRACT</p> <p>In this paper, we analyze how the journaling mechanism on a key-value store has an impact of the performance of a Solid State Drive (SSD). Journaling is a widely used technique in a modern database management system to provide high reliability and fast recovery from system failures. However, journaling mechanism writes the same data twice to both the journal area and data area and this write amplification causes performance degradation by increasing the storage traffic. Eliminating the impact of the write amplification is very challenging. This observation motivated us to change the approach for solving the performance degradation. Instead of handling the problem in system level, we focused on internal SSD level. For the purpose, we analyze the performance bottleneck of an SSD when journaling mechanism is used for a key-value store. A key-value store system model is proposed for the analysis. This paper reveals that frequent write operation to journal area can cause serious SSD performance degradation by increasing the overhead of cache line eviction.</p>
<p>B1-0006 14:15-14:30</p>	<p>Social Networking Sites as Communication Tool for Dengue Related Healthcare and Wellness Information</p> <p>Rathimala Kannan, Kannan Ramakrishnan and Adedapo Oluwaseyi Ojo Multimedia University, Malaysia</p> <p>ABSTRACT</p> <p>Despite the fact the government agencies and healthcare organizations make numerous efforts to prevent and control dengue epidemic, still it is a challenge. Lack of citizen’s awareness of the infectious disease is one of the reasons that hampers their effectiveness. The need to re-examine and understand how the public at large view the dengue monitoring and prevention efforts motivates this study. Knowing the popularity and reach of social networking sites (SNS), understanding their strengths and weaknesses as health education tool would be a timely call. This empirical study aims to integrate social support theory to an existing theoretical model to test the users’ intention to use SNS for healthcare and wellness information focusing on dengue related information. The current study found that Malaysians preferred to use SNS for dengue related healthcare and wellness information. This result suggests that dengue related monitoring and prevention activities can consider to use SNS as a potential communication tool to increase its reach to citizens.</p>
<p>B1-0010 14:30-14:45</p>	<p>Berkooliah: Utilizing Social Media to Encourage Youths in Pursuing Higher Education</p> <p>Fadelia Deby Subandi, Eko Hermanto, Nanda Shafira Keumala, Dyah Ayu Dewianti Putri and Sherly S. Turnip Universitas Indonesia, Indonesia</p> <p>ABSTRACT</p> <p>In Indonesia, there is a high number of people that stopped looking for higher opportunities in education after finishing the compulsory program set by the government (12 years). This phenomenon opposes what the Sustainable</p>

SESSION III

	<p>Development Goals (SDGs) designed by United Nations regarding what the UN wished for the world’s universal development goals to be achieved in 2030. Across 17 domains of goals, the fourth goal is to ensure inclusive and equitable quality education and promote lifelong opportunities for all, and in the third indicator we found that we should ensure equal access to affordable education including university. It is expected that access to higher education leads to better opportunities landing jobs that brings economic stability to family, which in turns leads to better well-being for the next generation. As we know, youth population today would be the leader of Indonesia in the upcoming decade, and there is a shift to information access from traditional media to social media. We believe by utilizing social media to give complete information about university, we can encourage youths to pursue higher education which in turn will benefits for them individually and society as a whole. According to this issue, we decided to make “Berkooliah”, an Instagram account (Instagram.com/berkooliah) as the tool of the intervention programme. After five months of running the programme from April to September 2018, we can conclude that this programme goes well as the initial plan since the data shows a high enthusiasm and positive feedbacks from the online community.</p>
<p>B1-0037 14:45-15:00</p>	<p>Security and Cost Optimization Auditing for Amazon Web Services An Quoc Huy and Phan Duy Hung FPT University, Viet Nam</p> <p>ABSTRACT</p> <p>There are many major security companies involved in developing security features on the cloud. According to Gartner, by 2020, 95% of cloud security errors will be the customer.</p> <p>There exists some tools and services for security in the Amazon Web Services (AWS) itself. These are services with a very specific function of applying security to AWS. However, it can be difficult for users to understand how to use and apply them.</p> <p>This paper presents a software solution with the following goals: audit the services that are using security-enabled AWS; get the current status of services usage that is wasted, thus users can optimize the use of cloud services (AWS) to save costs. For an enterprise using multiple AWS accounts, the users can manage the audit quickly. The system is free and very simple to use.</p>
<p>B1-0024 15:00-15:15</p>	<p>Mapping the Buried Pipelines from GPR and GPS Data Zhou Xiren, Chen Huanhuan and Li Jinlong University of Science and Technology of China, China</p> <p>ABSTRACT</p> <p>The operation of a modern city is inseparable from the underground pipelines, and mapping the buried pipelines has long been addressed as an issue. In this paper, a novel model is proposed to map the underground pipelines by taking GPR and GPS data as the input, and output the pipeline map of the detected area. Firstly, the GPR data is processed, a coordinate system of the detected area is established, and the</p>

