PROGRAMME BOOK

UNIVERSITAS PUTRA INDONESIA

UNIVERSITY OF MALAYA

2019
IC2SE

International Conference on Computer Science and Engineering

Proceedings International Conference on Computer Science and Engineering

INDUSTRIAL REVOLUTION 4.0 OPPORTUNITIES & CHALLENGES

26-27 April 2019
UPI Convention Center,
Universitas Putra Indonesia "YPTK"
Padang, Indonesia

indexed by **Scopus** JOURNAL OF PHYSICS: CONFERENCE SERIES

IOP Publishing

CONTENTS   PAGE

Organizing Committee of IC2SE 2019

GENERAL CHAIR
Billy Hendrik, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)

GENERAL CO-CHAIR
Dr. Suraya Binti Hamid (University of Malaya, Malaysia)
Abulwafa Muhammad, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)

ADVISORS
Prof. Dr. Sarjon Defit, S.Kom., M.Sc (Universitas Putra Indonesia YPTK Padang)
Assoc. Prof. Dr. Jufriadif Na'am, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)
Assoc. Prof. Dr. Julius Santony, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)
Dr. Yuhandri, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)
Emy Haryatmi, S.Kom., M.Eng.Sc., M.T. (Universitas Gunadarma)
Dr. Yuhefizar, S.Kom., M.Kom. (Politeknik Negeri Padang)
Dr. Arta Moro Sundjaja, S.E., S.Kom., M.M. (Universitas Bina Nusantara, Jakarta, Indonesia)
Ikhwan Arief, S.T., M.Sc. (Universitas Andalas, Padang, Indonesia)
Abulwafa Muhammad, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)

INTERNATIONAL ADVISORS
Assoc. Prof. Dr. Salimah Binti Mokhtar (University of Malaya, Malaysia)
Assoc. Prof. Dr. Sri Devi Ravana (University of Malaya, Malaysia)
Dr. Mohd Khalit Bin Othman (University of Malaya, Malaysia)
Dr. Suraya Binti Hamid (University of Malaya, Malaysia)

CONFERENCE CO-CHAIRS
Dr. Julius Santony, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)
Dr. T. Wendi Boy, S.T., M.M. (Universitas Putra Indonesia YPTK Padang)
Mutiana Pratiwi, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)
Ifdil, S.H.I., S.Pd. M.Pd., Ph.D., Kons. (Universitas Negeri Padang, Indonesia)

SECRETARY
Devia Kartika, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)
Suparmi, S.Pd., M.Pd. (Universitas Putra Indonesia YPTK Padang)

FINANCE
Sitti Rizky Mulyani, S.Pd,. M.M (Universitas Putra Indonesia YPTK Padang)
Dr. Hanna Pratiwi, S.E., M.M. (Universitas Putra Indonesia YPTK Padang)
Rima Liana Gema, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)

PUBLISHER
Robby Dharma, S.E., M.M.

TECHNICAL COMMITTEE
Assoc. Prof. Dr. Jufriadif Na'am, S.Kom., M.Kom (Universitas Putra Indonesia YPTK Padang, Indonesia)
Assoc. Prof. Dr. Maizatul Akmar Binti Ismail (University of Malaya, Malaysia)
Assoc. Prof. Dr. Sri Devi Ravana (University of Malaya, Malaysia)
Assoc. Prof. Dr. Teh Ying Wah (University of Malaya, Malaysia)
Associate Prof. Dr. Nazlena Mohamad Ali (University Kebangsaan Malaysia, Malaysia)
Associate Prof. Dr. Salimah Binti Mokhtar (University of Malaya, Malaysia)
Billy Hendrik, S.Kom., M.Kom (Universitas Putra Indonesia YPTK Padang, Indonesia)
Dr. Azah Anir Binti Norman (University of Malaya, Malaysia)
Dr. Fariza Hanum Binti Md Nasaruddin (University of Malaya, Malaysia)
Dr. Hoo Wai Lam (University of Malaya, Malaysia)
Dr. Julius Santony, S.Kom., M.Kom (Universitas Putra Indonesia YPTK Padang, Indonesia)
Dr. Kasturi Dewi Varathan (University of Malaya, Malaysia)
Dr. Mohamad Taha Ijab (University Kebangsaan Malaysia, Malaysia)
Dr. Mohd Khalit Bin Othman (University of Malaya, Malaysia)
Dr. Nor Liyana Bt Mohd Shuib (University of Malaya, Malaysia)
Dr. Norizan Binti Mohd Yasin (University of Malaya, Malaysia)
Dr. Norjihan Binti Abdul Ghani (University of Malaya, Malaysia)
Dr. Suraya Binti Hamid (University of Malaya, Malaysia)
Dr. Vimala Balakrishnan (University of Malaya, Malaysia)
Dr. Wendi Boy, ST., MT (Universitas Putra Indonesia YPTK Padang, Indonesia)
Dr. Yuhandri, S.Kom., M.Kom (Universitas Putra Indonesia YPTK Padang, Indonesia)
Dr. Zuraini Zainol (National Defence University of Malaya, Malaysia)
Ir. Muhammad Agung Wibowo, MM, M.Sc, P.hD (Universitas Diponegoro, Indonesia)
Dr. Aini Nazura Binti Paimin (Universiti Teknologi Tun Hussein Onn, Malaysia)
Dr. Anis Ur Rahman (University of Malaya, Malaysia)
Dr. Asad Waqar Malik (University of Malaya, Malaysia)
Dr. Sofianita Mutalib (University Teknologi MARA, Malaysia)
Dr. Sarah Bukhari (Institute of Engineering and Technology Multan. Pakistan)
Mutiana Pratiwi, S.Kom., M.Kom. (Track Co- Chair : Computer Science) (Universitas Putra Indonesia YPTK Padang, Indonesia)
Robbi Rahim (Sekolah Tinggi Ilmu Manajemen Sukma, Indonesia)
Robino Indan, S.T., M.M. (Track Co- Chair : Engineering) (Universitas Putra Indonesia YPTK Padang, Indonesia)

PUBLICITY
Aulia Fitrul Hadi, S.Kom, M.Kom (Universitas Putra Indonesia YPTK Padang)
Syafril Arlis, S.Kom, M.Kom (Universitas Putra Indonesia YPTK Padang)
Stevani, S.Ds. (Universitas Putra Indonesia YPTK Padang)
Anissa Aulia Rahmi, S.Ds. (Universitas Putra Indonesia YPTK Padang)
Halifia Hendri, S.Pd., M.Kom. (Universitas Putra Indonesia YPTK Padang)
Rini Sovia, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)

SPONSORSHIP

Robby Dharma, S.E., M.M. (Universitas Putra Indonesia YPTK Padang)

LOGISTICS

Aggy Pramana Gusman, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)
Silfia Andini, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)
Rahmat Hidayat, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)
Mayozi Chairi, S.T., M.T. (Universitas Putra Indonesia YPTK Padang)

SECRETARIAT

Silky Safira, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)
Rima Liana Gema, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)
Mardiah Masril, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)
Silfia Andini, S.Kom., M.Kom. (Universitas Putra Indonesia YPTK Padang)

MESSAGE FROM THE PRESIDENT
OF UNIVERSITAS PUTRA INDONESIA YPTK PADANG

Assalamualaikum Wr. Wb, Thanks and gratitude to Allah who has given us mercy and blessing until Universitas Putra Indonesia YPTK Padang can held International event about Computer Science and Engineering. International Computer Science and Engineering (IC2SE) 2019 is held by collaboration between Universitas Putra Indonesia YPTK Padang with University of Malaya, thank's to all who has support us. We are from Yayasan Perguruan Tinggi Komputer Padang always support every activity which is support Tri Dharma Perguruan Tinggi . I hope this event give so much benefit for domestic and overseas lecturers and Students, thank's to all Committee of IC2SE, Rector and all vice Rector of UPI YPTK, Rector and all vice rector of UM and Speciall thank's to all of participants from the overseas (Malaysia, New Zealand, Bangladesh, United Kingdom, Bahrain, Zambia, Nigeria, Saudi Arabia, Uganda, Pakistan, Iraq, Palestine). Thank you very much for participating in our event and we wish you get the wonderfull and unforgetable experiences in Minangkabau.

PROFILE OF RECTOR
OF UNIVERSITAS PUTRA INDONESIA YPTK PADANG

Sarjon Defit

Universitas Putra Indonesia YPTK – Indonesia

Prof. Dr. Sarjon Defit, S.Kom, M.Sc Rector of Universitas Putra Indonesia YPTK Padang. Educational Background: Inpres I 3/76 Primary School Padang Sibusuk, graduated in 1983. Madarasah Tsanawiyah Negeri Padang Sibusuk, finished in 1986. Madrasah Aliyah, Koto Baru State, Padang Panjang, graduated in 1989. College of Information and Computer Management (STMIK "YPTK" Padang), graduated in 1993. Universiti Teknologi Malaysia, Johor Bahru (S2), graduated in 1998 Universiti Teknologi Malaysia, Johor Bahru (S3), graduated in 2003.

MESSAGE FROM THE CONFERENCE GENERAL CHAIR

Billy Hendrik, S.Kom., M.Kom.

General Chair of IC2SE 2019

Dear Conference Delegates

On behalf of the organizing committee, I am honored and delighted to welcome you to the 1st International Conference on Computer Science and Engineering (IC2SE) 2019 at Universitas Putra Indonesia YPTK, Padang, Indonesia. We are delighted to have you with us to participate in our pioneer conference. Thank you for coming.

The conference theme, "Industrial Revolution 4.0 Opportunities & Challenges", has been chosen with the aim to investigate the elements, issues, benefits, challenges, progress and relevance of Industry 4.0 implementation in today's context. We have received 200 submissions from 13 countries including Indonesia and other countries are Malaysia, New Zealand, Bangladesh, United Kingdom, Bahrain, Zambia, Nigeria, Saudi Arabia, Uganda, Pakistan, Iraq and Palestine. All submissions went through a careful review process aided by the Technical Program Committee members. From the total submission, 86 papers are accepted for oral presentation.

Our one day technical program is rich and varied with 3 keynote speeches and 8 sessions of parallel presentation. It gives a chance to share your knowledge, ideas, network and build relationships with each other. We encourage you to engage with your fellow colleagues from around the world, learn from one another, and develop collaborative research together. On the second day, delegates will enjoy a day trip visiting several tourist attractions in West Sumatra.

As a conference general chair of IC2SE 2019, I know that the success of the conference depends ultimately on the many people who have worked with us in planning and organizing especially our patron and both the organizing & technical committees.

In this time of gratitude, I would like to convey a special thanks to Mr. H. Herman Nawas and Dr. Hj. Zerni Melmusi, MM, Ak, CA as President of UPI "YPTK" Padang who have kindly contributed both financially and non-financially, to make this a memorable conference. We value your patronage and appreciate your confidence in us.

In particular, we would like to acknowledge with much appreciation the crucial role of University Malaya as the IC2SE co-organiser, which are represented by: Dr. Suraya Binti Hamid, Associate Professor Dr. Sri Devi Ravana, Associate Professor Dr. Salimah Binti Mokhtar, Dr. Mohd Khalit Bin Othman, and the Information Systems department team members for their wise advice and remarkable effort in planning and coordinating this event with us.

I would to express my appreciation and gratitude to all international reviewers (Malaysia, Indonesia, Pakistan, Saudi Arabia), your contributions are very important for the fulfillment of the conference goals.

I would also like to take this opportunity to express sincere gratitude to our keynote speakers: Prof. Dr. Erry Yulian Triblas Adesta from International Islamic University Malaysia, Malaysia; Dr. Fariza Hanum Binti Md Nasaruddin from University of Malaya, Malaysia; and Prof. Dr. H. Sarjon Defit from Universitas Putra Indonesia YPTK Padang, Indonesia. Thank you for coming as keynote speakers. We wish you a wonderful experience during your stay in Indonesia.

I would also like to thank my colleagues in the organizing committee from UPI "YPTK" and KO2PI. I really appreciate your hard work and support in preparing this big event.

So welcome to Padang for IC2SE 2019. Thank You for your participation. We sincerely hope you enjoy the conference.

Warmest greetings

ABSTRACT KEYNOTE SPEAKER 1 (IC2SE 2019)

Erry Yulian Triblas Adesta

University Islam Antarabangsa, Malaysia

Industrial Revolution 4.0: Opportunities, Challenges and Way

Industry 4.0 introduces an era where computers are inter-connected and communicating with one another to ultimately make decisions without very much human intervention. Industry 4.0 also offers the opportunity for producers to optimize their operations rapidly and efficiently by knowing what needs attention and to be prioritized. It shall be marked by the ability to interconnect various tools communicating on various protocols with only one chip, while semiconductor manufacturers must be very careful in their selection process. Shortly, Industry 4.0 moves into product marking and coding. On the other hand, composite materials and parts require specialized development processes because of their complexity to fit into this Industry 4.0 environment. It has also been said that the 4th industrial revolution shall digitize and vertically integrates processes across the entire organization. Furthermore, it integrates horizontally all the internal processes from suppliers' suppliers to customers' customers. It simply represents a paradigm shift from 'centralized' to 'decentralized' production, whereby machines no longer just 'processing' the product, but they are seamlessly integrating them within business partnership of suppliers and customers through information network. In other words, the idea of consistent digitization and linking of all productive units in an economy is emphasized in the 4th industrial revolution age. Due to the self-organization, they choose each time methods, such as planning and control methods, and use machines and robots that are suitable for carrying out specific tasks. However, the management and creation of such a structure is becoming more and more difficult while at the same time the requirements towards individual employees or groups are getting more and more sophisticated. The creation and management of such information and communication networks shall be customized or personalized and will become organizational and technical challenge for the future. It is understood that very large manufacturing companies and

multinational groups already consider the topic very important. However, small and medium sized companies do not yet appear to consider industrial 4.0 to be great relevance to them, even though these companies are most likely to be the big winners from the shift. It is a fact that Small and Medium sized companies are often able to implement the digital transformation more rapidly because they can develop and implement the new IT structures from the scratch easier. Very large manufacturing companies and multinational groups in the contrary, have more complexity to deal with in terms of their existing, organically grown structures. Hence it can be claimed that the digital transformation to industry 4.0 of equal importance to all sectors. Companies, ranging from Mechanical and Electrical engineering industries and the chemical sector see it as having the greatest potential while companies in metalworking industries and construction sector currently see it as less important. Industry 4.0 will se digital networks spreading across all global locations structure.

ABSTRACT KEYNOTE SPEAKER 2 (IC2SE 2019)

Fariza Hanum Binti Md Nasaruddin
University Of Malaya, Malaysia

Dr. Fariza Hanum Md Nasaruddin is currently a Senior Lecturer with the Department of Information Systems, Faculty of Computer Science and Information Technology, University of Malaya. She received her B.Sc. degree in computer science and the M.Sc. degree in MIS from Northern Illinois University, USA, and her Ph.D. degree from University of Malaya. She was with the industry as a Systems Analyst for 10 years before joining the academia in 1997. She became involved in multi-disciplined research but her main focuses are in databases, data analytics, information systems, big data and data science. Recent advancements in data science and big data have sparked her interest and she has kept herself up-to-date with various software and data science courses. She also completed a 10 months course in Data Science Certification by John Hopkins University.

The topic to be presented at International Conference Computer Science Engineering 2019 is **"The role of Big Data and Data Science in the Fourth Industrial Revolution "**

The world is abuzz with the presence of the Fourth Industrial Revolution (IR4.0). Although the industry 4.0 is geared towards automation and data exchange in manufacturing technologies, the main lifeline for IR4.0 is very much information technology (IT) related. Therefore, can IR4.0 be totally separated from big data and data science; which are the current buzzwords in the IT field? This talk will present some views and discussions on how data science can be useful in the Fourth Revolution, if at all. It will present a basic introduction to big data and data science, and later proceed to provide examples on data science and big data applications that are useful to the community. Audience will be given a closer view into some problems that may solved in various manufacturing and other industries using data science approach during this phase we call the Fourth Industrial Revolution.