SESSION III

	<p>input and output of mapping the buried pipelines are normalized. After that, the initial pipeline map with the number of buried pipelines are determined, and then the proposed model calculates the probability of which nearby pipe generates the pipeline information obtained at each detected point, classifies detected points into different classes, and connects and fit multiple detected points in each class to obtain the pipeline map of the detected area. Experiments on real-world datasets are conducted, of which the experimental results demonstrate the effectiveness of our model.</p>
<p>B1-0069 15:15-15:30</p>	<p>Grid Base Energy Efficient Coverage Aware Routing Protocol for Wireless Sensor Network Kusum Lata Jain and Smarnika Mohapatra Manipal University Jaipur, India</p> <p>ABSTRACT Wireless network occupies a special position in networking since it has an easy and hassle free installation, less expensive to save time and money in different ways. But these resource scarce network required special management as they are human unattended. With new technological advancement WSN also required new routing as the major energy in the network is consumed for data transmission. Using wireless communication energy and coverage are two key issues in wireless sensor networks. This paper presents a routing algorithm which preserve coverage of the network as well reduce energy consumption that leads to increased network lifetime. A comparison to benchmark algorithm for the issue LEACH and CPCP is also present. Simulation results shows that proposed algorithm</p>
<p>B1-0068 15:30-15:45</p>	<p>Optimization Of Heterogenous Sensor Networks with Clustering Mechanism Using Game Theory Nina Hendrarini, Muhamad Asvial and Riri Fitri Sari Universitas Indonesia, Indonesia</p> <p>ABSTRACT Wireless sensor network is considered as the most applicable standards for the monitoring system. The optimization that relates to wireless sensor network planning, design, deployment, and operation has to consider many parameters so that there is no conflict among the sensor especially in a heterogenous network with various platforms. In such a network, energy consumption determines the system stability. Clustering mechanism in a wireless sensor network can also simplify network management process. Distributed energy efficient clustering (DEEC) is used as a clustering protocol. This protocol work based on residual energy. This protocol is robust enough, but in a certain condition, it has a pit of weakness. Game theory is being proposed as an optimization algorithm of the clustering process. It is used to adjust the probability of node to become a cluster head based on residual energy to prolong cluster lifetime. Threshold value can be more accurate by using selfish behavior game theory algorithm. The weighted factor is a factor that makes the</p>

SESSION III

resolution of probability values more real.



Coffee Break

<15:45-16:00>

SESSION IV

January 11, 2019

Session IV

[Computer Theory and Application]

16:00-18:45

Room 2

Chaired by TBA

11 presentations-

B1-0048, B1-0015, B1-0065, B1-0070, B1-0057, B1-0051, B1-0061, B1-0029, B1-0004, B1-0034,
B2-0014

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SESSION IV

<p>B1-0048 16:00-16:15</p>	<p>Wireless Remote Shooting Training Controller with Multiple Targets using Impact Vibration Analysis Noh-Sik Park, Junhwi Park and Dong-Hee Lee Kyungshung University, South Korea</p> <p>ABSTRACT This paper presents an advanced automatic firearm shooting control system for the military training ground. To detect the correct hit and bounded bullet or soils impact, the impact energy and impact signals are analyzed. The proposed two-level impact comparator and the resettable impact energy detector are used to classify the correct hit or un-correct hit from the crash vibration. The low level and high level comparator from the vibration sensor generate a different signal patterns according to the crashed materials to the target such as hit bullet, sand or scattered small stones. The signal patterns are compared to the correct hit pattern then, the determination of the hit is classified in the proposed system. The 3-groups 72 targets are wireless communicated to the main controller with group router using Zig-bee to reduce the installation cost and more expandability.</p>
<p>B1-0015 16:15-16:30</p>	<p>A Scalable Operational Framework for Requirements Validation Using Semantic and Functional Models Issa Atoum The World Islamic Sciences and Education, Jordan</p> <p>ABSTRACT A successful operational software depends on adequacy and degrees of freedom in requirements definitions. The software developer in conjunction with the customer validates requirements to ensure the completion of the intended use and the capability of the target application. Notwithstanding, requirements validation is time-consuming, effortless and expensive, and many times involves error-prone manual activities. The difficulty of the problem increases with an increase in the application size, the application domain, and inherit textual requirements constructs. Current approaches to the problem are considered as passive-defect aggregations, domain-specific, or rather fine-grained with formal specifications. We propose a scalable operational framework to learn, predict, and recognize requirements defects using semantic similarity models and the Integration Functional Definition methods. The proposed framework automates the validation process and increases the productivity of software engineers online with customer needs. A proof of concept shows the applicability of our solution to requirements inconsistency defects.</p>
<p>B1-0029 16:30-16:45</p>	<p>Innovative Tourism Navigation Operation Process And Decision making Chia-Chieh Lee and Fong-Gong Wu National Cheng Kung University, Taiwan</p> <p>ABSTRACT Nowadays, with the development of transportation and satellite technology, people</p>