Conference Schedule

INTERNATIONAL CONFERENCE COMPUTER SCIENCE AND ENGINEERING
(IC2SE 2019)
PADANG, APRIL 26-27 2019

Conference Day : **Friday 26th April 2019**
Venue : **UPI Convention Center**

TIME	ACTIVITY
08.00 - 08.30 am	Registration + Coffee & Snack Box
08.30 - 08.35 am	Opening (Shalawat Nabi)
08.35 - 08.45 am	Recitation of the Holy Qur'an and Translation
08.45 - 08.50 am	Recitation of Doa
08.50 - 09.05 am	Dzikir Asma Ul-Husna
09.05 - 09.10 am	National Anthem
09.10 - 09.15 am	Traditional Dance
09.15 - 09.30 am	Signing of MOA (UPI YPTK & UM)
09.30 - 10.30 am	**Welcoming Speech:** 1. Prof. Dr. H. Sarjon Defit. S.Kom., M.Sc (Rector of Universitas Putra Indonesia YPTK Padang) 2. Bapak H. Herman Nawas (Head of Institution) 3. Prof. Dr. Herri, SE, MBA (Head of LLDIKTI X ten region) 4. Prof. Dr. H. Irwan Prayitno, S.Psi, M.Sc (Governor of West Sumatera Province)
10.30 - 11.00 am	**Keynote Speakers:** 1. Prof. Erry Yulian Triblas Adesta, Ph.D., C.Eng., M.I.Meche., IPM.- (University Islam Antarabangsa) 2. Dr. Fariza Hanum Binti Md Nasaruddin - (University Of Malaya) 3. Prof. H. Sarjon Defit. S.Kom., M.Sc - (Universitas Putra Indonesia YPTK Padang)
11.15 - 11.25 am	Q & A
11.25 - 11.35 am	Group Photo Session
11.35 - 12.00 pm	Lunch
12.00 - 13.30 pm	Sholat Zohor
13.30 - 15.30 pm	Parallel Session (Room 1 – Room 9)
15.30 - 16.00 pm	Coffee Break & Sholat Asar
16.00 - 17.30 pm	Parallel Session (Room 1 – Room 9)

DETAILS SESSION PROGRAMME

Friday, 26th April 2019

Session 1, 1.30 – 03.30 pm Room 1, Ground Floor Session Chair: Dr. Mohd Khalit Othman		
Paper ID	**Title of Paper**	**Author**
2	Exploring the interaction's quality attributes of Mobile Government services	Abdulla Jaafar Mohamed, Mohd Khalit Bin Othman, Suraya Binti Hamid
6	Design of Bicycle's Speed Measurement System Using Hall Effect Sensor	Ratna Aisuwarya, Muhammad Azmi Riyan, Rahmi Eka Putri
54	Prediction of Corn Productivity in Indonesia as Anticipation Efforts to Import Using Backpropagation Neural Network	Anjar Wanto, Dedy Hartama, Risma Nurhaini Munthe, Pawer Darasa Panjaitan, Elfina Okto Posmaida Damanik, Agus Perdana Windarto
22	The Framework Accommodation of Systems Recommendation Via Social Media	Doni Ariyanto, Lukito Edi Nugroho, Adhistya Erna Permanasari
37	Practicality of E-Learning as Learning Media in Digital Simulation Subjects at Vocational School in Padang	Monica Fransisca, Yuliawati Yunus, Aminda Dewi Sutiasih, Renny Permata Saputri
Session 2, 04.00 – 05.30 pm Room 1, Ground Floor Session Chair : Billy Hendrik		
Paper ID	**Title of Paper**	**Author**
58	Designing a Multimodal Graph System to Support Non-Visual Interpretation of Graphical Information	Deni Setiawan, Bagus Priambodo, Mila Desi Anasanti, Al Hamidy Hazidar, Emil Naf'an, Inge Handriani, Asama Kudr Nseaf, Zico Pratama Putra
42	Breast cancer classification using digital biopsy histopathology images through transfer learning	Ghulam Murtaza, Liyana Shuib, Ainuddin Wahid Abdul Wahab, Ghulam Mujtaba, Ghulam Mujtaba, Ghulam Raza, Nor Aniza Azmi
49	Enhancement of OTP Stream Cipher Algorithm Based on Bit Separation	Arisman, Mahyuddin K M Nasution, Syahril Efendi
53	Online Management System of Praktik Lapangan Kerja (PLK) UPI YPTK Padang	Astri Indah Juwita, Muhammad Ikhlas
60	Implementation and Design User Interface Layout Use Leap Motion Controller with Hand Gesture Recognation	Billy Hendrik, Fauziah, Mardhiah Masril, Yunan Fauzi Wijaya, Silfia Andini.

Session 1, 1.30 – 03.30 pm Room 2, Ground Floor Session Chair : Associate Professor Dr. Maizatul Akmar Ismail		
Paper ID	**Title of Paper**	**Author**
12	Supplier Selection by Using Analytical Hierarchy Process (AHP) and Techniques for Order Preference Methods with Similarities to Ideal Solutions (TOPSIS)	Ikhsan Siregar
39	Prediction of Canal Erosion on Tidal Swamp Delta Telang I, Banyuasin Regency, South Sumatra	Achmad Syarifudin, Henggar Risa Destania, Yunan Hamdani
64	Disaster risk management strategy in the environment and disaster mitigation-based school (SWALIBA)	Sindhung Wardana , Herdis Herdiansyah , Adam Wicaksono
68	Smart IoT Flood Monitoring System	Shahirah Binti Zahir, Phaklen Ehkan, Thennarasan Sabapathy, Muzammil Jusoh and Mohd Nasrun Osman, Mohd Najib Yasin, Yasmin Abdul Wahab, Hambali and N. Ali, A.S. Bakhit,F.Husin,M.K.Md.Kamil and R.Jamaludin
73	Shallow Well Water Salinity Viewed from Distance Of Well To CoastLine And Ground Water Level Elevation In Purus Padang Village	M Chairi, W Purba, W Boy, R Imani, J Melasari
Session 2, 04.00 – 05.30 pm Room 2, Ground Floor Session Chair : Rima Liana Gema		
Paper ID	**Title of Paper**	**Author**
75	Face Recognition and Age Estimation Implications of Changes in Facial Features: A Critical Review Study	Rasha Ragheb Atallah, Amirrudin Kamsin, Maizatul Akmar Ismail
81	Standard Operational Procedure Fund Distribution System of Zakat Infaq and Shodaqah for Zakat Foundations	Inge Handriani, Bagus Priambodo, Al Hamidy Hazidar , Mardhiah Masril, Zico Pratama Putra , Asama Kudr Nseaf, Emil Naf'an
77	Automatic System to Fish Feeder and Water Turbidity Detector Using Arduino Mega	H Hendri , S Enggari , Mardison , M R Putra, L N
67	The Application of Data Mining in Determining Patterns of Interest of High School Graduates	Dedy Hartama, Agus Perdana Windarto, Anjar Wanto
36	Model Development Measurement of Interests Based on Expert System	Erdisna, Ganefri, Ridwan, Rice Novita, Wanayumini

Session 1, 1.30 – 03.30 pm Room 3, Ground Floor Session Chair : Halifia Hendri		
Paper ID	**Title of Paper**	**Author**
43	Bandit algorithms in information retrieval evaluation and ranking	Sinyinda Muwanei, Hoo Wai Lam, Sri Devi Ravana, Douglas Kunda
38	Analysis of Multiple Channel Multiple Phase System for Priorities Queuing Model (N-P) with Simple Adaptive Weighting	Herman Putra Rajagukguk, Muhammad Zarlis, Sutarman
28	Application Of Ahp Analysis To Increase Employee Career Paths In Decision Support Systems	Julius Santony, Faisal Amir, Sumijan, Rice Novita
23	Text Mining For Hotel Classification Using Naïve Bayes Algorithm	Ahmad Afif, Lukito Edi Nugroho , Adhistya Erna Permatasari
79	Design Of Expert System For Diagnosis Damage Computer Hardware	Retno Devita, Eva Rianti , Sri Rahmawati
Session 2, 04.00 – 05.30 pm Room 3 Ground Floor Session Chair : Dr. Azah Anir Norman		
Paper ID	**Title of Paper**	**Author**
19	Electronic Health Cloud as Service to Improve Collaboration in Healthcare Organizations	Shady Gomaa Abdulaziz, Norizan Mohd Yasin, Zeinab AlGamal, Asmaa Hateem and Kalaimagal Ramakrishnan
35	Expert Systems Diagnosing Of Banana Pests And Diseases Use Case-Based Reasoning Method With Android	Hezy Kurnia, Vicky Ariandi, Heriyanto, Yesri Elva
11	Technology Acceptance Among Older Adults With Mild Cognitive Impairement	Nita Rosa Damayanti, Nazlena Mohamad Ali, Ely Salwana Mat Surin
74	Expert System to Diagnose Child Development Growth Disorders with Forward Chaining Method	A P Gusman, H Hendri
21	Design Chipless Textile Tag For RFID Application	Mirza Anuar, Lee Yeng Seng, M. S. Shakhirul, F.H. Wee, Hong Seng Gan, Muzammil Jusoh, Thennarasan Sabapathy, M.N. Osman

Session 1, 1.30 – 03.30 pm Room 4, Ground Floor Session Chair : Dr. Norizan Mohd Yasin		
Paper ID	**Title of Paper**	**Author**
03	A comparative analysis of detection mechanisms for emotion detection	Vimala , Marian Cynthia Martin, Wandeep Kaur, Amir Javed
55	Determination of the Shortest Route Towards the Tourist Destination Area Using the Ant Algorithm	Ni Luh Wiwik Sri Rahayu Ginantra , T , Gita Widi Bhawika , Ida Bagus Ary Indra Iswara , Anjar Wanto
18	Multiple Thresholding Methods For Extracting & Measuring Human Brain And 3d Reconstruction	Sumijan , Pradani Ayu Widya Purnama , Syafri Arlis
44	A Comparative Review of ISMS Implementation Based on ISO 27000 Series in Organizations of Different Business Sectors	Zaidatulnajla Hamdi , Azah Anir Norman , Nurul Nuha Abdul Molok
85	Improving the modelling of Robot Bunker with camera	Emil Naf`an , Riza Sulaiman , Nazlena Mohamad Ali , Bagus Priambodo , Al Hamidy Hazidar , Asama Kudr Nseaf , Zico Pratama Putra , Harry Theozard Fikri, Inge Handriani
Session 2, 04.00 – 05.30 pm Room 4 Ground Floor Session Chair : Rahmatul Husna Arsyah		
Paper ID	**Title of Paper**	**Author**
66	The Impact Analysis Of Flood Disaster In DKI Jakarta: Prevention And Control Perspective	Adam Wicaksono, Herdis Herdiansyah
08	Minimization of Palm Oil Losses on Sterilization Process by Optimization Boiling Pressure and Boiling time	Wetri Febrina , Yusrizal
13	Application of Theory of Constraints in Bottleneck Work Stations Optimization	Ikhsan Siregar
30	Designing Engineering Data Management System in Research and Development Company	Muhammad Nur, Luciana Andrawina
31	Risk Assestment of Housing Reconstruction Project Community-Based Construction after The Earthquake	Wendi Boy, Rafki Imani , Mayozi Chari

Session 1, 1.30 – 03.30 pm Room 5, Ground Floor Session Chair : Dr. Nor Liyana Shuib		
Paper ID	**Title of Paper**	**Author**
46	How Online Media and Technology Inovation Influence Consumer's Purchase Intention	Sitti Rizki Mulyani , Larissa Navia Rani , Dharma Syahrullah Ekajaya , Marta Widian Sari , Vivi Nila Sari
47	Development Database E-Costal For Fishermen's Assistance Program At Terengganu	Dara Aisyah Ali Puteh, Al Hamidy Hazidar , Muhammad Sontang Sihotang
52	Assessment for Seismic Activities in Pesisir Selatan West Sumatra in 2018	R Imani , W Boy , U Dewi , A Sari , W Purba , M Chairi, J Melasari
41	Interactive Map Model of Flat Design for Istano Basa Pagaruyung Tourism Development	T Wiraseptya , R Imani , H Yanto
29	Behavioural Intention to Use MYOB Accounting Aplication Among Accounting Students	Dwi Fitri Puspa, Desi Ilona, Zaitul
Session 2, 04.00 – 05.30 pm Room 5 Ground Floor Session Chair : Dr. Vimala Balakrishnan		
Paper ID	**Title of Paper**	**Author**
17	The utilization of learning analytics to develop student engagement model in learning management system	Shahrul Nizam, Suraya Hamid , Haruna Chiroma
57	Backpropagation Neural Network Prediction For Cryptocurrency Bitcoin Prices	Rini Sovia, Musli Yanto ,Arif Budiman
62	Control System Of Microcontroller Based Automatic Milk Coffe Drink	Nofriadi ,Herman Saputra ,Juna Eska , Adi Prijuna , Nuriadi Manurung
24	Factors Influencing The Use Of M-Government Services From The Citizens' Perspective: Examining The Characteristics Of Adopters And Non-Adopters	J. Al-awj , N. Yasin , M. Khalit , S. Al-ammari ,N Kassim
98	Expert System For Disease Diagnosis In Cocoa Plant Using Android-Based Forward Chaining Method	Vicky Ariandi, Hezy Kurnia, Heriyanto, Hilda Mary

Session 1, 1.30 – 03.30 pm Room 6, Ground Floor Session Chair: Dr. Suraya Hamid		
Paper ID	**Title of Paper**	**Author**
27	Social Entrepreneurship Learning Model in Higher Education using Social Network Analysis	Muhammad Hamirul Hamizan Roslan, Suraya Hamid, Mohamad Taha Ijab, Sarah Bukhari
14	Media Effectifity e- module Of Object-Oriented Programming II Based On Problem Based Instruction (PBI) Informatics Engineering Education Program, University Of Putra Indonesia YPTK Padang	Yuliawati Yunus, Silky Safira, Monica Fransisca, Renny Permata Saputri, Aminda Dewi Sutiasih
61	Towards Data-driven Education with Learning Analytics for Educator 4.0	Salimah Mokhtar, Jawad A. Q., Ghassan O. A. Shahin
76	The Understanding of Lecturers about The New Literacy in Industrial Revolution Era 4.0: A Study case of University of Putra Indonesia YPTK Padang	Muharika Dewi,Yulia Retno Sari, Shally Amna, Rasmita, Rina Susanti
80	Impact of Learning Motivation, Cognitive and Self-Efficacy in Improving the Quality of Online Learning in the Industrial Age 4.0	Ramdani Bayu Putra, Elfiswandi, Muhammad, Sitti Rizki Mulyani , Dharma Syahrullah Ekajaya, Rio Andhika Putra
Session 2, 04.00 – 05.30 pm Room 6 Ground Floor Session Chair: Dr. Hoo Wai Lam		
Paper ID	**Title of Paper**	**Author**
26	The Impact of Age, Gender, and Educational level on the Cybersecurity Behaviors of Tertiary Institution Students: An Empirical investigation on Malaysian Universities	F B Fatokun, Suraya Hamid, Azah Anir Norman, J O Fatokun
77	Automatic System to Fish Feeder and Water Turbidity Detector Using Arduino Mega	Halifia Hendri, Sofika Enggari, Mardison, Muhammad Reza Putra Larissa N Rani
32	Digital Medical data protection compliance among medical staffs	Uning Pratimaratri, Desi Ilona, Zaitul
16	Internet of Things in Monitoring and Notification of Industrial Security Systems	Alkhairunas Riyuska, Julius Santony, Sumijan
15	Identification of Variables in Predicting Trends in Social Entrepreneurship	Nur Azreen Zulkefly, Norjihan Abdul Ghani, Wajdi Alquliti

Session 1, 1.30 – 03.30 pm Room 7, Ground Floor Session Chair : Dr. Azah Anir Norman		
Paper ID	**Title of Paper**	**Author**
25	A Socio-Technical Mitigation Effort to Combat Cyber Propaganda: A Systematic Literature Mapping	Aimi Nadrah Maseri, Azah Anir Norman
70	Application Of Promotion, Map And Existing Tourism Information Systems In Solok Selatan District Using Androidjava Programming Language	Hari Marfalino, Larissa Navia Rani, Mardison, Ichsan Pribadi
10	The Kindness Behavior Management in Kindness Service Application Using Tree Structure	Luxfy Roya , Lukito Edi Nugroho , Adhistya Erna Permatasari
82	Expert System and Rule-Based Knowledge Based in Analyzing Vitamin Deficiency in the Human Body	Ruri Hartika Zain, Elmi Rahmawati
59	Predicting GDP of Indonesia Using K-Nearest Neighbour Regression	Bagus Priambodo, Sarwati Rahayu , Ahmad , Al Hamidy Hazidar , Emil , Mardhiah masril , Inge , Zico Pratama Putra , Asama Kudr Nseaf , Deni Setiawan
Session 2, 04.00 – 05.30 pm Room 7 Ground Floor Session Chair : Dr. Suraya Hamid		
Paper ID	**Title of Paper**	**Author**
5	Prediction of Malaysian stock market movement using sentiment analysis	Low Cheng Kuan ,Maizatul Akmar Ismail , Tasnim M. A. Zayet , Shuhaida Mohamed
56	Decision Support System For Mapping Types Of Timber And Number Of Products For Furniture Handling In The Main Work Service Using Ahp (Analytical Hierarki Process) Method In Increasing The Profits Of Production	Firdaus , Ade Saputra , Mondra Neldi , Ritna ,Novia Yolanda , Usman
80	Impact of Learning Motivation, Cognitive and Self-Efficacy in Improving Learning Quality Elearning in Industrial Era 4.0	Ramdani Bayu Putra, Elfiswandi , Muhammad Ridwan , Sitti Rizki Mulyani , Dharma Syahrullah Ekajaya , Rio Andhika Putra
50	Convergence Analysis of Acceleration and Generalization of E-Learning in the Manifestation of Globalization Education Readiness 4.0	Sitti Rizki Mulyani, Agung Ramadhanu , Desi Permata Sari , Rahmatul Husna Arsyah , Neni Sri Wahyuni Nengsih
97	Expert System Of Intrauterine Insemination	Firna Yenila, Yogi Wiyandra

Session 1, 1.30 – 03.30 pm Room 8, Ground Floor Session Chair : Suparmi		
Paper ID	**Title of Paper**	**Author**
7	Exploring Topic Difficulty in Information Retrieval Systems Evaluation	Wei Ting Pang , Prabha Rajagopal , Mengjia Wang , Shuxiang Zhang , Sri Devi Ravana
71	The Effect of Lego Mindstorms as innovative educational tool: To develop students' creativity skills for Creative Society.	Mardhiah Masril , Billy Hendrik , Harry Theozard Fikri, Al Hamidy Hazidar , Bagus Priambodo , Emil Naf'an , Inge Handriani, Zico Pratama Putra , Asama Kudr Nseaf
78	Learning Satisfaction Analysis of Online Learning Readiness with Learning Culture and Character Strength as Antecedent Variables	Agung Ramadhanu , Ramdani Bayu Putra, Hadi, Rahmatul Husna Arsyah , Desi Permata Sari
33	Technology Context and Social Media Adoption Among Small-Medium Enterprise	Desi Ilona, Zerni Melmusi , Hanna Pratiwi, Padang, Indonesia), Zaitul
34	Statistical Software Adoption Behaviour Among Undergraduate Students	Zaitul , Sitti Rizki Mulyani , Muhammad Ridwan , Desi Ilona
Session 2, 04.00 – 05.30 pm Room 8 Ground Floor Session Chair : Associate Professor Dr. Sri Devi Ravana		
Paper ID	**Title of Paper**	**Author**
04	Startup Learning Path (SLP): A Learning Model for Startup Employees Using Agile Learning Approach	Egi Endeska Putra, Ridi Ferdiana, Rudy Hartanto
84	Fuzzy Logic Applications To Predict Total Production PKO (Palm Kernel Oil) In PT AAI Pasaman Method Using Web Based Tsukamoto	Devia Kartika, Mutiana Pratiwi, Rima Liana Gema
51	Strengthening Character Education with the Implementation of Machine Learning in the Millennial Era Industrial Revolution 4.0	Ulya Ilhami Arsyah , Rahmatul Husna Arsyah , Mutiana Pratiwi , Novia Lestari
83	Analysis of the Factors Affecting the Quality of Palm Oil Using the Analytical Hierarchy Process Method	Nugraha Rahmansyah , Shary Armonitha Lusinia, Rima Liana Gema
95	Analysis Of Electronically Reconfigurable Beam Steering Antenna Array Using Phase Shifter Technique	Soh Jen Neei, Muzammil Jusoh, Thennarasan Sabapathy, Samir Salem Al-Bawri, M.N. Yaasin, Tariq Abd Latef, Mahmud A. M. Albreem

<table>
<tr><td colspan="3">Session 1, 1.30 – 03.30 pm
Room 9, Second Floor
Session Chair : Abulwafa Muhammad</td></tr>
</table>

Paper ID	Title of Paper	Author
86	A Compact MIMO Planar Inverted-F Antenna	Najwa , Mohamed Nasrun Osman , Muzammil , Thennarasan Sabapathy, Thennarasan Sabapathy , M.M. Azizan, Tarmizi Ali
87	Transparent Encryption Technique for Trusted Computing	Gushelmi, Abdullah Mohd Zin
89	University Student Satisfaction Analysis on Academic Services by Using Decision Tree C4.5 Algorithm (Case Study : Universitas Putra Indonesia "YPTK" Padang)	Febri Aldi, Anita Ade Rahma
90	Analysis System of Occupational Health and Safety In coal Underground Mining	Heri Prabowo, I Prengki, A Amran
91	OLAP Approach in Searching Manufacturing Industries in West Sumatera	Eka Praja Wiyata Mandal, Dewi Eka Putri, Dede Wira Trise Putra,Dio Prima Mulya

<table>
<tr><td colspan="3">Session 2, 04.00 – 05.30 pm
Room 9 Second Floor
Session Chair : Aggy Permana Gusman</td></tr>
</table>

Paper ID	Title of Paper	Author
92	Setiment Analysis And Opinion Mining On Tax	Nurul Misyani Binti Mohd Rafie, Kasturi Dewi Varathan, Mohammad Shafenoor Amin
93	Model Of Artificial Neural Networks In Predictions Of Corn Productivity In An Effort To Overcome Imports In Indonesia	Anjar Wanto, Dedy Hartama, Gita Widi Bhawika, Deswidya Sukrisna Hutauruk, Pinondang Hotria Siregar, Ricard Fredrik Marpaung, Salim Efendi, Rusmin Saragih, Imeldawaty Gultom, Agus Perdana Windarto
94	Radiation Pattern Reconfigurable Fm Antenna	Barath, Thennarasan Sabapathy, Muzammil Jusoh, Samir Al-Bawri, M.N. Yaasin, Mohamed Nasrun Osman, Hasliza Abd Rahim
96	Expert System Delayed Walking In The Toddler	Yogi Wiyandra, Firna Yenila, Hezy Kurnia, Suci Wahyuni, Ratih Purwasih
99	Smart Irrigation System Based On Internet Of Things (Iot)	Nurulisma Ismail, Sheegillshah Rajendran, Wong Chee Tak, Tham Ker Xin, Nur Shazatushima Shahril Anuar, Fadhil Aiman Zakaria, Yahya Mohammed Salleh Al Quhaif, Hussein Amer M. Hasan Karakhan, and Hasliza A. Rahim

9	Expert System Application For Diagnosing Of Bipolar Disorder With Certainty Factor Method Based	Abulwafa Muhammad, Rana Iswara, Billy Hendrik
1	Decision Support System In Determining Structural Position Mutations Using The Simple Additive Weighting (Saw) Method	Aulia Fitrul Hadi, Randy Permana, Havid Syafwan

LIST OF ABSTRACTS

Paper ID 1

DECISION SUPPORT SYSTEM IN DETERMINING STRUCTURAL POSITION MUTATIONS USING THE SIMPLE ADDITIVE WEIGHTING (SAW) METHOD

Aulia Fitrul Hadi, Randy Permana, Havid Syafwan
Universitas Putra Indonesia Yptk Padang, Indonesia., Amik Royal Kisaran, Indonesia
Email : fitruhadi@gmail.com (*Aulia Fitrul Hadi*)

Abstract

Mutations are needed in a company to improve the quality of workers. mutations are based on the capabilities of individual workers in the company. HRD assesses the abilities of workers from various aspects. manually the accuracy of mutations based on the value of the criteria is only 38%. with a low value of accuracy resulting in mutations of workers not as expected. the criteria given are FFB Production (C1), Core CPO Production (C2) and Field Care (C3). Range of mutation decision weights are 10-30% Giving First Warning Letter, 31 - 70% Position setting and 71 - 100% Giving promotion. with the SAW method the analysis is done by computerization. after testing the criteria obtained. HRD assesses that the accuracy of workers reaches 85%. and better and in accordance with what the company wants.

Keyword : Simple Additive Weighting , Structural Mutation, Decision Support System
Topic   : Computer Science

Paper ID 2

EXPLORING THE INTERACTION'S QUALITY ATTRIBUTES OF MOBILE GOVERNMENT SERVICES

Abdulla Jaafar[1], Mohd Khalit Othman[1], Suraya Hamid[1], Ali Hussein Zolait[2], Norliya Ahmad Kassim [3]
[1]University of Malaya, Malaysia. [2]University of Bahrain, Bahrain. [3]Universiti Teknologi MARA (UiTM), Malaysia.
Email : a.desmal@outlook.com (*Abdulla Jaafar*)

Abstract

Popularity of smart devices among people leads organizations from different sectors to extend the channels of service delivery in order to maximize total beneficiaries. Mobile Government is one of these extended channels that use now days to deliver government services to public with less time and efforts. Main features of mobile government services are the mobility which enables public to perform their transactions online at anywhere and anytime. Dealing with smart devices for online services has limitations that need to be considering by the service provider to be sure that the delivered services meets the end uses' prospective. To measure satisfaction of m-government services, it required a compatible measurement scale that fits to the context of m-government services. Using other service quality measurement's scale (i.e. e-commerce, e-services, e-government) at the context of m-government leads to difficulties of analysis the service delivery process and inaccurate results. However, there's a lack of service quality framework at the context of mobile government services which is necessary now days to construct a compatible and suitable service quality measurement's scale that must contains quality attributes that reflecting the

environment of m-government. This study aims to analyze the "interaction" attributes of m-government service quality framework.

Keyword : E-Service, M-service, M-Government, E-service quality
Topic : Computer Science

Paper ID 3

A COMPARATIVE ANALYSIS OF DETECTION MECHANISMS FOR EMOTION DETECTION

Vimala Balakrishnan, Marian Cynthia Martin, Wandeep Kaur and Amer Javed
University Malaya, Malaysia., Cardiff University , Malaysia
Email : vim.balakrishnan@gmail.com (*Vimala Balakrishnan*)

Abstract

This paper compared the performance of emotion detection mechanisms using dataset crawled from Facebook diabetes support group pages. To be specific, string-based Multinomial Naïve Bayes algorithm, NRC Emotion Lexicon (Emolex) and Indico API were used to detect five emotions present in 2475 Facebook posts, namely, fear, joy, sad, anger and surprise. Both accuracy and F-score measures were used to assess the effectiveness of the algorithms in detecting the emotions. Findings indicate string-based Multinomial Naïve Bayes to outperform both Emolex (i.e. 82% vs. 78%) and Indico API (i.e. 82% vs. 50%). Further analysis also revealed emotions such as joy, fear and sadness to be of the highest frequencies for the diabetes community. Implications of the findings and emotions detected are further discussed in this paper.

Keyword : Emotion, Facebook, Multinomial Naïve Bayes, Emolex, Indico API
Topic : Computer Science

Paper ID 4

STARTUP LEARNING PATH (SLP): A LEARNING MODEL FOR STARTUP EMPLOYEES USING AGILE LEARNING APPROACH

Egi Endeska Putra, Ridi Ferdiana, Rudy Hartanto
Universitas Gadjah Mada, Indonesia
Email : egi.endeska.p@mail.ugm.ac.id (Egi Endeska Putra)

Abstract

The growth rate of startup numbers in Indonesia is very high due to the increase of people interest in the technology utilisation, particularly Smartphone. However, more than 75% startup that has been increasing has experienced the failure. This is related to many factors, one of which is the lack of qualified Human Resources. This research aims to propose a training model called Startup Learning Path (SLP), designed using agile methodology approach to be an alternative that can be used by startup to increase the quality of the employees' competence in supporting the startup to realize the vision and mission.

Keyword : Startup, Professional development, Adult learning, Agile
Topic : Computer Science

Paper ID 5

PREDICTION OF MALAYSIAN STOCK MARKET MOVEMENT USING SENTIMENT ANALYSIS

Low Cheng Kuan[1] , Maizatul Akmar Ismail[1], Tasnim M. A. Zayet[1], & Shuhaida Mohamed Shuhidan[2]
[1]University of Malaya, Malaysia., [2]Universiti Teknologi MARA
Email : maizatul@um.edu.my (*Maizatul Akmar Ismail)*

Abstract

Financial and business news contain various information about different companies, stock markets and other financial information. This information could be useful for predicting the stock market movement. The aim of this study is to determine whether financial news could be used to predict the Malaysian stock market movement. The sentiment analysis and classification were done using Hybrid Naïve Bayes algorithm. The data for this study was collected from Genting Berhad for a period of 11 months. The method resulted in news classification accuracy of 68.75% and showed a correlation of 58.41% between historical stock price and the sentiment data.

Keyword : News, Stock Price Movement, Sentiment Analysis, Naive Bayes
Topic : Computer Science

Paper ID 6

DESIGN OF BICYCLE'S SPEED MEASUREMENT SYSTEM USING HALL EFFECT SENSOR

Ratna Aisuwarya, Muhammad Azmi Riyan, Rahmi Eka Putri
Andalas University, Indonesia
Email : aisuwarya@fti.unand.ac.id (Ratna Aisuwarya)

Abstract

Bicycles are an easy-to-use and affordable transportation tool for all society. However, in cycling, there is no information about the speed and distance that has been taken. Whereas, these parameters are quite essential because knowing that we can adjust the speed of the bicycle if we are going to the office or school so that we can estimate the time of arrival to reach the destination. In this research, the designed system can measure the actual speed of a bicycle using the rotational speed of a bicycle wheel. The system implemented by using the Hall Effect sensor that will detect the magnet. The microcontroller then processes the data and convert the rotation per second into linear velocity. Then, information on speed, distance, and average speed are displayed to the LCD screen. After testing and analyzing the bicycle speed and distance measuring system using the Hall Effect sensor, we can conclude that The speed and distance of a bicycle can be measured by the hall effect sensor with the number of rotations that the Hall Effect sensor can detect up to 542 revolutions/minute. The final results of speed and distance can be displayed on the LCD, with the percentage error 2-3%.

Keyword : Keywords—Bicycle, Speed, Distance, Hall Effect Sensor, Arduino Uno
Topic : Computer Science

Paper ID 7

EXPLORING TOPIC DIFFICULTY IN INFORMATION RETRIEVAL SYSTEMS EVALUATION

Wei Ting Pang[2], Prabha Rajagopal[1], Mengjia Wang[1], Shuxiang Zhang[3] and Sri Devi Ravana[1]
[1]University of Malaya, Malaysia., [2]Accenture Solutions, Kuala Lumpur, Malaysia.,[3]University of Auckland, New Zealand.
Email : sdevi@um.edu.my (*Sri Devi Ravana*)

Abstract

Experimental or relevance assessment cost as well as reliability of an information retrieval (IR) evaluation is highly correlated to the number of topics used. The need of many assessors to produce equivalent large relevance judgments often incurs high cost and time. So, large number of topics in retrieval experiment is not practical and not economical. This experiment proposes an approach to identify most effective topics in evaluating IR systems with regards to topic difficulty. The proposed approach is capable of identifying which topics and topic set size are reliable when evaluating system effectiveness. Easy topics appeared to be most suitable for effectively evaluating IR systems.

Keyword :   Information retrieval, System evaluation, Topic difficulties, TREC
Topic   :   Computer Science

Paper ID 8

MINIMIZATION OF PALM OIL LOSSES ON STERILIZATION PROCESS BY OPTIMIZATION BOILING PRESSURE AND BOILING TIME

Wetri Febrina, Yusrizal, Aidil Abrar
Sekolah Tinggi Teknologi Dumai, Indonesia
Email : wetri.febrina@gmail.com (*Wetri Febrina*)

Abstract

Optimization of boiling pressure and boiling time on palm oil processing was studied due to increasing oil palm capacity and quality by minimizing oil losses during sterilization process. We used 3 level of boiling pressure and 5 level of boiling time and analized of it's effect to the amount of oil losses during the sterilization process. Design of Experiment Methods and Response Surface Methodology helped to see the effect of boiling pressure and boiling time to the amount of oil losses. From the study got a linier model that used to see and anylize the respons. From ANOVA test got the result that boiling time and boiling pressure significantly affected to the amount of oil losses, Optimize boiling time was 85-90 minute with boiling pressure 2.9 bar and average of amount of oil losses from triplicate data was 1.53%.

Keyword :   Oil Losses, Sterilization Prosses, Boiling Pressure, Boiling Time, Palm Oil
Topic   :   Engineering

Paper ID 9

EXPERT SYSTEM APPLICATION FOR DIAGNOSING OF BIPOLAR DISORDER WITH CERTAINTY FACTOR METHOD BASED

Abulwafa Muhammad, Rana Iswara, Billy Hendrik
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : abiealwafa@gmail.com (*Abulwafa Muhammad*)

Abstract
The purpose of this research is to design and develop software engineering of expert system based on web and android that is capable of diagnosing Bipolar Disorder to get the same level of solution and information with the expert. The expert system application has been developed by using PHP as the web programming language and by using Java with the Web View method as the android programming, and by using MySQL as the databases. This research used analytical method of certainty factor based on the user answers for the questions asked by this expert system. The result showed that the user condition related with bipolar disorder and completed with suggestion of solution medical or treatment and the list of psychiatrist. The conclusion of this research is certainty factor method evidently could give result in the form of early diagnosis and could provide the consistent and effective solutions.

Keyword : Expert system; certainty factor; bipolar disorder
Topic : Computer Science

Paper ID 10

THE KINDNESS BEHAVIOR MANAGEMENT IN KINDNESS SERVICE APPLICATIONS USING TREE STRUCTURE

Luxfy Roya Azmi, Lukito Edi Nugroho, Adhistya Erna Permatasari
Universitas Gadjah Mada, Indonesia
Email : luxfy.roya.a@mail.ugm.ac.id (Luxfy Roya Azmi)

Abstract
The kindness service application is an application to help students implementing good behavior. This application is designed as an intermediary between kindness service providers and those who need kindness service in order to form two-way relationships between students. Moreover, this application can also motivate students to compete doing good things, because students who often do favor will be given a rating by the admin. The process of good behavior that has occurred will be arranged to form a kindness tree, the management of the good behavior process is designed using the tree structure method. Tree structure will arrange the form of good behavior in the good service application, so that good behavior that has occurred will be structured into a whole good tree even though there are behaviors of goodness added and removed in the kindness service application.

Keyword : Two-way relationships, Kindness service applications, Tree structures.
Topic : Computer Science

Paper ID 11

TECHNOLOGY ACCEPTANCE AMONG OLDER ADULTS WITH MILD COGNITIVE IMPAIREMENT

Nita Rosa Damayanti , Nazlena Mohamad Ali, Ely Salwana Mat Surin
Universiti Kebangsaan Malaysia and Universitas Bina Darma
Email : nita_rosa@binadarma.ac.id (Nita Rosa Damayanti)

Abstract
Increasing age triggers the decline in cognitive function of memory. Memory decline that leads to the stage of dementia is called Mild Cognitive Impairment. Cognitive functions of memory affect the activities of daily life. Data from the World Health Organization in Indonesia is estimated to experience the largest increase in the number of older adults by 414% and patients with Mild Cognitive Impairement disorders according to the Directorate General of Medical Services of the Ministry of Health in Indonesia of 32.4%,the number sufferers of memory loss is not small. This needs special attention in Indonesia. This situation needs to be prevented by assistance technology because it sees the development of technology, especially in the health sector. However technology use is among the population of older adults who should be able to help improve memory most of them do not know. The purpose of this study provides knowledge to older adults about technology use and technology acceptance in helping the memory of older adults. In-depth interviews were conducted with older adults to gather information about demographics, experiences ,and their opinions about technology to help memory. Respondents consisted of men aged 60-65 years and women aged 60-63 years were interviewed using a semi-structured interview method. Results from the study of all older adults accepting the existence of technology to help improve memory cognitive function.