SESSION IV

	<p>can travel everywhere, and are allowed to take in-depth trips and to go backpacking with their own devices rather than travel agency. Moreover, travel navigation application assists us in locating our location. Compared with paper maps, navigation application has more functions, since it can locate tourist's location and provide a variety of different information. With complex operation and information, the design of navigation can be more multiple, such as functions, interfaces and operation design. The study will develop innovative tourism navigation operation process for smartphone users, and will be more indicative for future travel navigation design.</p> <p>The study aims at the design of innovative tourism navigation operation process and decision making for tourism navigation system. The study combines the Location-based services (LBS) components in navigation knowledge with wayfinding tasks and the information processing model. At the first stage, with contextual inquiry, the navigation operating behaviors of users are observed and analyzed in accordance with information processing model. At the second stage, users interview is organized through oriented search, following a marked trail, piloting between landmarks and referring to a cognitive map in wayfinding tasks; therefore, the innovative tourism navigation operation process model is built.</p>
<p>B1-0070 16:45-17:00</p>	<p>An Improved Initialization Method using Firefly Movement and Light Intensity for Better Clustering Performance Maria Lolita G. Masangcap, Ariel M. Sison, Ruji P. Medina Technological Institute of the Philippines, Philippines</p> <p>ABSTRACT K-Means and EM algorithms are the most well-known clustering algorithms because they are simple, easy to understand and implement. However, both algorithms are sensitive to initial seeds which are randomly selected leading to slow convergence and less reliable clustering results. In this paper, an improved initialization method adopted the concept of light intensity and firefly movement to search for better initial seeds. Numerical experiments were conducted to evaluate the performance of the Enhanced K-Means and EM using faculty performance evaluation ratings as the dataset. The experiments showed that the implementation of the improved initialization method before the clustering process resulted in a higher intra-cluster and lower inter-cluster similarity. Also, there are seventy-seven percent (77%) and eighty-four percent (84%) decrease in the runtime execution while there are forty four percent (44%) and twenty seven percent (27%) fewer number of iterations recorded in the implementation of the enhanced KMeans and EM algorithms respectively.</p>
<p>B1-0057 17:00-17:15</p>	<p>Modeling and Design of the Wireless Controlled Self-Driving Security System using In-wheel Drives JongNam Bae, SeungJun Kim and Dong-Hee Lee KyungSung University, South Korea</p> <p>ABSTRACT</p>

SESSION IV

	<p>This paper presents a modeling and design of the wireless controlled self-driving security system using in-wheel drives. The designed system has the wireless main controller, sensor boards, HD-camera, up-down control board and two in-wheel drives to control the In-wheel BLDC(Brushless DC) motor. Each board is connected by the serial communication and the main controller is wireless connected to the remote controller.</p>
<p>B1-0051 17:15-17:30</p>	<p>An Enhanced Accuracy of a Prediction Model Having a Modified Genetic Algorithm with Cross-Average Crossover Markdy Y. Orong, Ariel M. Sison and Ruji P. Medina Misamis University, Philippines</p> <p>ABSTRACT</p> <p>Prediction models helped an organization in decision-making activities. However, enhancing an accuracy of a prediction model is an ongoing subject of research in the field of information technology. The study introduced a new prediction model having a modified genetic algorithm (GA) with Cross Average Crossover operator and rank based selection function to the existing model having k-means segmentation combined with C4.5 algorithms. Comparison of the accuracy of the existing model and the new model is presented in the simulation using the 4,410 records of student leaver’s in a university. Simulation results showed that the new prediction model having GA with CAX and rank-based selection outperformed the model with generic GA with spliced crossover and roulette wheel selection method with respect to its accuracy.</p>
<p>B1-0061 17:30-17:45</p>	<p>An Overview of Learning Algorithms and Inference Techniques on Restricted Boltzmann Machines (RBMs) Esti Merindasari, M. Rahmat Widyanto and T. Basaruddin Universitas Indonesia, Indonesia</p> <p>ABSTRACT</p> <p>Restricted Boltzmann Machines (RBMs) is one of machine learning’s methods which within past decades, the development of RBMs has quite increase. Researches of RBMs focused on theories and applications of RBMs. The application of RBMs has proofed that RBMs good at finishing many tasks, such as feature extraction method, document modeling, representation learning, classification and others. The RBMs’ theories also have great movements, such as the development of the learning algorithm and inference techniques of RBMs. The key factors making the RBM success on finishing task are the learning algorithm and inference techniques. They motivated the development of inference techniques which successfully improved the deep neural network (DNN) performance. The aim of this research is reviewing the various types of RBMs as the application side, and the development of learning algorithm and inference techniques as theoretical side. Hopefully, it could motivate more development on the RBMs in order to contribute on overcoming implementation tasks especially on image processing tasks.</p>

SESSION IV

<p>B1-0065 17:45-18:00</p>	<p>An Analysis of Parameters of Convolutional Neural Network for Fire Detection Geumyoung Son, Marshall Wiranegara, Jangsik Park and Dong-Hee Lee Kyungsoong University, South Korea</p> <p>ABSTRACT In this paper, a deep learning method is proposed to detect fire effectively using video of surveillance camera. Based on AlexNet model, classification performance is compared according to kernel size and stride of convolution layer. Dataset for learning and inference are classified into two classes as normal and fire. Normal images include clouds and foggy and fire images include smoke and flames, respectively. As results of simulations, it is shown that the larger kernel size and smaller stride shows better performance.</p>
<p>B1-0004 18:00-18:15</p>	<p>A Context-Aware Multi-Channel Messaging Framework for African Banks: Design and Implementation Olusola Salami and Jabu Mtsweni University of South Africa, South Africa</p> <p>ABSTRACT Customers of Financial Service Institutions (FSIs) subscribe to different types of alerts occurring on their accounts. The Single Channel Messaging (SCM) model is predominantly used by most Banks in Africa. However, the number of supported platforms and messaging formats limits the SCM Model and in the case where FSIs make use of multiple channels, these are not integrated. In addition, SCM does not provide a way of distinguishing between communication channels based on urgency or priority of the messages which need to be delivered to the customers. Consequently, this research work investigated and reviewed the existing approaches, publicly available platforms, web and mobile applications used by FSIs for interacting with their clients. Based on this, we derived the technical requirements for the implementation of a model for Multi-Channel Messaging (MCM) that addresses the weaknesses of SCM. Further, in this paper we present the proposed framework for the MCM model. The model was implemented using the problem-centred approach of the Design Science Research Methodology to derive the requirements of the MCM system from the SCM system, we further used Use-Case evaluation method to analyse the outcome of the design.</p>
<p>B1-0034 18:15-18:30</p>	<p>E-Government Usability Evaluation: Insights from A Systematic Literature Review Ria Lyzara, Betty Purwandari, Muhammad Fadhil Zulfikar, Harry Budi Santoso and Iis Solichah Universitas Indonesia, Indonesia</p> <p>ABSTRACT E-Government aims to deliver benefits to government and citizens by improving transparency, efficiency, trust, and citizen participation. However, e-government initiatives face several barriers. One of them is poor usability. To advance quality of</p>

SESSION IV

	<p>usability, literatures indicate that usability evaluation is a key success factor. There are many approaches to conduct usability evaluation. Each of it has advantages and challenges. On the other hand, there are several aspects that must be considered related to usability evaluation in e-government context. It includes large stakeholders and their diversity, extra needs for ethical practices, as well as high privacy. Therefore, it is crucial to investigate the right usability evaluation method in e-government. In order to address this issue, a study using Systematic Literature Review (SLR) was conducted to identify the suitable usability evaluation methods. There are 519 literatures that have been selected in the initial stage. It was then followed by an extraction process, which produced 22 selected references. Each method was grouped into usability testing, inspection, and inquiry. These results can guide academics and practitioners to carry out usability evaluation in e-government.</p>
<p>B2-0014 18:30-18:45</p>	<p>A Study on ELM(Election pledge management for Local governors Model) Based on Machine Learning-Focused on On-Nara Document System- Hong-Jae Lee, Kyeong-Seok Han, Tae-Hyun Kwon and Sang-Ung Han Soongsil University, South Korea</p> <p>ABSTRACT</p> <p>The background of this paper is new social trend of more public's interest in the implementation of the pledge of the local governors who were elected by citizens. In these days the election pledge for enhanced local governmental policies became more important. The objective of this paper is to suggest the model of election pledge management for local government heads based on machine learning focused on On-Nara document system. The system is currently used by Korean governmental organizations for document processes. The methods to prove a comparative advantage of the proposed model are the comparison tests between As-Is system and To-Be system based on a few criteria such as time, efficiency and extraction rate. Through this model, local governors could present systematic goals and road map of pledges in order to get closer to citizens and local residents. In other words, this study proposes a model, so called ELM(Election pledge management for Local governors Model), for efficiently extracting necessary data from planned and implemented details of pledge projects that are prepared in the form of unstructured documents. We carried out research to prove empirically our machine learning-based model is more efficient than current semi-manual system with some automated processes in order to manage efficiently the pledge project implementation of local governors to get the results. In conclusion, this research proved that the proposed model is more competitive than the existing models. In the 4th industrial revolution era the new approach using machine learning and big data will become more popular.</p>



Dinner Banquet @ Unki Warung Seafood Singaraja-temukus Street

<18:45-20:00>

SESSION V

January 12, 2019

Session V

[Image and Signal Processing]

08:00-09:45

Room 1

Chaired by TBA

7 presentations-

B1-0027, B1-0035, B2-0004, B2-0015, B2-0024, B1-0042, B1-0050

***Note:**

Please arrive 30 minutes ahead of the sessions to prepare and test your PowerPoint.