Keyword :   Keywords—Technology; Mild Cognitive Impairement; Older Adults
Topic   :   Computer Science

Paper ID 12

SUPPLIER SELECTION BY USING ANALYTICAL HIERARCHY PROCESS (AHP) AND TECHNIQUES FOR ORDER PREFERENCE METHODS WITH SIMILARITIES TO IDEAL SOLUTIONS (TOPSIS)

Ikhsan Siregar
Univeristas Sumatera Utara, Indonesia
Email : ikhsan.siregar@usu.ac.id (Ikhsan Siregar)

Abstract
One company that is engaged in drying coffee beans has problems, the problem is suppliers have not been able to meet the criteria set by the company. Within the last six months, there were coffee bean sacks that the company rejected because of the mismatch of the quality of the coffee beans obtained from suppliers with the standards set by the company so that the selection of suppliers that could meet the criteria of the company was needed. The criteria used by the company are quality, price, quantity, delivery time and response to claims. This study aims to determine the best suppliers based on criteria weights and to rank each alternative supplier. The method used by researchers for this problem is the method of Analytical Hierarchy Process (AHP) and Technique for Order Preference by Similarity to

Ideal Solution (TOPSIS). This method is used to determine supplier priorities. Determination of criteria and subcriteria is built based on expert answers using a questionnaire. Assessment of the importance of criteria and alternative weights based on the AHP questionnaire. The results obtained using this method indicate that the supplier who gets the first and deserves priority is PT ABC with the highest preference value

Keyword : Analytical Hierarchy Process,TOPSIS, suppliers, questionnaire
Topic : Engineering

Paper ID 13

APPLICATION OF THEORY OF CONSTRAINTS IN BOTTLENECK WORK STATIONS OPTIMIZATION

Ikhsan Siregar
Universitas Sumatera Utara, Indonesia
Email : ikhsan.siregar@usu.ac.id (Ikhsan Siregar)

Abstract

Manufacturing industries engaged in making of instant noodles in Medan city have problems in production planning. The process studied is the manufacture of GCGEP, GCST and G-1000GSP products. The constraints faced by the company are the presence of bottlenecks on mixing and cooking work stations due to differences in capacity between the work station and the previous work station, namely the sieving work station and dough forming work station. Bottleneck work stations happens in mixing work stations in January, February, March, May, June, July and August 2014 as well as cooking work stations in January, May and July 2014. This study uses the principle of continuous improvement of Theory of Constraints (TOC) to eliminate constraints on bottleneck work stations and to facilitate the overall production flow. In applying TOC, to optimize the production master schedule and to know the maximum advantage cost, linear programming method is used. After the optimal master schedule results are known, revisions to rough cut capacity planning are carried out and the result shows that the bottleneck work station found has become a non-bottleneck work station

Keyword : Theory of constraint, optimization, bottleneck, manufacturing
Topic : Engineering

Paper ID 14

MEDIA EFFECTIFITY E- MODULE OF OBJECT-ORIENTED PROGRAMMING II BASED ON PROBLEM BASED INSTRUCTION (PBI) INFORMATICS ENGINEERING EDUCATION PROGRAM, UNIVERSITY OF PUTRA INDONESIA YPTK PADANG

Yuliawati Yunus, Silky Safira, Monica Fransisca, Renny Permata Saputri, Aminda Dewi Sutiasih
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : yuliawati_yunus@upiyptk.ac.id (*Yuliawati Yunus*)

Abstract

This research is motivated by the need for lecture media innovation and the use of e-module media by Object Oriented Programming Lecturers II in the Informatics Engineering Study

Program at Universitas Putra Indonesia "YPTK" Padang. The purpose of this study was to implement e-module learning media based on Problem Based Instruction (PBI) and find out the Effectifity of PBI-based e-Module in Object-Oriented Programming II Recovery. The research method used for this study is Research and Development with a 4D development model (Define, Design, Develop, and Dessiminate). To see the Effectyfity of e-module, a Effectifity test was carried out. The population in this study were 19 students of the 2016 Tenik Informatics Education Study Program. The e-module used is an e-module that is valid. The results of the PBI-based e-Module Effectifity test as a medium and learning resources of 80.74% can be interpreted Effectifity Used.

Keyword : E-module, Object Oriented Programming, Problem Based Instruction
Topic : Computer Science

Paper ID 15

IDENTIFICATION OF VARIABLES IN PREDICTING TRENDS IN SOCIAL ENTREPRENEURSHIP

Nur Azreen Zulkefly, Norjihan Abdul Ghani; Wajdi Homaid Alquliti
Dept of Information Systems, Faculty of Computer Science & Information Technology, University of Malaya; Organisation of Islamic Cooperation, Jeddah, Kingdom of Saudi Arabia
Email : erinzulkefly@gmail.com (Nur Azreen Binti Zulkefly)

Abstract
Social entrepreneurship can be utilized with the emergence of big data analytics. Data analytics can assist entrepreneurs who don't have the skills, data, or information systems to perform the analysis necessary so that it can provide predictions in order to optimize their business. Although research has been done showing the prediction variables in commercial entrepreneurship, but the variables cannot be simply used to tackle the prediction in social entrepreneurship. Prediction in social entrepreneurship is different with commercial entrepreneurship. The variables used in predicting commercial entrepreneurship primary focused in measuring the economic returns meanwhile social entrepreneurship primary focus in social returns. Predicting social impact is a good form of action for social entrepreneurs which may help them in decision making and keep their business sustainable. This study synthesises the variables which can be used in predicting social impact in social entrepreneurship. As an outcome of this research, the paper highlights the variables which can be used in predicting social impacts and the contributions are it can enrich the knowledge of researchers and social entrepreneurs in term of the prediction of social entrepreneurship impact.

Keyword : Social Impact, Social entrepreneurship, Social enterprise, Prediction variable, Variables
Topic : Computer Science

Paper ID 16

INTERNET OF THINGS IN MONITORING AND NOTIFICATION OF INDUSTRIAL SECURITY SYSTEMS

Alkhairunas Riyuska, Julius Santony, Sumijan
UNIVERSITAS PUTRA INDONESIA "YPTK" PADANG, Indonesia
Email : alkhairunas@riyuska.com (Alkhairunas Riyuska)

Abstract

One of the factors that influence the course of industry is the security factor, which is represented by a security device and security guard on internal security. The purpose of this study is to monitor and detect the device security system using information technology. The method used in this study is the Monte Carlo Algorithm. This research provides a solution to mathematical problem data and decisions. The results of this study are automatic accuracy in real-time communication, both on mobile devices and websites. The accuracy of the first data test was 98% and the second data test was 98%. This research is very appropriate to be applied in maintaining industrial security systems.

Keyword : IoT, Notification, Monitoring, Security, Monte Carlo
Topic : Computer Science

Paper ID 17

UTILIZING THE LEARNING ANALYTICS TO DEVELOP THE STUDENT ENGAGEMENT MODEL IN LEARNING MANAGEMENT SYSTEM

Shahrul Nizam Ismail [1], Suraya Hamid [1], Haruna Chiroma [2]
1 University of Malaya, Kuala Lumpur, Malaysia., 2 Department of Computer Science,
Federal College of Education (Technical), Gombe, Nigeria
Email : shahrulnizam.ismai@gmail.com (Shahrul Nizam Ismail)

Abstract

Learning Analytics (LA) is evolving the learning into a new era of analyzing student's participation and engagement to gain insight. The purpose of this study is to develop student's engagement model for holistic involvement in Learning Management System (LMS). The machine learning algorithms applied for the data analytics are as follows: decision tree, regression and data exploration technique. The strong engagement and interaction between student, lecturer and content in LMS lead to boost up the usage of the LMS as along as the student participation in the learning environment is accepted and prepare the student to be evaluated anytime. The initial model will be proposed using the synthesize of the literature review and the existing engagement model of engagement in LMS. The future work will be focused on the analysis of the log data from the learning management system to clarify and authenticate the factors of the engagement. The model that will be developed can increase the interaction and engagement between lectures and student in LMS. Unlike the engagement of student in higher education LMS already discussed in the literature, this research integrated the role of trace data in shaping learning environment communication and participation of the users.

Keyword : Learning Analytics, Student Engagement Model, Learning Management System, Online Learning Analysis
Topic : Computer Science

Paper ID 18

MULTIPLE THRESHOLDING METHODS FOR EXTRACTING & MEASURING HUMAN BRAIN AND 3D RECONSTRUCTION

Sumijan, Pradani Ayu Widya Purnama, and Syafri Arlis
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : sumijan@upiyptk.ac.id (*Sumijan*)

Abstract
Thresholding changes the gray image to binary imagery and improves image quality. This study applies the multiple thresholding method to extract and calculate the area of bleeding in the human brain. 10 samples of human brain image using multiple threshold method (Otsu and hybrid thresholding). The results of the Otsu method that still have noise can be overcome by the hybrid thresholding method. The results of the original image research with images that have been processed using the multiple thresholding method yield the optimum threshold value, the method applied produces excellent image quality. Results of calculation of MSE, RMSE and PSNR. the average PSNR Otsu thresholding: an average of 60.93 db, the average PSNR Hybrid thresholding: 59.06 db, and the average PSNR Multiple thresholding: 56.96 db, the average MSE Otsu thresholding: 38.27, the average MSE Hybrid thresholding 36.15 , mean MSE multiple thresholding: 34.30, mean RMSE Otsu: 9.49, mean RMSE Hybrid thresholding: 8.88, average RMSE Multiple thresholding: 7.58. The results of the calculation of the area of cerebral hemorrhage and the level of accuracy indicate a better multiple thresholding method. The results of the calculation of the Brain Cerebral Hemorrhage area were carried out 3D reconstruction with linear interpolation method.

Keyword : Multiple Thresholding, Brain Cerebral Hemorrhage, MSE, RMSE & PSNR, 3D Reconstruction
Topic : Computer Science

Paper ID 19

ELECTRONIC HEALTH CLOUD AS SERVICE TO IMPROVE COLLABORATION IN HEALTHCARE ORGANIZATIONS

Norizan Mohd Yasin[1], Shady Gomaa Abdulaziz [2], Zeinab AlGamal[3] and Kalaimagal Ramakrishnan[4]
[1]University Of Malaya, Malaysia., [2]University Taif Arab Saudi., [3]University Madina, Egypt., [4]University of Nottingham Malaysia
Email : norizan@um.edu.my (Norizan bt. Mohd Yasin)

Abstract
Healthcare information systems (HISs) in healthcare organizations, such as hospitals, are important for providing and sharing healthcare information among medical staff, especially physicians and researchers in order to improve healthcare outcomes. Lack of collaboration in healthcare organization occurred because of significant factors such as low awareness level in technology use, computer literacy, absence of e-health cloud, poor health information systems, decentralized systems, language barriers, difficulty to manage and control large amounts of data, work independently and time factor. This article look at the implementation of the electronic health cloud as service that can help to improve the collaboration among

medical staff in terms of sharing information and knowledge in patient treatments. The mixed method approach which combines observation, questionnaire and interview were used to determine the level of collaboration among medical staff in e-health cloud environment.

Keyword : E-health; Cloud Computing; Collaboration; Health as Service
Topic : Computer Science

Paper ID 21

DESIGN CHIPLESS TEXTILE TAG FOR RFID APPLICATION

Mirza Anuar, Lee Yeng Seng, M. S. Shakhirul, Muzammil Jusoh, Wee Fwen Hoon, Gan Hong Seng, M.N. Osman, Thennarasan Sabapathy,
Universiti Malaysia Perlis (UniMAP), Malaysia
Email : yslee@unimap.edu.my (Lee Yeng Seng)

Abstract
This paper presents a chipless textile tag for RFID application. The CST microwave studio was used to design the chipless textile RFID tags which consist of three, four, and five slotted ring resonators nested in the circular patch. The RFID tag also fabricated using shieldit super fabric as conductive patch plane and the polyester fabric as substrate. The designed tags can operate over 1 GHz to 3 GHz frequency ranges. Each of the slot ring resonators are generate different reflection coefficient spectrum. The larger the slot ring create a resonate frequency at lower frequency. The measured and simulated results of the different slot ring chipless textile RFID tags are discussed.

Keyword : RFID Tag, Chipless, Textile
Topic : Relevant Topics

Paper ID 22

THE FRAMEWORK ACCOMMODATION OF SYSTEMS RECOMMENDATION VIA SOCIAL MEDIA

Doni Ariyanto, Adhistya Erna Permanasari, Lukito Edi Nugroho
Universitas Gadjah Mada, Indonesia
Email : doni.ariyanto@mail.ugm.ac.id (Doni Ariyanto)

Abstract
Tourists can plan trips using social media and other information sources found on the internet. However, to get information takes more time and efficient less. Recommendation systems have been developed to solve this problem. This research proposes the two-way relationship framework for the accommodation of systems recommendation using the hybrid method. To implementing the two-way relationship framework, this research is divided into two main architectural frameworks, the text processing architecture and the component system recommendation architecture. Focus this research for the framework component recommendations, where the decision-making process within the framework of two-way relationships using the hybrid method. The two-way relationship framework is probably to

provide impression for the accommodation of system recommendation that can be developed and implemented in future research.

Keyword : Text processing, Recommendation system, Social media, Two-way relationship framework, Hybrid

Topic : Computer Science

Paper ID 23

TEXT MINING FOR HOTEL CLASSIFICATION USING NAÏVE BAYES ALGORITHM

Ahmad Afif, Adhistya Erna Permatasari, Lukito Edi Nugroho
Universitas Gadjah Mada, Indonesia
Email : ahmad.afif@mail.ugm.ac.id (Ahmad Afif)

Abstract
At present, the Indonesian tourism sector has an important role in the country's financial income. This is due to the decline in the value of Indonesian exports, both in terms of oil and gas and non-oil and gas. In this case, the government must increase the growth of tourists visiting Indonesia. One part that needs to be considered by the government in improving the tourism sector is hotel accommodation. In improving hotel accommodation services, there needs to be a service that contains information about the uniqueness of the hotel. The service to be developed has a two-way relationship technique between customers and service providers. This two-way relationship occurs by classifying the types of hotels based on comment data on the hotel accommodation service site. The result is a recommendation for tourists who want the uniqueness of the hotel. The main purpose of this paper is to analyze several methods that are in accordance with the classification of hotel uniqueness. The method to be compared is the Support Vector Machine (SVM) and Naïve Bayes methods. In this research, it can be produced that the accuracy of Naïve Bayes is higher than the accuracy of SVM, the comparison is 75% and 62.5%.

Keyword : Naive Bayes, Support Vector Machine, Tourism, Hotel, Recomendation

Topic : Computer Science

Paper ID 24

FACTORS INFLUENCING THE USE OF M-GOVERNMENT SERVICES FROM THE CITIZENS' PERSPECTIVE: EXAMINING THE CHARACTERISTICS OF ADOPTERS AND NON-ADOPTERS

Jalal Mansour Al-awj, Dr. Norizan Mohd Yasin, Dr. Mohd Khalit Othman, Shamsan Mohammed Al-ammari, Prof. Dr. Norliya Ahmad Kassim
University of Malaya (Malaysia) Community College (Yemen) Universiti Teknologi MARA (Malaysia)
Email **:** infotech_jalal@yahoo.com **(**Jalal Mansour Hameed Al-awj**)**

Abstract
Mobile government (m-government) refers to the utilization of wireless and mobile technologies such as mobile phones as a new channel to deliver the public services to all

parties involved in e-government including citizens. The main objective of this study is to examine the personal characteristics and attitudes of m-government adopters and non-adopters. Several factors that influence the use of m-government services were investigated including performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, innovativeness, self-efficacy, trust in government, internet, variety and quality of services, and behavioural intention. A total of 512 Yemeni citizens were randomly surveyed including 377 (73.6%) adopters and 135 (26.4%) non-adopters. The statistical analysis revealed a significant characteristic difference between m-government adopters and non-adopters. For instance, innovativeness and behavioral intention were found to be the strongest predictors of the adopters' behavioral use of m-government services. On the other hand, the variety and quality of service was found to be the most significant determinant for the non-adopters group. Moreover, facilitating conditions was found to play an important role in shaping the adopters' Use Behavior, whereas the same factor did not have any significant impact on non-adopters group of participants. Implications of the results are discussed.

Keyword : M-government, adoption, adopters, non-adopters, Yemen
Topic : Computer Science

Paper ID 25

A SOCIO-TECHNICAL CONCEPTUAL FRAMEWORK TO GOVERN CYBER-PROPAGANDA IN SOCIAL MEDIA

Aimi Nadrah, Azah Anir Norman & Zuhaira Muhammad Zain
University of Malaya Kuala Lumpur, Malaysia , University Riyadh, Saudi Arabia
Email **:** aiminadrah12@gmail.com **(** Aimi Nadrah Maseri **)**

Abstract
Cyber propaganda has become a highly potential security threat and could be more damaging to global stability and even worse case, it has incited numerous offline physical violence (Awan, 2016). This research embarks on the two main objectives, which are to determine the cyber-propaganda determinants hence design an initial conceptual framework to govern this phenomenon. This research conducts a systematic review to find the related literature on cyber-propaganda determinants. The article published from 2014 to 2018 were selected from electronic databases such as Web of Science, Elsevier, Springerlink, IEEE and ACM. The selected papers are then classified according to two categories, behaviour and technology. Findings show two main categories of cyber-propaganda determinants which are social behaviour and social media technology. Both of these categories shows important determinants of the diffusion of propaganda in social media. These determinants are used in the conceptual framework to mitigate problems occurred through cyber-propaganda using the Protection Motivation Theory (PMT). With a better understanding of the key determinants, it is possible to educate and inspire others to combat misinformation. Henceforward, social media users can be directed to spread accurate information, by improving the awareness of the side effects caused by propaganda.