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<p>B1-0027 08:00-08:15</p>	<p>Enhancing Facial Component Analysis Siska Pebiana, R. Widyanto, T. Basaruddin and Liliana Dewi Universitas Indonesia, Indonesia</p> <p>ABSTRACT Capturing non-verbal information from face is the most important phase in emotion recognition through facial expression. In order to do that, it is need to find suitable features extraction method that could help to figure out the meaning from given face. Inspired by Liliana Dewi[1] that used geometric feature for analyze facial component with a good result accuracy around 98.59%. So in this paper we try to propose the other approach of those method to enhance the result of facial components analysis. We use Hellen dataset to trained Active Appearance Model (AAM), use pre-processing image enhancement and for validate our Fuzzy Rule Based System for extract the feature on extended Cohn Kanade (CK+) dataset. The result gives better in recognize facial components than previous work with accuracy around 99.36%.</p>
<p>B1-0035 08:15-08:30</p>	<p>Performance Evaluation of Enhanced RC6 Permutation-Diffusion Operation in Securing Images Catherine Bhel B. Aguila, Ariel M. Sison and Ruji P. Medina Technological Institute of the Philippines, Philippines</p> <p>ABSTRACT Several modifications and analysis on encryption performance and security were studied and evaluated by several researchers to measure the efficiency and quality of the proposed enhancement in the encryption method. In this paper, the authors evaluated the performance of the image encryption using the enhanced RC6 permutation-diffusion operation integrating the concept of cyclic-shift permutation. Statistical analysis, key space analysis, and runtime execution analysis were conducted based on considered metrics such as key sensitiveness, histogram and maximum deviation, mean squared error, mean value analysis and the speed measurement of encryption and decryption process. Based on the numerical and visual results, the good qualities of encryption using this method were achieved.</p>
<p>B2-0004 08:30-08:45</p>	<p>Person Re-identification through Clustering and Partial Label Smoothing Regularization Jean-Paul Ainam, Ke Qin, Guisong Liu and Guangchun Luo University of Electronic Science and Technology of China, P.R. China</p> <p>ABSTRACT In this paper, we propose a new label smoothing regularization scheme for person re-identification. We first use an unsupervised method for discriminative learning representation. We apply a clustering algorithm on the learned feature to partition the training set into k groups of equal variance and derive a shared space for similar images. Secondly, a GAN model is fed with each cluster to produce samples with relatively similar features to the original space. Our method consists of assigning an</p>

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	<p>adaptive smooth label distribution to each generated sample according to their original cluster. To train our model, we define a new objective function which takes into account the generated samples and fine-tuned a CNN baseline using the objective function. Our model learns to exploit the samples generated by the GAN model to boost the performance of the person re-id by improving generalization. Extensive evaluations were conducted on four large-scale datasets to validate the advantage of the proposed model.</p>
<p>B2-0015 08:45-09:00</p>	<p>Real Time Floor Sitting Posture Monitoring using K-Means Clustering Iwan Aang Soenandi, Meriastuti Ginting and Budi Harsono Krida Wacana Christian University, Indonesia</p> <p>ABSTRACT</p> <p>The production of Emping Melinjo is one of cottage industries in Cilegon, Banten, which has a great potential to grow because of the high demand of the product. The major workforces in the production are females who do the labor at home. However, due to the traditional practice in the activity, workforces conduct their activities while sitting on the floor and this turned to be a potential health problem during work, such as LBP (Low Back Pain). In this paper, we proposed to build the data acquisition system for working posture and build the monitoring system that can prevent static postures. This proposed system is based on positioning posture with data clustering method using pressure measurement by 4 position sensors. Based on these 5 clusters, we defined the tracking postures as: in the middle position, backward position, forward sitting posture, and laterally tilted left or right sitting posture.</p>
<p>B2-0024 09:00-09:15</p>	<p>Epileptic Seizure Detection on EEG Signals based on Bandwidth Features Diah P. Wulandari, Nomala G. P. Putri, Yoyon K. Suprpto, Santi W. Purnami, Anda I. Juniani and Wardah R. Islamiyah Institut Teknologi Sepuluh Nopember Surabaya Indonesia</p> <p>ABSTRACT</p> <p>In this paper, we discuss the classification of seizure conditions in epilepsy. Epilepsy is one of the neurological brain disorders caused by functional or structural damage. Electroencephalography is used to evaluate brain disorders for determining epilepsy. The results of the electroencephalogram (EEG) evaluation are used to make the classification of seizures. The EEG dataset for making an evaluation is taken from "Clinical für Epileptologie, Universität Bonn" called the public data which contains 500 EEG dataset and from Airlangga University Hospital Surabaya (RSUA) which contains 500 EEG dataset too. EEG dataset obtained are decomposed using Empirical Mode Decomposition (EMD) and their result is Intrinsic Mode Function (IMF). The result of IMF analyzed by Hilbert transform is used to get bandwidth feature extraction namely amplitude modulation bandwidth (BAM) and frequency modulation bandwidth (BFM). The features of BAM and BFM are used as input to classify EEG seizure and nonseizure with the Support Vector Machine (SVM). The results show that the use of all IMFs yielded the best accuracy from public data (97.3%) and the best average</p>

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	accuracy on RSUA data (96.5%).
B1-0042 09:15-09:30	<p>Analysis of Frequency on Sound of Genta Based On Fast Fourier Transform Method I Gede Aris Gunadi and I Gusti Nyoman Yudi Hartawan Universitas Pendidikan Ganesha, Indonesia</p> <p>ABSTRACT Genta is one of the ceremonial equipment that is very sanctified for Hindus, especially Hindus in Bali. For the Balinese Hindu Society, the sound of genta is believed to be able to deliver the prayer of worship before God. Frequency is one of the important features of sound. In this study a sound frequency analysis was performed on sound of genta, and aimed to determine the characteristics of sound based on the sound frequency feature. FFT (Fast Fourier Transform) is used to determine the frequency component of genta's sound. The frequency of sound consists of the basic frequency (f_0) and the prominent frequency (f_1, f_2, f_3). In this study used two types of genta, ordinary genta and Uter genta. The results showed average values for the basic frequency (f_0), respectively for regular Genta and uter genta were 750 Hz and 510 Hz.</p>
B1-0050 09:30-09:45	<p>Mackey-Glass Chaotic Time Series Prediction Using Modified RBF Neural Networks Akhmad Faqih, Aldo Pratama Lianto and Benyamin Kusumoputro Universitas Indonesia, Indonesia</p> <p>ABSTRACT The characteristics of a nonlinear dynamical system within chaotic system is more intensely studied recently, due to many real-world applications of the nonlinear chaotic system are increasing. For characterizing the ordinary system, usually the relationship between the linearity and the nonlinearity of parameters in the system is needed to be firstly derived, however, creating the mathematical model of the real chaotic system is still a problematic since insufficient basic physical phenomena should be analyzed. Hence, artificial neural networks approach that performed based on nonlinear mathematical model is quite adequate to be used to analyze the chaotic phenomena within the system. Solving the multi-step ahead prediction problem of time series chaotic system is one of the top challenging issues, especially on how to obtain a higher prediction rate. In this paper, a modified Radial Basis Function Neural Network (RBF-NN) is developed and be tested for predicting the future state of a Mackey-Glass equation as the chaotic system. Results experiments show that using training testing paradigm of 50%:50%, the calculated of confidence level accuracy of the neural-predictor system is satisfied for up to 30-steps ahead prediction.</p>



Coffee Break

<09:45-10:00>

SESSION VI

January 12, 2019

Session VI

[Service Science and Information Management]

10:00-12:15

Room 1

Chaired by Asst. Prof. Roseclaremath A. Caroro,
Technological Institute of the Philippines, Philippines

9 presentations-

B1-0031, B1-0036, B1-0056, B1-0060, B1-0055, B2-0019, B1-0016, B1-0025, B1-0071

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<p>B1-0031 10:00-10:15</p>	<p>Enhancing Public Accountability through Digitalization of River Basin Management: The Case of Garang River Wijanto Hadipuro, Djoko Suwarno and Suyanto Edward Antonius Soegijapranata Catholic University, Indonesia</p> <p>ABSTRACT Although Garang River Basin has belonged to priority basin to be rehabilitated since 2010, today the quality of the water still cannot meet the requirements of drinking raw water. A combination of wireless sensors network, data owned by actors (government and non-government) involved in the management of the river, and Volunteered Geographic Information (VGI) for river basin management are introduced in this paper to solve the problems. And, by inviting public citizens as VGI to get involved in public service management, it will improve the accountability of the (government) public service offices. The public can monitor the quality and the quantity of the river water in a real-time basis through Facebook Group, and they can report the changes of the quantity and the quality of the water to the authority and also monitor the response to their reports.</p>
<p>B1-0036 10:15-10:30</p>	<p>Street vendor management-Why not? Hoang Huu Son, Tran Thi Phuong Lien, Nguyen Tien Thao, Nguyen Tuan Nam and Hoang Van Anh Vietnamese Academy of Finance, Viet Nam</p> <p>ABSTRACT Nowadays, managing informal economics sectors in general and street vending in particular in developing countries still face various inadequacies, especially when it comes to investigation and handling illegal behaviors: selling fake or low-quality products, harassment and tax evasion. In order to overcome these issues, a new street vendor management system is proposed for replacing manual traditional processes. With the benefit of QR code and mobile techniques, hawkers, customers and authorities can all access to manage and supervise street vending. The paper also suggests changes in public policies for street vendors' management, initial implementations for system evaluation are presented and discussed accordingly.</p>
<p>B1-0056 10:30-10:45</p>	<p>Evaluating the Development of E-Government in Indonesia Alvedi Sabani, Hepu Deng and Vinh Thai RMIT University, Australia</p> <p>ABSTRACT This paper presents an analysis of the challenges for the development of electronic government (e-government) in Indonesia. The study mainly focuses on the implementation of e-government in the transaction stage. The type of e-government is discussed, the stage of e-government development is evaluated, and the progress of e-Indonesia initiative is assessed. There are various obstacles to the development of e-government in Indonesia including poor ICT infrastructure, inadequate human</p>