Keyword : Cyber propaganda, socio-technical, social media, behavior, Protection Motivation Theory (PMT)
Topic : Computer Science

Paper ID 26

THE IMPACT OF AGE, GENDER, AND EDUCATIONAL LEVEL ON THE CYBERSECURITY BEHAVIORS OF TERTIARY INSTITUTION STUDENTS: AN EMPIRICAL INVESTIGATION ON MALAYSIAN UNIVERSITIES

Fatokun Faith B, Suraya Hamid, , Azah Norman , Fatokun Johnson Oladele
Faculty of Computer Science and Information Technology, University of Malaya, Kuala Lumpur, Malaysia, Faculty of Natural and Applied Sciences, Anchor University, Lagos, Nigeria
Email: evangfatoks@gmail.com (Fatokun Faith Boluwatife)

Abstract

A lot of cybersecurity breaches occur due to human errors. Tertiary institutions need to enhance students' cybersecurity awareness and capabilities, hence promoting safe cybersecurity behaviors. Socio-psychological factors affects students' cybersecurity behaviors. We explore to what extent age, gender and educational level, plays a role in mediating the factors affecting tertiary institution students' cybersecurity behaviors. A cross-sectional survey was conducted among 340 students and Structural Equation Modelling was employed for evaluating impacts. Data analysis was conducted via SPSS (V.25). Results show that students cybersecurity behaviors varies based on Age for factors such as: Perceived Severity, Peer Behavior, Familiarity with Cyber Threats, Response Efficacy and Perceived Vulnerability. Gender effects existed in Security Self Efficacy, Computer Skills, Cybersecurity Behaviors, Perceived Severity, and little effects in Prior Experiences with Computer Security Practices. Educational level differences existed in Cues to Action and Familiarity with Cyber-Threats. Age, gender and educational level are important factors in mediating students' cybersecurity behaviors. Practically, our findings can instigate the need for specific/focused cybersecurity training and interventions for students in the tertiary institutions. It can also help cybersecurity training units in the tertiary institutions to target very vital components of cybersecurity behavior model, hence improving the cybersecurity behaviors of the students.

Keyword : Cybersecurity Behaviors, Age, Gender, Educational level, Tertiary Institution Students
Topic : Computer Science

Paper ID 27

DEVELOPMENT OF SOCIAL ENTREPRENEURSHIP LEARNING MODEL IN HIGHER EDUCATION

[1]*Muhammad Hamirul Hamizan Roslan,* [1]*Suraya Hamid ,* [2]*Mohamad Taha Ijab,* [3]*Sarah Bukhari*
[1]University of Malaya, [2]The National University of Malaysia, [3]NFC Institute of Engineering and Technology Multan, Pakistan
Email : hamirulhamizan@um.edu.my (Muhammad Hamirul Hamizan bin Roslan)

Abstract

Social Entrepreneurship aims to solve social problems and focus more on giving social impact on society. The academic programs of most universities tend to teach students to be employees instead of developing skills and competencies to try something new. The social

entrepreneurship education has been introduced from the undergraduate level to ensure the employability rate of fresh graduates while posing entrepreneurial capabilities that are essential for the graduates in society. In order to decrease the unemployment rate, the government suggested that graduates should be involved in entrepreneurship activities. This paper contributes to the development of social entrepreneurship learning model in higher education. The construct of this model derived from the literature review of the existing models in social entrepreneurship and the analysis of the relationship of data and pattern in social entrepreneurship through Social Network Analysis (SNA) using the narrative approach. This approach is chosen to fully understand the concept of social entrepreneurship beyond the large data. This learning model will help in creating, developing and sustaining a rising generation of social entrepreneurs whilst reducing fresh graduate's unemployment rate and nurturing more skills to the students.

Keyword : Social entrepreneurship, University, Learning model, Social network analysis
Topic : Computer Science

Paper ID 28

APPLICATION OF AHP ANALYSIS TO INCREASE EMPLOYEE CAREER PATHS IN DECISION SUPPORT SYSTEMS

Julius Santony, Faisal Amir, Sumijan, Rice Novita
Universitas Putra Indonesia "YPTK" Indonesia, Universitas Islam Negeri Sultan Syarif Kasim
Email : faisalamir5pt@gmail.com (*Julius Santony*)

Abstract

Employee career paths are one way for companies to improve employee performance in educating their students. The problem of manager in decision making uses the selection of methods and assessment processes subjectively so that the process is not in accordance with the goals of the career path. Therefore, an Analytical Hierarchy Process (AHP) method is needed to help make decisions. In this study, using the criteria of Planning, Teaching, Evaluating and Learning. Ranking results obtained that Learning criteria are very important criteria with calculation results of 0.602 when compared to the other three criteria. The DSS application provides the final results obtained from testing the calculation that the alternative Employee C is the best employee with a calculation of 0.227 compared to the other alternatives. The DSS application using the AHP method has a data accuracy rate of 86.67% and can be used as a support for manager decisions to make recommendations for increasing employee career paths.

Keyword : Analytical Hierarchy Process, Career Path, Decision Support System
Topic : Computer Science

Paper ID 29

BEHAVIOURAL INTENTION TO USE MYOB ACCOUNTING APLICATION AMONG ACCOUNTING STUDENTS

Dwi Fitri Puspa[1], Desi Ilona[2], & Zaitul[1]
[1]Faculty of Economic Universitas Bung Hatta, Padang, Indonesia., [2]Universitas Putra Indonesia YPTK, Padang, Indonesia
Email : zaitul@bunghatta.ac.id (Zaitul)

Abstract

This research aims to investigate the effect of effort expectancy, performance expectation, facility condition and social influence on behavioral intention to use MYOB accounting application. The unified technology acceptance and use of technology (UTAUT) is used to underpinned the relationhsip. University of Bung Hatta's accounting students registered at computer accounting subject in first session of academic year of 2018/2019 are research object. Seventy seven students are participated in this study. Using the smart-pls, we found that there is a positive relationship between performance expectation and social influence with behavioral intention. Theoritically, this study partially contribute to the UTAUT. Practically, this finding can be used to increase the behavioral intention to use MYOB among accounting students by increase the performance expectation and social influence

Keyword : Behavioural Intention, Performance Expectation, Effort Expectancy, Facility Condition, Social Influence
Topic : Relevant Topics

Paper ID 30

DESIGNING ENGINEERING DATA MANAGEMENT SYSTEM IN RESEARCH AND DEVELOPMENT COMPANY

Muhammad Nur, Luciana Andrawina
Telkom University, Indonesia
Email : muhammad.nur321@gmail.com (Muhammad Nur)

Abstract

in the Global Era, Management Information System has become inseparable part of the company. One of the Management Information System that has been considered important in a company is Engineering Data Management System (EDMS). The role of Engineering Data Management System is to store data as well as providing a user friendly access to the data, as long as the product lifecycle appropriates with the control rules defined before. This study took a case in XYZ Company on designing Engineering Data Management System using Windchill PLM (Product Life Management) to optimize the business process. XYZ Company is a private company that works in research engineering and manufacture. This study brought out new concept using Engineering Data Management System and explains the role of EDMS in XYZ Company's business process.

Keyword : Engineering Data Management System, Windchill, Product Life Management
Topic : Engineering

Paper ID 31

RISK ASSESSMENT OF HOUSING RECONSTRUCTION PROJECT COMMUNITY-BASED CONSTRUCTION AFTER THE EARTHQUAKE

Wendi Boy, Rafki Imani , Mayozi Chari, Widiawati Purba, Jihan Melasari
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : wendiboy92@gmail.com (*Wendi Boy*)

Abstract
Earthquake events caused thousands of families to be displaced, some inside refugee camps, others living in relatives' houses, besides causing the stages of government, economy and Social Stage to experience many obstacles. Reconstruction implementation Community-based housing is the backbone for sustainable development. Through this approach, it is hoped that people can realize the importance of building a building using earthquake resistant building structures. Based Deskrivtife analysis and factor analysis, there are 18 (eighteen) the risk of pre-construction project of housing reconstruction after the earthquake based society including the risk of unexpected (Undesirable) .From 8 (eight) Stages of pre-construction phase of the housing reconstruction is 1 (One) Stages of risks are still acceptable namely Stages 6 (Stages of Establishment of Community Organizations). The greatest risk is in Stage 8 is R.8.16. The price of Building Materials which has the biggest risk value is: 5.389. With this risk analysis it is hoped that the parties concerned can pay more attention to the risks that have high value (categorized as an unexpected risk)

Keyword : Hazard, Vulnerability, Capacity, Community-Based Housing Reconstruction, Risk
Topic : Engineering

Paper ID 32

DIGITAL MEDICAL DATA PROTECTION COMPLIANCE AMONG MEDICAL STAFFS

Uning Pratimaratri[1], Desi Ilona[2], & Zaitul[3]
[1]Faculty of Law, Universitas Bung Hatta, Padang, Indonesia., [2]Universitas Putra Indonesia YPTK, Padang, Indonesia [3]Universitas Bung Hatta, Indonesia
Email : zaitul@bunghatta.ac.id (**Zaitul**)

Abstract
The data protection compliance has been discussing among multidiscipline academician and practitioners. However, there is a lack of a such study conducting in Ind onesia's environment. Therefore, this study has a research objective of investigating the effect of perceived ease of use and perceived usefulness on attitude toward data protection policy among medical staff in west Sumatra, Indonesia. Besides, this study also seeks to determine the relationship between attitude toward data protection policy and data protection compliance. Data is gathered through survey and analysed using the SEM-PLS. Smart-Pls is applied by considering the assessment of measurement and structural model. The result show that there is positive significant relationship between perceived usefulness and attitude toward data protection policy. besides, this study documented a positive association between attitude toward data protection and data protection compliance. This study practically implies

that to increase the compliance behaviour among medical staffs, the institution has to increase the attitude toward data protection policy and perceived usefulness. theoretically, this study contributes to the technology acceptance model.

Keyword : Perceived Ease Of Use, Perceived Use, Attitudes Toward Data Protection, Data Proctection Compliance
Topic : Relevant Topics

Paper ID 33

TECHNOLOGY CONTEXT AND SOCIAL MEDIA ADOPTION AMONG SMALL-MEDIUM ENTERPRISE

Desi Ilona[1], Zerni Melmusi[1], Hanna Pratiwi[1] & Zaitul[2]
[1]Universitas Putra Indonesia YPTK, Padang, Indonesia ., [2]Universitas Bung Hatta, Indonesia
Email : zaitul@bunghatta.ac.id (Zaitul)

Abstract
This research paper aims to investigate the relationship between technology context and social media adoption among small and medium enterprise. Technology-organization-environment (TOE) is used to understand the relationship. Twenty-eight small and medium enterprise operating in west Sumatra province (Indonesia) is research sample. SEM-PLS is applied to analyse the data. in this case, smart-pls is employed and it has two assessments: measurement model and structural model assessment. The result show that there is a positive significant relationship between technology context and social media adoption. This paper has practical and theoretical implication and they are discussed in detail. Recommendations for future work is also informed in this paper.

Keyword : Technology Context, Social Media Adoption, Small-Medium Enterprise
Topic : Relevant Topics

Paper ID 34

STATISTICAL SOFTWARE ADOPTION BEHAVIOUR AMONG UNDERGRADUATE STUDENTS

Zaitul[1], Sitti Rizki Mulyani[2] , Muhammad Ridwan[2], and Desi Ilona[2]
[1]Universitas Bung Hatta, Padang, Indonesia., [2]Universitas Putra Indonesia YPTK, Padang, Indonesia
Email : desiilona@upiyptk.ac.id (*Desi Ilona*)

Abstract
Technology usage among students is a must since revolution industry 4.0. however, there is a limited study about technology adoption among student. The objective of this study is to investigate the effect of external factors on perceived ease of use and perceived usefulness. besides, this study also analyses the relationship between perceived ease of use and perceived usefulness on behavioural intention to use SPSS among accounting students. By extending technology acceptance model (TAM), this study developed eight hypotheses. Seven three accounting students were registered at subject of business research method in accounting department, Bung Hatta University, participated in this study. SEM-PLS is used to analyse

the primary data. the result show that computer attitudes has a positive relationship with perceived usefulness. in addition, SPSS self-efficacy also has a positive effect on perceived ease of use. Further, statistic learning value is positively related to perceived usefulness. finally, perceived ease of use is positively associated with behavioural intention to use SPSS. out of eight hypotheses being developed, four hypotheses is supported and the rest is rejected. Theoretical and practical implication is discussed in this article.

Keyword : External Factors, Perceived Ease Of Use, Perceived Usefulness, Behavioural Intention

Topic : Relevant Topics

Paper ID 35

EXPERT SYSTEMS DIAGNOSING OF BANANA PESTS AND DISEASES USE CASE-BASED REASONING METHOD WITH ANDROID

Hezy Kurnia, Vicky Ariandi, Heriyanto, Yesri Elva
Universitas Putra Indonesia "YPTK" Padang, Indonesia
Email : hezy_kurnia@upiyptk.ac.id (Hezy Kurnia)

Abstract

Designing a Case-based rasoning (CBR) android application is a method used to build a knowledge-based system. Source of system knowledge is obtained by collecting handling cases by an expert or expert. In this study the author makes or analyzes Banana Plant disease through the symptoms experienced by the Plant so that it can help a person or farmer in diagnosing the types of diseases and pests of banana plants based on their symptoms. The advantage with the application of this method is that farmers do not need to ask symptoms and diseases to an expert. This application is expected to make it easier for farmers to recognize the types of pests and diseases of banana plants and also this application has a clear calculation of the pests and diseases of banana plants. This application can be done offline

Keyword : Case based reasoning, Expert System, Android, Banana
Topic : Computer Science

Paper ID 36

MODEL DEVELOPMENT MEASUREMENT OF INTERESTS BASED ON EXPERT SYSTEM

Erdisna, Ganefri, Ridwan, Rice Novita, Wanayumini
Faculty of Engineering University of Padang, Faculty of Science and Technology Universitas Islam Negeri Sultan Syarif Kasim, Faculty of Science and Technology University of Sumatera Utara, Indonesia
Email : erdisna@gmail.com (Erdisna)

Abstract

This article aims to develop an expert-based interest-based measurement model to provide an overview of the interests that can assist in decision making of vocational interest decisions in the vocational field to be on the right target. The method used by designing vocational interest measurement instrument by producing four personality types used as knowledge base

is Tangible, Thinking, Flexible and Entrepreneur (TTFE) and integrated with expert system concept which makes a practical and efficient measurement model. The generated interest measurement model can help students quickly to overview the interest in decision making majors for higher education, can conduct online consultation, documentation, and can be used as a documentation file consultation portal at an institution.

Keyword : Interest Test Tool, Information Technology, Vocational
Topic : Engineering

Paper ID 37

PRACTICALITY OF E-LEARNING AS LEARNING MEDIA IN DIGITAL SIMULATION SUBJECTS AT VOCATIONAL SCHOOL IN PADANG

Monica Fransisca, Yuliawati Yunus, Aminda Dewi Sutiasih, Renny Permata Saputri
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : monicafransisca@upiyptk.ac.id (Monica Fransisca)

Abstract
This development research produces learning media in the form of E-Learning which is applied to digital simulation subjects at Vocational School in Padang. This E-Learning could improved student learning outcomes on digital simulation subjects. Research and Development (R and D) was used as research methods with Four-D development procedures (Define, Design, Develop, and Disseminate). The type of data that used in this research was primary data. This research used descriptive data analysis techniques by describing the practicality of E-Learning as learning media. The results obtained from this research was the results of the practicality test E-Learning as learning media which are based on the responses of teachers and students in digital simulation learning. The practicality test result shows that E-Learning as learning media has high practical value. Based on the result of the research it can be concluded that E-Learning as learning media is practical for use by teachers and students.

Keyword : Learning Media , E-Learning , Practicality
Topic : Computer Science

Paper ID 38

ANALYSIS OF PRIORITIES QUEUING MODEL (N-P) SYSTEM WITH MULTIPLE CHANNEL MULTIPLE PHASE AND SIMPLE ADDITIVE WEIGHTING

Herman Putra Rajagukguk, Muhammad Zarlis, Sutarman
Universitas Sumatera Utara, Indonesia
Email : herman@asia.com (Herman Putra Rajagukguk)

Abstract
The queue is a situation where people/goods must wait to get a turn of service. This happens because the number of arrivals is greater than the number of services. In this research, the authors conducted priority queues based on weighting using the SAW algorithm. Queue modeling uses Multiple channel Multiple Phase, where there are 2 phases that will be passed on the queue system. In phase 1, an assessment will be made using the SAW algorithm to

produce weights value for each queue. Then in phase 2, a call will be made based on the priority value. In the priority queue, the queue can get service faster or slower according to the queue category. Tests are carried out following (M/M/1: GD/∞/∞) dan (M/M/3: PS/∞/∞) modeling with 100 test data with random variables. In this queueing model, the arrival distribution follows a Poisson distribution, and the service distribution follows an exponential distribution. After testing, the results of the queue were obtained: 15,3% effective in the low category, 65% effective in the normal category, 100% effective in the medium category, 100% effective in the high category.

Keyword : Priority Queue,SAW,Multiple Channel Multiple Phase
Topic : Computer Science

Paper ID 39

PREDICTION OF CANAL EROSION ON TIDAL SWAMP DELTA TELANG I, BANYUASIN REGENCY, SOUTH SUMATRA

Achmad Syarifudin, Henggar Risa Destania, Yunan Hamdani
Universitas Bina Darma, Indonesia
Email : syarifachmad6080@yahoo.co.id (Achmad Syarifudin)

Abstract
Surface water dynamics at swamp region either in tertiary compartment also at canals very influenced by several conditions, among others: total rainfall, hydro-topography, potential high water overflow, potential drainage, water order network condition, and water order building operation. For that entire components must be evaluated and at analysis to support plants amount of water required fulfillment efforts. The canals need observation data directly at field so that can accurate observation data. In the manner likes this need time, energy and cost big enough. Therefore, computer model use to guess and evaluate network performance is a correct solution. Related to troubleshoot above, so necessary existence to watchfulness besides to evaluate existing drainage system performance in water face control at also necessary channel stability analysis in the effort support operation and channel maintenance. Supposed to this watchfulness can describe according to intact process the happening of erosion and sedimentation at channel, environment service aspect and qualitatively model constructively SOBEK software can explain sedimentation dynamics in canals at tidal swamp region

Keyword : Canals at swamp region, SOBEK model's, Sedimentation dynamics
Topic : Engineering

Paper ID 40

DESIGNING LECTORA BASED INTERACTIVE CD LEARNING MEDIA IN BASIC PROGRAMMING SUBJECTS (CASE STUDY OF CLASS X SMKN 2 PADANG)

Indra Wijaya, Rini Sefriani, Menrisal, Popi Radyuli, Lili Andrayani
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : indra_wijaya@upiyptk.ac.id (Indra Wijaya)

Abstract

Abstract-This research and development aims to produce products in the form of Interactive Media CDs for students of class X majoring in software engineering at Padang State Vocational High School 2 based on the lectora inspire application. The research method used is the method of research and development, using the ADDIE development model. The development steps are: (1) Analysis, (2) Design, (3) Development, (4) Implement, (5) Evaluate. Product development validation includes. The results of the assessment by experts in terms of the aspect of content eligibility: 71.00%, language component: 71.25%, presentation component: 71.00%, graphical component: 71.25%. Overall, the validator test evaluation of the Basic Programming Interactive CD Media is 71.13%, so that the level of validity can be interpreted Fairly Valid to be used. The results of the practicality test assessment in terms of the user state: 80.11%, the effectiveness of learning time: 79.60%, benefits: 80.90%. Overall, the practicality assessment of the Basic Programming Interactive CD Media is 80.20%, so that the practical level can be interpreted as practically used. The results of the effectiveness test were reviewed from the aspect of learning pleasure: 79.08%, the presence of interesting teaching materials in learning: 71.50%. Overall, the assessment of the effectiveness.

Keyword : Design, CD Interactive, Lectora Inspire, Basic Programming.
Topic : Computer Science

Paper ID 41

INTERACTIVE MAP MODEL OF FLAT DESIGN FOR ISTANO BASA PAGARUYUNG TOURISM DEVELOPMENT

Tedy Wiraseptya, Rafki Imani, Muhammad Afdhal, Heri Yanto
University of Putra Indonesia YPTK Padang, Indonesia
Email : tedyibob@yahoo.co.id (Tedy Wiraseptya)

Abstract

The power in conveying messages to communicants is a form of active media. There are many things and forms of media that developed in the digital era today. Of course, the development of the media to be more friendly and close to the community will make it easier to convey the message. The media is also the most important part of supporting the tourism sector. Especially in the cultural tourism sector that we are familiar with cultural heritage or historical heritage. one of them is the Rumah Gadang Istano Basa as a historical heritage of West Sumatra. The map that is part of the sign system is certainly very needed for visitors. A flat design that is appealing in a way that will certainly help increase the interest of visitors, especially this makes it easier to share information through digital technology such as smartphones. This map design method will adapt to the Waterfall design method created by Pahl and Beitz. In the design process, it will go through the requirements analysis, design,

implementation, integration testing and ending with maintenance. Of course, the design of maps that use this digital application must follow a structured stage of the Waterfall method. Then, the design which becomes an important point in this design is the concept of infographics that is clear and has the power in readability.

Keyword : Media design, tourism and Rumah Gadang
Topic : Relevant Topics

Paper ID 42

BREAST CANCER CLASSIFICATION USING DIGITAL BIOPSY HISTOPATHOLOGY IMAGES THROUGH TRANSFER LEARNING

Ghulam Murtaza, Liyana Shuib, Ainuddin Wahid Abdul Wahab, Ghulam Mujtaba, Ghulam Raza, Nor Aniza Azmi
University of Malaya, Malaysia
Email : liyanashuib@gmail.com (Nor Liyana Mohd Shuib)

Abstract
Breast cancer (BC) is one of the major cause of deaths among women worldwide. The early diagnosis of BC can lead to minimize the severe effects of cancer as compared to the last stage diagnosis. The medical imaging modalities like mammograms or biopsy histopathology (Hp) images are usually suggested by doctors for diagnostic test. While Hp image analysis make doctors more confident to diagnose BC as compared to mammograms. Many studies used Hp images to develop BC classification models to assist doctors for early BC diagnosis. However, these models lacks to show better and reliable results in terms of reporting multiple performance evaluation metrics. Therefore, the goal of this study is to create a reliable, more accurate and consumes minimum resources by using transfer learning based convolution neural network model. The proposed model uses pretrained model after fine tuning, hence requires less number of images and can show better results on minimum resources. In this study, BreakHis publicly available dataset was used for overall experiments. BreakHis was divided into three parts like training set, validation set and testing set. In addition, training set was augmented followed by stain normalization. By using the concept of transfer learning (TL), AleNext was retrained after fine tuning the last layer for binary classification like benign and malignant. Afterwards, preprocessed images are feed into TL based model for training. The model training was performed many time by changing the hyper-parameters randomly until minimum validation loss was achieved. Now the trained model was used for feature extraction. The extracted features were further evaluated by using six ML classifiers (i.e. softmax, k nearest neighbor, support vector machine, naive bayes, decision tree, linear discriminant analysis) through five performance evaluation metrics like accuracy, sensitivity, specificity, precision and F measure. The softmax has outperformed among all classifiers. Furthermore, to reduce the wrong prediction a misclassification reducing (MR) algorithm was developed. After using the MR algorithm the proposed model produced better and reliable results. The observed accuracy, specificity, sensitivity, precision and F measure is 81.25%, 77.47%, 82.49%, 91.70%, and 86.80% respectively. These results shows that the proposed TL based model along with misclassification reduction algorithm produced comparable results to the existing state-of-the-art baseline models. Hence, the proposed model can serve as second opinion for BC classification in any healthcare center.

Keyword : Breast cancer classification, deep learning, transfer learning, histopathology biopsy image
Topic : Computer Science

Paper ID 43

BANDIT ALGORITHMS IN INFORMATION RETRIEVAL EVALUATION AND RANKING

Sinyinda Muwanei, Hoo Wai Lam, Sri Devi Ravana, Douglas Kunda
University Malaya, Malaysia; School of Science, Malaysia., Mulungushi University, Zambia
Email : wlhoo@um.edu.my (*Hoo Wai Lam*)

Abstract
Bandit algorithms have been widely used in many application areas including medical treatment, information retrieval evaluation and ranking, largely due to their promising performance. This study aims to investigate the overall research productivity, demographics and trends that shape the information retrieval evaluation and ranking domain. A preliminary study is conducted through systematic literature review to investigate researches in bandit algorithms for the pass decade. In totality the demographics, evaluation metrics, datasets, contribution facets of primary studies as well as the bandit categories are discussed.

Keyword : Bandit algorithms, information retrieval and ranking
Topic : Computer Science

Paper ID 44

A COMPARATIVE REVIEW OF ISMS IMPLEMENTATION BASED ON ISO 27000 SERIES IN ORGANIZATIONS OF DIFFERENT BUSINESS SECTORS

Zaidatulnajla Hamdi, Azah Anir Norman; Nurul Nuha Abdul Molok & Farkhondeh Hassandoust
Dept. of Information Systems, Faculty of Computer Science and IT, University of Malaya;
Dept. of Information Systems, Kulliyyah of Information and Communication Technology, IIUM & Auckland University of Technology
Email : najelahamdi@gmail.com (Zaidatulnajla Binti Hamdi)

Abstract
Organizations have different takes on Information Security Management Systems (ISMS) since security measurements vary according to their business relevance. One way to assure ISMS is being well-implemented is by having standard compliance such as the ISO 27000 series. The ISO 27000 series is a family of standards that provides a framework for best practice ISMS that helps organizations keep their information assets secure. This paper intends to seek how organizations in different business sectors implement ISMS in their practices. By identifying which organization attains a higher number of ISO requirements, it is anticipated that the characteristics that increase the chances of an organization being certified can be distinguished. This paper reviews case studies regarding the ISMS implementation based on ISO 27000 series between organizations in different business sectors. The result of this paper presents the state of ISO compliance of the organizations.

The findings also discussed the characteristics of organizations that are applicable for certification. Through the findings, it is found that the organization, which fulfilled the highest number of ISO requirement, has a stronger possibility of being certified. However, ISO standards should be more dynamic to support diverse business environment thus avoiding generalization to get compliance.

Keyword : ISO27000, information security management systems (ISMS), compliance, nonprofit, educational, enterprise and SME
Topic : Computer Science

Paper ID 46

HOW ONLINE MEDIA AND TECHNOLOGY INOVATION INFLUENCE CONSUMER'S PURCHASE INTENTION

Sitti Rizki Mulyani, Larissa Navia Rani, Darma Syahrullah Ekajaya, Marta Widian Sari, Vivi Nila Sari
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : vivinilasari@upiyptk.ac.id (*Vivi Nila Sari*)

Abstract
The aims of this research is to know how online media and technology innovation influence consumer's purchase intention. The sample of this research were the students of UPI "yptk" Padang who followed the @Indonesia.Jersey Instagram. There were 100 respondents. The result of the research had the positive and significant influence of online media and technology innovation toward the consumer's purchase intention. This research has contributed to increase sales with online marketing.

Keyword : Social Media, Technology Inovation, Consumer's Purchase Intention
Topic : Relevant Topics

Paper ID 47

DEVELOPMENT DATABASE E-COSTAL FOR FISHERMEN'S ASSISTANCE PROGRAM AT TERENGGANU

Dara Aisyah, Al Hamidy Hazidar, Muhammad Sontang Sihotang, Bagus Priambodo, Billy Hendrik, Inge Handriani, Zico Pratama Putra, Asama Kudr
FISIP USU Medan, Indonesia Institute of Visual Informatic (IVI), Universiti Kebangsaan Malaysia, Bangi, Malaysia. FMIPA USU Medan, Indonesia., Universitas Mercu Buana, Jakarta, Indonesia ., Universitas Putra Indonesia "YPTK" Padang, Indonesia., Universitas Mercu Buana School of Electronic Engineering, Indonesia and Computer Science Queen Mary University of London London, UK Institute of Visual Informatics.
Email : al_didy@yahoo.com (Al Hamidy)

Abstract
Socioeconomic development program of coastal communities is the indispensable role of public administration and ICT in helping to empower fishing communities. This stored information in the database will always be referred by a variety of users from the organization or from outside organization to get a data or information. Capacity and

information requirements are based on the needs of users involve. Public administration held to provide public services and benefits can be felt by the community after enhancing professionalism and applying ICT to produce a technique efficiency and effectiveness. By applying e-Costal database for fishermen in Terengganu for development schemes Welfare Program (SPKR) facility will produce some profile fishermen data who have developed such an assessment of the program SPKR based on the performance of the implementation and overall management performance in achieving its objectives, overcome problems of poverty among coastal communities in the area Kuala Terengganu, Terengganu Darul Iman.

Keyword : ICT, e-Costal, Fishermen, Program SPKR
Topic : Relevant Topics

Paper ID 49

ENHANCEMENT OF OTP STREAM CIPHER ALGORITHM BASED ON BIT SEPARATION

Arisman, Mahyuddin K. M. Nasution, Syahril Effendi
Universitas Sumatera Utara, Indonesia
Email : arisman.pili8@gmail.com (Arisman)

Abstract

With continuous development of cryptanalyst technologies, it is necessary to overcome vulnerability of a cryptographic algorithm. To counteract a threat, enhancement one time pad (OTP) technique hasbeen introduced. This algorithm fully encrypt the text with combined using key. The key length has to have a same length of the message. Actually in this paper, a new method to enhancement OTP stream cipher using separation of bit has been adopted, bits of plaintext will be separate each into 2 bits then rotating it key using 4x2 matrix, further key will be inserted into separated plain text and re-separate each it into 1 byte, hereinafter the new plaintext will be XORed with a rotated key. To produce more complicated cipher.

Keyword : One Time Pad, Separation Of Bit, Enhancement Otp
Topic : Computer Science

Paper ID 50

CONVERGENCE ANALYSIS OF ACCELERATION AND GENERALIZATION OF E-LEARNING IN THE MANIFESTATION OF GLOBALIZATION EDUCATION READINESS 4.0

Sitti Rizki Mulyani, Agung Ramadhanu, Desi Permata Sari, Rahmatul Husna Arsyah, Neni Sri Wahyuni Nengsih
Universitas Putra Indonesia "YPTK" Padang, Indonesia
Email : rahmatulhusna_arsyah@upiyptk.ac.id (Rahmatul Husna Arsyah)

Abstract

Education 4.0 is an education characterized by the use of digital technology in the learning process or known as a cyber system. In its implementation, online learning or what we know as e-learning today really determines the quality of education in every nation and country, coupled with the entry of the industrial era 4.0 which must manifest globalization learning

without any limits, both in terms of time, distance, and cost. Utilization of E-learning will have a good impact on education. As a form of expression of online learning, the research team from the Putra Indonesia University YPTK Padang institution has implemented an online lecture system, facilitated by the Learning Management System (LMS) in the form of the Moodle Application. This research was conducted at Putra Indonesia University YPTK Padang with a population of all active students, while for a sample of 381 people, the sampling technique was Propotional Random Sampling using Slovin formula. As for the output of the results of this study, among others, it can be a reference material for accredited national journals and scopus. While the impact of the outcome of the research results will be referred to as a role model in online learning.

Keyword : Konvergensi, Akselerasi, Generalisasi, E-Learning
Topic : Relevant Topics

Paper ID 51

STRENGTHENING CHARACTER EDUCATION WITH THE IMPLEMENTATION OF MACHINE LEARNING IN THE MILLENNIAL ERA INDUSTRIAL REVOLUTION 4.0

Ulya Ilhami Arsyah, Rahmatul Husna Arsyah, Mutiana Pratiwi, Novia Lestari
Universitas Negeri Padang, UPI "YPTK" Padang, UMMY Solok, Indonesia
Email : ulyailhami1991@gmail.com (Ulya Ilhami Arsyah)

Abstract
Education is a part that cannot be separated from human life. There is a relationship between education and prosperity and patterns of human life. In the context of human life, education has a significant role in aspects of social, economic, environmental, political and security safeguards. In terms of welfare, education has a large influence. One education actor who plays a very important role is the teacher, who will teach and become an example for his students. And things that should not be eroded by the development of the age are the cultivation of good character in educating students, including those that must be prevented are acts of violence against students maybe it can happen in the world of education, either by the teacher or fellow students. In this study a web-based Expert System will be designed using the Forward Chaining method. Forward Chaining is a search method or a forward tracking technique with information and merging rules to produce conclusions. With this system the teachers can conduct online consultations that will be applied in machine learning in the learning process, so that the teachers can find out whether their actions in the teaching and learning process are in accordance with

Keyword : Education, expert system, forward chaining, machine learning, character
Topic : Computer Science

Paper ID 52

ASSESSMENT FOR SEISMIC ACTIVITIES IN PESISIR SELATAN WEST SUMATRA IN 2018

Rafki Imani, Wendi Boy, Utami Dewi Arman, Afrilda Sari, Widiawati Purba, Maiyozzi Chairi, Jihan Melasari
University of Putra Indonesia YPTK Padang, Indonesia
Email : rafimani17@yahoo.co.id (Rafki Imani)

Abstract

The tendency of the recurring earthquake phenomenon in the same place in an area with a high seismic level has triggered an increase in earthquake activity in the region. Pesisir Selatan Regency, which is located in West Sumatra Province, is a coastal area that is very close to the waters of the Sumatran sea as well as a source of destructive earthquakes that hit Sumatra. To anticipate the risk of future earthquakes and as an effort to increase public awareness and preparedness in Pesisir Selatan, in particular, it is necessary to provide understanding and knowledge of the seismic activities that have occurred there. The research method was carried out by collecting earthquake event data in Pesisir Selatan Region for the period of January - December 2018 from the United States Geological Survey (USGS) data. The results of the analysis concluded, that in the Pesisir Selatan Region there were frequent tectonic earthquakes, and also followed by landslides due to the contours of many hilly areas.