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	<p>resources, lack of readiness among citizens to use e-government services, and unsupportive environment. Due to these challenges, it is recommended for the Indonesian Government to develop comprehensive programs and progress assessments which include technology, organization, citizen and environment dimensions to support the development of e-government.</p>
<p>B1-0060 10:45-11:00</p>	<p>Integrated e-Business System Architecture for Small and Medium Enterprises Ni Made Satvika Iswari, Eko Kuswardono Budiardjo, Zainal Arifin Hasibuan Universitas Indonesia, Indonesia</p> <p>ABSTRACT Small and Medium Enterprises (SMEs) are organizations that have a tendency to focus only on their business process because they have limitation in terms of resource, both human and financial. E-business is the recommended solution for SMEs to support their business process. E-Business system is a suggested solution for SMEs to support their business processes, where SMEs can use applications in accordance with their organizational characteristics. This system can support business growth in SMEs. But SMEs have very diverse characteristics, based on size, industry sectors, tendency to adopt IT, etc. E-Business solution for SMEs is not a one-size-fits-all solution but need to pay attention to the characteristics of SMEs as the end-users. By adopting the Design Science Research Methodology, this paper proposes an architecture for integrated e-Business System that can be implemented based on the characteristics of SMEs. So that it is expected, SMEs can get e-Business solutions that are in accordance with their characteristics.</p>
<p>B1-0055 11:00-11:15</p>	<p>Building Digital Knowledge System through Mobile Interfaces: the Case Study of Mobile Application for Diabetes Management Maneesh Mathai Koottunkal, Athula Ginige, Uma Srinivasan and Federico Girosi Western Sydney University, Australia</p> <p>ABSTRACT Very high adoption of mobile phones enables the possibility of using mobile phones to empower type 2 diabetes patients to self-manage their diabetic condition by providing timely information in right context through the mobile application, thus facilitating them to make informed decisions. Having identified the lack of such information is badly affecting type 2 patients we embarked on a project to develop a mobile-based information system. Iterative development of interfaces for the mobile application was carried out and its relevance evaluated.</p>
<p>B2-0019 11:15-11:30</p>	<p>A Study on Traditional Medicine Ontology Suganya Selvaraj and Eunmi Choi Kookmin University, South Korea</p> <p>ABSTRACT The traditional medical field needs to be studied more for applying compound reasoning using ontology because traditional medicine treats the patients by finding</p>

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	<p>root cause of the symptoms rather than treating for the symptoms directly. Many countries have their own traditional medicines like traditional Chinese medicine, traditional Korean medicine, Siddha, Ayurveda and Unani. Already many projects are started to work on the ontology development for traditional medicines. In this paper, we analyze and summarize the existing medical ontology researches. This study is useful to understand the existing medical ontology system and also provide an idea to develop and enhance the traditional medicine ontology by reusing existing resources. In this study, we also propose the medical ontology prediction model to predict the seasonal disease by combining medical ontology with Big data analysis.</p>
<p>B1-0016 11:30-11:45</p>	<p>Marketing Strategies of Ecotourism in Siregar Aek Na Las Village, Toba Samosir Mariana Simanjuntak and Santi Manalu Institut Teknologi Del, Indonesia</p> <p>ABSTRACT</p> <p>The efforts to develop ecotourism destinations in the area of Lake Toba, as proclaimed by the Government of Indonesia through the Ministry of Maritime Affairs require special awareness and attention for stakeholders including educational institutions in the area of Lake Toba, especially in Toba Samosir. One of the programs developed is the ecotourism of Lake Toba in Siregar Aek Nalas village. The development of ecotourism is expected to become the main national income that is able to expand economic activities, employment, skills and awareness raising of local tourism as well as enhance the income of the ecotourism sector. Cultural ecotourism, local wisdom, nature are the recreational and tourism activities that utilize the potential of nature. Siregar Aek Nalas is one of the regencies and tourist destinations in North Sumatera. The potential of Aek Nalas includes nature, hot springs from Lake Toba, cultural arts, customs that belong to local wisdom, the natural landscape of Lake Toba, and other uniqueness. The data collection of this study was obtained from survey, FGD, dissemination and analysis of feasibility study of ecotourism. The analysis shows that the basic development and ecotourism development strategy of Siregar Aek Nalas is focused on improving the quality of service through developing the system initiated by the core committee of Guru Ni Laingan Siregar society throughout Indonesia, raising awareness of local communities, utilizing science and technology, diverse cultures, Cemeteries available along the way to Siregar Aek Nalas, weaving, the uniqueness of culinary tourism and especially hot springs from Lake Toba.</p>
<p>B1-0025 11:45-12:00</p>	<p>Developing Interactive Bible Learning Model Based on Mobile for Children Hadi Sutopo, Hindriyanto D. Purnomo, Silaen Sondang Maria, Swati Lee, Altobeli Lobodally and Arie Setiawan Prasida Kalbis Institute, Indonesia</p> <p>ABSTRACT</p> <p>Bible stories have been introduced to children at early ages and continuously learned. The learning process is conventionally conducted in classrooms with books as the main media and lately accompanied by video presentations. However, the current life</p>

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	<p>style in the IT era may shift children learning style. For them, smartphones and other digital media are more interesting than books. This paper is intended to create a mobile-based Bible-learning for children and youth. In developing the application, the researchers conduct qualitative approaches combining Borg and Gall's Research and Development Method with Luther's Multimedia Development Life Cycle. It is the utmost hope that the new IT-based learning model could facilitate easier, more fun and more interesting learning for children and youth. This research is still on going and the researchers would like to present a smartphone-based Bible learning games. Collected data is processed using NVivo, a qualitative software data processing. Research findings show that mobile-based learning including games is the most feasible model.</p>
<p>B1-0071 12:00-12:15</p>	<p>Smart design for medicine-taking reminder: enhancing the effect via compound stimulus Hsiu-Ching Lu, Kai-Yu Tsai and Yang-Cheng Lin Tainan University of Technology, Taiwan National Cheng Kung University, Taiwan</p> <p>ABSTRACT Taiwan will become an aging society. With the trend of aging, health care will be challenged, and the related smart caretaking products will be invented. The purpose of this study is to enhance the effect on medicine-taking reminder with compound stimulus. The study designed two different pill-boxes with diverse scenarios. For the elderly and the young adults, the boxes measured the reaction speed toward light and sound and the satisfaction with operating. This research adopted T-test as statistical method. The study found that (1) No obvious difference in reaction time was detected between the elderly and the young. (2) No obvious difference in operating speed and satisfaction was discovered between the elderly and the young.</p>