Keyword : Assessment, earthquake, Pesisir Selatan, and seismic.
Topic : Engineering

Paper ID 53

ONLINE PRACTICE MANAGEMENT SYSTEM OF EDUCATION FIELDS (PLK) FKIP UPI YPTK PADANG

Astri Indah Juwita, Muhammad Ikhlas
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : astriindahjuwita@gmail.com (*Astri Indah Juwita*)

Abstract

His study aims to develop the management system of PLK in the form of online system based on FKIP UPI YPTK Padang website that is valid, practical and effective. This is because there is no special system to accommodate PLK implementation process as PLK's online management system. The type of research that the authors use is Research and Development research better known as R & D. System test conducted on students at FKIP Prodi PTI UPI YPTK Padang. The test subjects consisted of the validity aspect of the system performed on 3 validators (expert), and the media practicality aspect that was done on 1 practitioner and 35 students who did the PLK. Instruments used in collecting data in the form of questionnaires of validity and practicality, and effectiveness. The data analysis techniques use Aiken's V formula to find validity and calculate practicality percentages for practicality and use factor analysis techniques to search for the effectiveness of a website-based online management system. Based on the research that has been done, then obtained online management system based website PLK is www.fkipupiyptk.com, with validity value 0.80 Valid stated.

Keyword : Keywords: System, Online Management, PLK
Topic : Computer Science

Paper ID 55

DETERMINATION OF THE SHORTEST ROUTE TOWARDS THE TOURIST DESTINATION AREA USING THE ANT ALGORITHM

Ni Luh Wiwik Sri Rahayu Ginantra[1], T Taufiqurrahman[2], Gita Widi Bhawika[3], Ida Bagus Ary Indra Iswara[1], Anjar Wanto [4]

[1] STMIK STIKOM Indonesia, Denpasar, Bali, Indonesia., [2]Universitas Darussalam Gontor, Jawa Timur, Indonesia., [3]Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia., [4]STIKOM Tunas Bangsa, Pematangsiantar, Sumatera Utara, Indonesia
Email : anjarwanto@amiktunasbangsa.ac.id (Anjar Wanto)

Abstract

There are so many tourism objects in the world, especially in Indonesia. One of the most famous tourism objects in Indonesia, including Bali, Borobudur, Lake Toba and many others that have natural beauty and uniqueness, attract local and foreign tourists to visit the place. However, there are several routes to get to these tourist attractions, so that local tourists and foreign tourists who want to visit have a little trouble having to go through which route to get to their destination. Therefore, the purpose of this study is to determine the shortest route to the tourist area using the ant algorithm. Ant algorithm is an algorithm adopted from the behavior of ant colonies. This study uses five cities as examples, including City 1 (C1), City 2 (C2), City 3 (C3), City 4 (C4) and City 5 (C5), with the starting point of City 1 (C1) and the destination point of City 5 (C5). Based on calculations using the ant algorithm for determining the shortest route, the shortest and fastest route obtained by ant 4 is route C1 → C4 → C5 with a distance of 140 KM.

Keyword : Shortest Route, Tourist Destination, Ant Algorithm, Artificial Intelligence
Topic : Computer Science

Paper ID 56

DECISION SUPPORT SYSTEM FOR MAPPING TYPES OF TIMBER AND NUMBER OF PRODUCTS FOR FURNITURE HANDLING IN THE MAIN WORK SERVICE USING AHP (ANALYTICAL HIERARKI PROCESS) METHOD IN INCREASING THE PROFITS OF PRODUCTION

Firdaus, Ade Saputra, Mondra Neldi, Ritna Wahyuni, Usman
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : firdaus@upiyptk.ac.id (Firdaus)

Abstract

The purpose of this research is to help the system to increase profits obtained by using the Decision Support System (DSS) and Analytical Hierarchy Process (AHP) methods. Where each criterion and alternative is compared with each other so as to give priority output values. With this application it is expected to reduce errors in data management so as to obtain accurate information. Software design methods used are ongoing system flow, global design, new system flow, context diagram, data flow diagram (DFD), entity relationship diagram (ERD), detailed design, database design, and system implementation. This research is carried out by applying a framework or research method that starts from identification of problems, problem analysis, set goals, study literature, collecting data, system design, system testing,

and system implementation. By conducting research with the research method will produce the right analysis on the Tunas Karya Utama Furniture Handicraft and applied to a decision making application program. Reports generated in the decision support system process will produce accurate reports later.

Keyword : DSS,AHP, Advantages & reservations
Topic   : Computer Science

Paper ID 57
BACKPROPAGATION NEURAL NETWORK PREDICTION FOR CRYPTOCURRENCY BITCOIN PRICES

Rini Sovia, Musli Yanto, Arif Budiman
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : rinisovia@upiyptk.ac.id (*Rini Sovia*)

Abstract
The value of bitcoin currency is very volatile, hard to guess for every hour, so many of the bitcoin traders suffer losses because they are wrong in managing their bitcoin assets. Changes in the price of bitcoin itself are influenced by many things such as the closing of the bitcoin market in a country, the occurrence of hacker attacks on the bitcoin blockchain and the emergence of new coins that use technology similar to bitcoin. But when a stable market situation changes the price of bitcoin is purely influenced by market forces. By implementing an artificial neural network using backpropogation method, it will be able to predict the price of bitcoin by giving a form of predictive results that are strengthened with a fairly good value of accuracy. This research begins by determining prediction variables with target values that can be determined based on previous bitcoin prices. This artificial neural network process is able to conduct training and testing of data based on network patterns that have been formed, then the results of training and testing of the network will be analyzed again, so that at the last stage the best network patterns will be used in the prediction process.

Keyword : Bitcoin, Market, Artificial Neural Network, Backpopagation Method
Topic   : Computer Science

Paper ID 58
DESIGNING A MULTIMODAL GRAPH SYSTEM TO SUPPORT NON-VISUAL INTERPRETATION OF GRAPHICAL INFORMATION

Zico Pratama Putra, Deni Setiawan, Bagus Priambodo, Al Hamidy Hazidar, Mardhiah Masril, Inge Handriani, Asama Kudr
Queen Mary University of London, Universitas Mercu Buana, Universiti Kebangsaan Malaysia, Universitas Putra Indonesia "YPTK" Padang, Indonesia
Email : z.putra@qmul.ac.uk (Zico Pratama Putra)

Abstract
While researchers have performed numerous studies to understand the human interpretation of visual graphs in reading, comprehending and interpreting displayed data; visually impaired (VI) users still face many challenges that prevent them from fully benefiting from these

graphs. Consequently, it affects their understanding of data visualisation, and in turn reduces their role in collaborative tasks with their sighted peers in both educational and working environments. We intend to develop an application where visually impaired users can work together to build a collaborative chart that supported by data sonification in the mobile environment. The application divides the role of the user which are publisher and subscriber. All the features were tested by functional testing and the usability testing with result of 6.7 out 10.

Keyword : User-Centered Design; Multimodal Interfaces; Mobile User Interfaces; Auditory Graph; Sonification

Topic : Computer Science

Paper ID 59

PREDICTING INDONESIA'S GDP USING K-NEAREST NEIGHBOUR REGRESSION

Bagus Priambodo, Sarwati Rahayu, Al Hamidy Hazidar, Mardhiah masril, Inge Handriani, Zico Pratama Putra, Asama Kudr Nseaf, Emil Naf'an, Deni Setiawan, Yuwan Jumaryadi
Universitas Mercu Buana, Universiti Kebangsaan Malaysia, Universitas Putra Indonesia "YPTK" Padang, Queen Mary University of London
Email : bagus.priambodo@mercubuana.ac.id (Bagus Priambodo)

Abstract

According to the IMF, about a 1% decline in US economic growth will reduce economic growth in Asia of 0.5% -1%. The impact of the global recession that originated from the recession in the US will affect the projected economies in Asia, including Indonesia, both direct and indirect nature. In this study, we predicted Indonesia's GDP in the event of the economic crisis that hit Indonesia starting in 1998. Instead using famous prediction algorithm as neural network and linear regression. K-Nearest Neighbour are selected because it is easy and fast to use in dataset that are not to Large. We use dataset from 1980-2010, consisting of rice prices, premium prices, GDP of Japanese country, American GDP, currency exchange rates, Indonesian government consumption, and the value of Indonesia's oil exports. For evaluation we compare k-NN regression prediction result with prediction result using back propagation neural network and multiple linear regression algorithm. Result show, k-NN regression is able to predict Indonesia's GDP better than neural network, and multiple linear regression method.

Keyword : K-Nearest Neighbour Regression, Neural Network, Multiple Linear Regression, Predicting Indonesia's GDP

Topic : Computer Science

Paper ID 60

IMPLEMENTATION AND DESIGN USER INTERFACE LAYOUT USE LEAP MOTION CONTROLLER WITH HAND GESTURE RECOGNATION

Billy Hendrik, Fauziah, Mardhiah Masril, Yunan Fauzi Wijaya, Silfia Andini
Universitas Putra Indonesia "YPTK" Padang Universitas Nasional, Indonesia
Email : billy_hendrik@upiyptk.ac.id (Billy Hendrik)

Abstract

Human Computer Interaction is the study how to design, evaluate, and implement computer systems interactive, the systems can make a dialogue with human. This research was designed and implementation leap motion used hand movements into digital models, which can be used to replace the function of the mouse or keyboard and can provide an alternative in the utilization of hand movements as interactions that the naturally between human and computers and allowing users to input gesture commands into an application in place of a mouse or keyboard. Human gesture recognition as technique interaction for deliver interpretation more natural and for communicating with computers. The aim of this research to find usability leap motion, how effectiveness of the Leap Motion controller for hand gesture recognition for solve important problems in human use of mouse or keyboard. Testing and implementation from this reseach focused are tracking, detection, dynamic, and statis gesture recognation. The result 6 gesture recognation double outward swipe, tap, swipe, clap,circular and fly control tap accuracy of gesture interrpretation data has obtained 87.62%. The uses the data for recognation model has obtain very good and testing with Leap Motion visualizer hand gesture recognation are often sensitive to poor resolution.

Keyword : human computer interaction, leap motion, gesture recognition
Topic : Computer Science

Paper ID 61

TOWARDS DATA-DRIVEN EDUCATION WITH LEARNING ANALYTICS FOR EDUCATOR 4.0

Salimah Mokhtar, Jawad A. Q. Alshboul, Ghassan O. A. Shahin
Faculty of Computer Science & Information Technology, University of Malaya, Kuala Lumpur, Malaysia / Department of Information Systems & Multimedia, Palestine Polytechnic University, Hebron, Palestine
Email : salimah@um.edu.my (Salimah Mokhtar)

Abstract

Learning analytics has not been extensively used yet as necessary tools in the management and operation of public universities in Malaysia. Massive amount of data been created and collected on students at the faculty but mostly remain dark and unexplored. Generating many reports, having lots of alerts or dashboards does not make a faculty data-driven. To be smart, a faculty must utilize technology to enable and support better planning and decision-making, and to be data-driven, a faculty must have analytics to drive actions for value. This paper intends to explore the impact of IR 4.0 in the field of education and research into the possibility on how a university or a faculty can adapt to IR 4.0 and function in the big data environment. It will present the concept of Education 4.0, data-driven education and learning analytics. To transform, universities must rethink the current teaching practices and then

redesign learning to suit future demand. This is discuss next. Finally, it summarizes the roles that educators 4.0 should play in Education 4.0.

Keyword : Learning analytics, Data-Driven, Education 4.0, Educator 4.0
Topic : Computer Science

Paper ID 62

CONTROL SYSTEM OF MICROCONTROLLER BASED AUTOMATIC MILK COFFE DRINK

Nofriadi, Herman Saputra, Juna Eska, Adi Prijuna Lubis, Nuriadi Manurung
College of Informatics and Computer Management Royal, Indonesia
Email : nofriadi.royal85@yahoo.com (nofriadi)

Abstract
Coffee is one of the drinks that are in demand by almost all groups of society. But the presentation is still done manually so it requires a long time. Besides that, the manual presentation of milk coffee must estimate the amount of coffee, milk and sugar used in a cup of milk coffee. To simplify the presentation, it can be done by making equipment that is able to provide milk coffee automatically. For automation of tools capable of making coffee a control system is needed. In this case using a microcontroller to regulate the automation of coffee makers. Arduino is used to adjust the opening and closing of the servo. set the length of the dc motor rotation using a relay set the motor that is used as a stirrer. While working from the push button itself at the beginning of the process that is when the user presses the push button, then the microcontroller works according to the program planted in Arduino. With this automatic milk coffee maker, expected to facilitate connoisseurs and milk in making a selection of the desired milk coffee menu

Keyword : Coffee, milk, control, automatic, microcontroller
Topic : Computer Science

Paper ID 64

DISASTER RISK MANAGEMENT STRATEGY IN THE ENVIRONMENT AND DISASTER MITIGATION-BASED SCHOOL (SWALIBA)

Sindhung Wardana, Herdis Herdiansyah, and Adam Wicaksono
School of Environmental Science, Universitas Indonesia, Indonesia
Email : herdis@ui.ac.id (Herdis Herdiansyah)

Abstract
More than 46,000 schools in Indonesia had been affected by the disaster in the past 15 years and around 250,000 schools in Indonesia are located in the disaster management area. Even though, school is a vital infrastructure for the development of a country's civilization. In the school, the process of character forming for the next generation of the nation both socially and intellectually takes place. After the 9.1 SR earthquakes and tsunami in Aceh on December 2004, the disaster risk management movements which were begun from school were more intensively conducted. Among the disaster risk management movements at the

school level, there is a concept and formulation of the environment and disaster mitigation-based school (SWALIBA) by Indonesian Geographer Association and Indonesian Geography Student Association. Many of the schools at the primary and secondary education level began to adopt that concept. One of the schools which adopted the SWALIBA concept is junior high school 41 of Semarang City and has been applying it for 5 years. This research was conducted to study the applied risk management strategies. The result showed the gap between the applied strategy and the perception which formed the preparedness characteristic of the students as the implementation object.

Keyword : Management, Risk, School, Education, Disaster
Topic : Engineering

Paper ID 65

LANDSLIDE VULNERABILITY IN RESIDENTIAL AREAS FOR DISASTER MITIGATION IN SAWANGAN DISTRICT, DEPOK CITY

Peni Puspitasari, Herdis Herdiansyah
School of Environmental Science, Universitas Indonesia, Indonesia
Email : herdis@ui.ac.id (Herdis Herdiansyah)

Abstract

Disaster occurs due to the interaction of threat factor, vulnerability and inability of the people. The lack of the capacity for decent settlement for the people has extended the use of lands for residential areas in unsuitable zone. Depok city is one of buffer zones of the capital city, Jakarta, with the population growth increasing significantly because of the pressure of the high human migration. The rapid development of an area becomes the trigger of the increasing need for lands. One of the destinations as settlement in Depok city is Sawangan district. Analyzing data technique that will be used is the descriptive analysis with the spatial approach. Map analyzing using the overlay analysis and classification. Based on the result of the overlay analysis from some maps, it shows that Sawangan district has the bumpy physical condition of an area with the slope rate of 3-8 %, population density rate of 4.001-6000 inhabitants per km2. But it has a potency leads to the land movement that is typically medium. It shows that there is a potency of human activity by building the residential-area with the high population density causes the landslide vulnerability tends to be high

Keyword : Landslide, Vulnerability, Disaster, Residential Areas, Mitigation
Topic : Engineering

Paper ID 66

THE IMPACT ANALYSIS OF FLOOD DISASTER IN DKI JAKARTA: PREVENTION AND CONTROL PERSPECTIVE

Adam Wicaksono dan Herdis Herdiansyah
School of Environmental Science, Universitas Indonesia, Indonesia
Email : herdis@ui.ac.id (Herdis Herdiansyah)

Abstract

Flooding in Jakarta is a frequent disaster, of the 2,572 disaster events in Indonesia throughout 2018, more than half of the events were dominated by floods and cyclones which made it the most frequent disaster throughout the year. The high population in Jakarta, which reached 10.5 million due to the flow of urbanization in the past 30 years, has also added to the level of vulnerability to disaster risk. Jakarta has annual flood patterns and larger 5-year floods such as in 1996, 2002 and 2007. According to the risk assessment of flood exposure published by DKI Jakarta National Disaster Management Agency (BNPB) 10.177. 570 people are potentially exposed to disasters. Physical losses reached Rp 2,967,433 million, and economic losses reached Rp 12,732 million. This is certainly needed to handle mitigation with well-organized disaster management. For this reason, government intervention is needed to integrate the stakeholders who will contribute. The concept of flood disaster management that is integrated with the role of government in it is expected to be a solution to overcome the problem of flooding that occurs in Jakarta this day, besides that, community participation is also very much needed.

Keyword : flood, disaster, mitigation, impact analysis, Urban Area
Topic : Engineering

Paper ID 67

APPLICATION OF DATA MINING IN DETERMINING PATTERNS OF INTEREST FOR HIGH SCHOOL GRADUATES

Dedy Hartama, Agus Perdana Windarto, Anjar Wanto
STIKOM Tunas Bangsa Pematangsiantar, Indonesia
Email : dedyhartama@amiktunasbangsa.ac.id (Dedy Hartama)

Abstract

Abstract. This study proposes the application of Data Mining in determining patterns of interest in high school graduates to register for AMIK Tunas Bangsa Pematangsiantar and the dominant factors that influence the interest of high school graduates. Data is taken from the application form filled in by those registered at AMIK Tunas Bangsa. In this study, the C 4.5 decision tree algorithm was applied to obtain data classification patterns, namely, school, status, school location, and year of graduation. The interesting pattern of these graduates shows that the best variable from predictors used is school status which provides performance accuracy of up to 81.71% for registration.