Lunch@ Auditorium, the Second Floor

<12:30-13:30>

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<p>B2-0001</p>	<p>Pricing Personal Data Based on Information Entropy Yuncheng Shen, Bing Guo, Yan Shen, Xuliang Duan, Xiangqian Dong, Hong Zhang Sichuan University, China</p> <p>ABSTRACT Personal data is increasingly being traded online, for which data marketplace services have emerged to facilitate. Personal data is increasingly valuable to individuals and institutions. Be aware of the growing value of personal data, compensated use of personal data has become an inevitable trend. Therefore, how to reasonably price personal data becomes an urgent problem to be solved. We propose a novel personal data pricing method, which is based on information entropy and compute the price as the entropy of each data tuple. Our method can reasonably price personal data according to the value of the information entropy. This study shows that our model is arbitrage-freedom and can be adjusted dynamically.</p>
<p>B2-0008</p>	<p>Telecom Network Monitoring and Fault Isolation with Visual Analytics Preethi Subramanian, Sellappan Palaniappan Asia Pacific University of Technology and Innovation, Malaysia</p> <p>ABSTRACT The telecommunication sector is one of the major industries where the amount of data is enormous. Yet, the problem in this sector is multi-fold: fierce competition, high market penetration rate, poor customer experience and inability to handle large amounts of data. The main objective of this research is to obtain insights by developing a data analytic model to monitor network performance. Visual analytics approach provided deeper insights into precise problems by applying diagnostic analysis on the network performance. Network issues can be identified at rapid-fire speed and it could be applied in real-time in order to improve competitiveness.</p>
<p>B2-0010</p>	<p>Proposition of Rank-Based Stepwise Interactive Visualization for Customer Segmentation in E-Commerce Tan Kok Sheng and Preethi Subramanian Asia Pacific University of Technology and Innovation, Malaysia</p> <p>ABSTRACT The implementation of personalized web strategies facilitates the delivery of customized shopping experiences to visitors of the e-commerce websites in which the personalized website contents enable the conversion of a visitor into a potential customer. However, customer segmentation is a significant step in the construction of personalized marketing contents as it empowers the comprehension of customer behaviour. Therefore, a rank-based stepwise interactive visualization technique is proposed to perform visual customer segmentation to lead to the discovery of meaningful customer segments which would enable the delivery of customized marketing contents based on the product preferences and shopping time of the customers. In addition, the high interpretability of the proposed visualization</p>

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	<p>technique enables the immediate comprehension of segmentation outcomes and the real-time adaptability of the technique capacitates the instantaneous discovery of new customer segments if there are changes in the dataset without retraining in contrast to the traditional algorithmic techniques. Therefore, the robustness of the proposed visualization technique facilitates the integration of the proposed visual customer segmentation technique into business environment which empowers the construction of personalized marketing contents and enhances the competency of the businesses in the highly competitive e-commerce industry.</p>
<p>B1-0053</p>	<p>A Diversified Feature Extraction Approach for Program Similarity Analysis Ying Wang, Dahai Jin and Yunzhan Gong Beijing University of Posts and Telecommunications, China</p> <p>ABSTRACT As code plagiarism becomes more and more prevalent, the need for code similarity detection technology is growing greatly. The feature of program is the basic unit that can represent the procedure and structure. Therefore, the quality of the feature will directly impact the accuracy of the similarity detection results. In this paper, we propose a diversified feature extraction approach, which extracts feature information from attribute counting, statement structure, program structure and program function. In the process of feature extraction, we comprehensively consider multiple factors of program, such as program structure, semantics and data flow. Evaluation results shows that this approach can eliminate the interference caused by multiple plagiarism methods, and it also has certain improvement in accuracy and detection efficiency.</p>
<p>B1-0028</p>	<p>Lung Cancer Incidence Prediction Using Machine Learning Algorithms Kubra Tuncal, Boran Sekeroglu and Cagri Ozkan Near East University, Turkey</p> <p>ABSTRACT Everyday, the frequency of incidence of cancer disease is rising. It is one of the most fatal diseases in the world with several types and there is a few reliable data about incidence and mortality rates of cancer and its types. Thus, the prediction of the rates is challenging task for human beings. For this reason, several machine learning algorithms have been proposed to provide effective and rapid prediction of uncertain raw data with minimized error. In this paper, Support Vector Regression, Backpropagation Learning Algorithm and Long-Short Term Memory Network is used to perform lung cancer incidence prediction for ten European countries those records have been started from 1970. Results show that the prediction of incidence rates is possible with high scores with all algorithms however, Support Vector Regression performed superior results than other considered algorithms..</p>