Keyword : Decision Tree, Patterns, Interests, High School Graduates, C4.5
Topic : Computer Science

Paper ID 68

SMART IOT FLOOD MONITORING SYSTEM

Shahirah Binti Zahir, Phaklen Ehkan, Thennarasan Sabapathy, Muzammil Jusoh, Mohd Nasrun Osman ,Mohd Najib Mohd Yasin,Yasmin Abdul Wahab, Mohd Fikri Che Husin, Mohd Khairul MD Kamil
Universiti Malaysia Perlis, Malaysia
Email : najibyasin83@gmail.com (Mohd Najib Mohd Yasin)

Abstract
Flood is one of the natural disasters that cannot be avoided. It happens too fast and affected so many lives and properties. Before this, most of the existing system that has been developed are only focus on certain areas. Other than that, majority of the public cannot monitor and have no idea when the flood going to be happened since they do not have any information and data about the weather condition. By having Smart IoT Flood Monitoring System, this will solve all the drawbacks of the existing system. The proposed system is suitable for cities and village areas. Furthermore, if the public has an internet access, they can monitor what is happening and predict if there is any upcoming flood at the web server. The proposed system is a low cost in design and easy for maintenance. This project will update the water level at the web server and the system will issue an alert signal to the citizens for evacuation so that fast necessary actions can be taken.

Keyword : Smart, Flood, IoT, Web Server
Topic : Engineering

Paper ID 69

AN IOT BASED SMART PARKING SYSTEM

Mehala Chandran, Nur Fadila Mahrom, Thennarasan Sabapathy, Muzammil Jusoh, Mohd Nasrun Osman,Mohd Najib Mohd Yasin, Yasmin Abdul Wahab, Ahmad Syahir Ahmad Bakhit
Universiti Malaysia Perlis, Malaysia
Email **:** najibyasin83@gmail.com (Mohd Najib Mohd Yasin)

Abstract
In the past, there have been many works done on smart parking system approaching an even smarter system in where researches have been done and still being done to create a system which is not technologically savvy but also at ease. This paper proposes a design of smart parking system where it helps the users to reserve parking slots using Android application. This project is aimed to create a system that helps people with personal vehicles to find for parking easily at selected areas. Both software and hardware platform have been developed in this system.

Keyword : IoT,Android Application; Smart Parking
Topic : Engineering

Paper ID 70

INFORMATION SYSTEM PROMOTION, MAP AND TOURISM LOCATION LOCATED IN THE DISTRICT SOLOK SELATAN USING ANDROID-BASED JAVA PROGRAMMING LANGUAGE

Hari Marfalino, Larissa Navia Rani, Mardison, Icshan Pribadi
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : hari.marfalino@upiyptk.ac.id (Hari Marfalino)

Abstract
The development of technology and information is felt very rapidly and this affects aspects of work that make work easier, one of which is the development of mobile technology, information media can now be made in the form of mobile applications, using mobile technology in the form of tourist applications, which provide information - information about tourism in the district of Solok Selatan, the search for tourism information in the district of Solok Selatan will be more practical to use and users can use this application wherever they are, this application can be used as a medium of knowledge about tourism in Solok Selatan district. This Solok Selatan tourist application is expected to be able to provide more knowledge about Solok Selatan tourism to the wider community, especially the people of Solok Selatan District.

Keyword : Android Based Tourism, Solok Selatan
Topic : Computer Science

Paper ID 71

THE EFFECT OF LEGO MINDSTORMS AS INNOVATIVE EDUCATIONAL TOOL: TO DEVELOP STUDENTS CREATIVITY SKILLS FOR CREATIVE SOCIETY

Mardhiah Masril, Billy Hendrik, Harry Theozard Fikri, Al Hamidy Hazidar, Bagus Priambodo, Emil Naf'an, Inge Handriani, Zico Pratama Putra, Asama Kudr Nseaf
Universitas Putra Indonesia "YPTK" Padang, Universiti Kebangsaan Malaysia, Universitas Mercu Buana, Queen Mary University of London
Email : mardhiah_m@upiyptk.ac.id (Mardhiah Masril)

Abstract
Creativity is a very important skill that should be possessed by the human resources of a country in the face of the 21st century. Human creativity must be stimulated from various things, including through the field of education to improve the quality of human resources. The goal of this study was to investigate the impact of Lego Mindstorms as learning tools to improved creativity skills of students using experimental methodology. We use a random sampling technique to select 40 students as the sample (N=40) with age ranging 10-12 years old, the sample was divided 2 groups, 20 students were control groups and 20 students were experimental groups. The student's creativity skills were taken from figural creativity test (TKF). This test has done before intervention (pretest) and after intervention program (posttest). In the intervention program, the experimental class students were given education about robotic technology with Lego Mindstorms tools. To analyze the test results were used

Statistical Product and Service Solutions. The finding showed that there were significant differences between the creativity scores of students in the experimental group and the creativity scores of the control group. The Lego Mindstorms influences the enhancement of student's creativity 23.6 % in experimental groups.

Keyword : Lego mindstorms, creativity skill, education, robotic technology, TKF.
Topic : Computer Science

Paper ID 73

SHALLOW WELL WATER SALINITY VIEWED FROM DISTANCE OF WELL TO COASTLINE AND GROUND WATER LEVEL ELEVATION IN PURUS PADANG VILLAGE

Maiyozzi Chairi, Widiawati Purba, Wendi Boy, Rafki Imani, Jihan Melasari
Universitas Putra Indonesia "YPTK" Padang, Indonesia
Email : maiyozzi@upiyptk.ac.id (Maiyozzi Chairi)

Abstract

The coastal environment is an area that always changes. It depends on the power balance between topography, rocks, and its nature with tidal and wind waves. Progress in the Purus sub-district resulted in an increase in the amount of groundwater demand. If this happens, it can cause a drawdown so that the well water of the residents feels brackish or feels salty. This study aims to determine the salinity of shallow well water when viewed from the distance of the well to the coastline (x1) and groundwater level (x2) in Purus Padang Village. This type of research is field research (field research), using a quantitative approach. The sample was taken as many as 18 wells in Purus. The results showed that the salinity of well water occurred unevenly in Purus Village. If the distance of the well is further away from the coast, the salinity value will be lower. If the depth (height) of the water table is getting farther away from the sea level, the salinity value will be higher. For consumption, the salinity content in Purus Village is still within normal limits (<250 mg / l). The spread of salinity is caused by the flow of surface water.

Keyword : Salinity, coastline, water, groundwater.
Topic : Engineering

Paper ID 74

DIAGNOSTIC EXPERT SYSTEM FOR CHILDREN DEVELOPMENT DISORDERS WITH THEMETHOD FORWARD CHAINING

Aggy Pramana Gusman, Halifia Hendri
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : apgusman@gmail.com (Aggy Pramana Gusman)

Abstract

Growth and development in children determine quality throughout their lives. The lack of understanding of parents about the importance of child development makes parents often ignore a situation or disease that occurs in their children. For this reason, an expert system is needed using the forward chaining method in reasoning to the knowledge base, which can

help parents to know the growth problems experienced by their children based on the symptoms found in children. In its development, the expert diagnostic system for child development disorders is implemented using PHP and MySQL programming as the database. After this expert system is implemented, the system can diagnose 5 disorders of child development (Autism, Asperger syndrome, attention deficit disorders and Hyperactivity, Down syndrome, and mental retardation) especially in children aged 6 - 12 years.

Keyword : Expert Systems, Child Development Growth Disorders, PHP and MySQL, Forward Chaining.
Topic : Computer Science

Paper ID 75

FACE AGING RECOGNITION IMPLICATIONS OF CHANGES IN FACIAL FEATURES: A CRITICAL REVIEW STUDY

Rasha Ragheb Atallah [1] , Amirrudin Kamsin [2] , Maizatul Akmar Ismail [2]
[1] University of Palestine, Palestine., [2] University of Malaya, Malaysia
Email : rasha.r.atallah@gmail.com **(**Rasha Ragheb Attaallah)

Abstract
The human face is a rich source of information for indicating individual characteristics such as identity, expression, age, gender, and ethnicity. This facial features are considered as one of the important personal characteristics. This can be used in many applications, such as face recognition and age estimation. The value of these applications depends in several areas, such as security applications, law enforcement applications, and attendance systems. In addition, facial features are particularly the key usage in the finding of lost child. Present applications have achieved a high level of accuracy. This paper provides a survey of face aging recognition, which was discussed. Moreover, the research outlines several challenges faced in face recognition area that had been explored. The research concluded that face techniques' performance is distinct from one data set to another. This paper contributes to display gaps for other researchers to join this line of research.

Keyword : Face Recognition Aging
Topic : Computer Science

Paper ID 76

THE UNDERSTANDING OF LECTURERS ABOUT THE NEW LITERACY IN INDUSTRIAL REVOLUTION ERA 4.0: A STUDY CASE OF UNIVERSITY OF PUTRA INDONESIA YPTK PADANG

Muharika Dewi, Yulia Retno Sari, Shally Amna, Rasmita, and Rina Susanti
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : yuliaretnosari2012@gmail.com (Yulia Retno Sari)

Abstract
The paper discusses how the understanding of lecturers at University of Putra Indonesia YPTK Padang is related to the new literacy in the Industrial revolution Era 4.0 which is big data literacy, technology literacy, and humanity literacy which have recently been a basis in developing learning in universities and which help to accommodate graduates to be able to

compete in the era of globalization.This research is done by qualitative approach, the sample is 35 university of Putra Indonesia lecturers in multi-disciplines. Triangulation is used to collect the data through interview, observation and documentation. Data are analyzed using the procedures proposed by Creswell. The finding explains that the lecturers' understanding of the new literacy in Industrial revolution era 4.0 are generally low; those are in understanding of big data taxonomy analysis, enough understanding and application of technology taxonomy analysis,and has applied humanity literacy only limited to train critical thinking, creativity, collaboration, and communicationyet inapplicable and less focus on enhancing competitive skills in the era of globalization.The research suggests the lecturers to do improvement independently and through campus support. They also need to be more applicable in implementing new literacy in the era of industrial revolution 4.0.

Keyword : New Literacy, Industrial Revolution 4.0, Big Data, Technology, Humanity, University Of Putra Indonesia YPTK Padang
Topic : Relevant Topics

Paper ID 77

AUTOMATIC SYSTEM TO FISH FEEDER AND WATER TURBIDITY DETECTOR USING ARDUINO MEGA

Halifia Hendri, Sofika Enggari, Mardison, Muhammad Reza Putra, Larissa Navia Rani
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : halifiah@gmail.com (*Halifia Hendri*)

Abstract
This tool system works automatically, which functions for feed the fish and detect the water turbidity. The fish that being feed and the water that being detected are in Aquarium or in Pond. Input for this tool are RTC (real time clock), Turbidity sensor and on/off button. To on or off the tool is used on/off button, to feed the fish automatically is used RTC component and to detect water turbidity is used turbidity sensor. Output for this tool are LCD (liquid crystal display) display, Buzzer, Servo Motor and LED (light emitting diode) component. To display information in writing format is used LCD display, to sounding information in sound format is used buzzer, to move water ways door and food ways door is used servo motor and to indicate the tool is activated and processing is used LED component. The main component to controlling all component and program in this tool is Arduino Mega 2560. To make tool program that will installed in Arduino Mega is used C programming language for Arduino. By using this tool, will make activity in feeding the fish and detect turbidity of water be more effective, more efficient and easier than manually.

Keyword : Automatic System, Fish Feeder, Water Turbidity, Arduino Mega
Topic : Computer Science

Paper ID 78

LEARNING SATISFACTION ANALYSIS OF ONLINE LEARNING READINESS WITH LEARNING CULTURE AND CHARACTER STRENGTH AS ANTECEDENT VARIABLES

Agung Ramadhanu, Ramdani Bayu Putra, Hadi Saputra, Rahmatul Husna Arsyah, Desi Permata Sari
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : agung_ramadhanu@upiyptk.ac.id (Agung Ramadhanu)

Abstract
The industrial era 4.0 that occurred has had a general impact on all human work activities, including the world of higher education. This study aims to disclose and analyze learning satisfaction with online learning readiness with learning culture and character strength as antecedent variables. Data collection was carried out by using an online questionnaire for all students of Putra Indonesia University who attended elearning lectures in the 2018-2019 academic year, with a total of 347 students. The findings of data analysis with structural equation modeling (SEM) models with SmartPLS tools show that learning culture, character strength and satisfaction of learning can explain their influence on online learning readiness. Furthermore, this study also concluded that job satisfaction is able to mediate the influence of learning culture and character strength on readiness for online learning. In addition, it was also found that the learning culture and character strength indicated were also able to explain the ups and downs of student satisfaction in learning.

Keyword : Organizational Culture, Character Strength, Learning Satisfaction, Readiness to study online
Topic : Relevant Topics

Paper ID 79

DESIGN OF EXPERT SYSTEM FOR DIAGNOSIS DAMAGE COMPUTER HARDWARE

Retno Devita, Eva Rianti, Sri Rahmawati
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : retno_devita@upiyptk.ac.id (Retno Devita)

Abstract
Expert systems are developed in line with the existence of information technology. The development of expert systems aims as a tool to provide solutions in lives. Expert systems can also help in making better solutions. With the rapid technological advancement at this time, raising an idea or idea to try to implement one of expert system application program into activity of service quality of computer technician by using method of Cased Based Reasing (CBR). This expert system application built can help technicians find solutions quickly and save time. Users and technicians simply enter the symptoms of damage that occurs in computer hardware. Through the built application helps in providing solutions to damage to computer hardware so as to facilitate the user or technician to get the solution quickly.

Keyword : Expert System, Case Based Reasing, Hardware, User
Topic : Computer Science

Paper ID 80

IMPACT OF LEARNING MOTIVATION, COGNITIVE AND SELF-EFFICACY IN IMPROVING THE QUALITY OF ONLINE LEARNING IN THE INDUSTRIAL AGE 4.0

Ramdani Bayu Putra, Elfiswandi, Muhammad Ridwan, Sitti Rizki Mulyani, Dharma Syahrullah Ekajaya, Rio Andhika Putra
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : ramdhani_bayu@upiyptk.ac.id (Ramdani Bayu Putra)

Abstract

The development of the industrial era 4.0 now, has changed the paradigm of activity on all fronts of human life. This study is intended to analyze the impact of learning motivation, cognitive and self-efficacy in improving the quality of online learning in the Industrial Age 4.0. The population of this study was the University of Indonesia Putra YPTK Padang who was following an elearning learning model with a total sample of 320 people. Where data collection is done through an online questionnaire. The results of data analysis with SmartPLS indicate that learning motivation, cognitive and efficacy are factors that can influence the quality of online learning. Besides that, it was also obtained the fact that self-efficacy was able to mediate the influence of learning and cognitive motivation on improving the quality of online learning.

Keyword : Learning Motivation, Cognitive, Self-efficacy, Quality of Online Learning
Topic : Relevant Topics

Paper ID 81

STANDARD OPERATIONAL PROCEDURE FUND DISTRIBUTION SYSTEM OF ZAKAT INFAQ AND SHODAQOH FOR ZAKAT FOUNDATIONS

Inge Handriani, Bagus Priambodo, Al Hamidy Hazidar, Mardhiah Masril, Zico Pratama Putra, Asama Kudr Nseaf, Emil Naf'an
Mercu Buana University, Indonesia, University Kebangsaan Malaysia Malaysia., Universitas Putra Indonesia YPTK Padang, Indonesia., and Queen Mary University of London, Malaysia., University Kebangsaan Malaysia, Universitas Putra Indonesia YPTK Padang, Indonesia
Email : inge.handriani@mercubuana.ac.id (Inge Handriani)

Abstract

The management of zakat, infaq and shodaqoh funds is a very crucial activity for each zakat institution, in which two processes are carried out, namely the receipt and distribution of zakat infaq and shodaqoh. This article is the result of further research on the zakat receipt system that was previously published. This fund distribution system is the responsibility of all receipts of funds received so it is very crucial even compared to the ZIS acceptance system itself. This is because there is accountability for the receipt of funds received by the institution and must be submitted to certain parties in accordance with the provisions of Islamic Sharia. Problems that often occur in the process of fund distributing zakat, infaq

shodaqoh is a entry data that accountability reports can not be made, the accountability report also can be made, besides that there is also an inaccurate target of the intended recipient distribution object. So that it is necessary to regulate how the right procedures in funds distributing of zakat infaq shodaqoh. The analytical method used by PIECES (Performances, Information, Economics, Control, Efficiency, Services). The standard operating procedure in the ZIS fund distribution system is made with internal control parameters (COSO).

Keyword : Fund Distribution System, ZIS, PIECES, COSO.
Topic : Computer Science

Paper ID 82

EXPERT SYSTEM AND RULE-BASED KNOWLEDGE BASED IN ANALYZING VITAMIN DEFICIENCY IN THE HUMAN BODY

Ruri Hartika Zain, S.Kom, M.Kom dan Elmi Rahmawati, S.Kom, M.Kom
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : rurihartika_zain@upiyptk.ac.id (Ruri Hartika Zain)

Abstract

Along with the development of information technology, which has made use of artificial intelligence technology including expert systems. Where the Expert System contains the knowledge and experience and expertise of a person entered by one or many experts into a particular knowledge area so that everyone can use it to solve specific problems, in this case it is a problem in analyzing vitamin deficiencies in the human body. Without vitamins, humans will not be able to carry out living activities and lack of vitamins can cause an increase in the chances of getting disease in our body. With the existence of an expert system, it will be able to analyze the symptoms of vitamin deficiencies in the human body so that they are dealt with effectively and efficiently.

Keyword : Expert System, Rule Based
Topic : Computer Science

Paper ID 83

ANALYSIS OF THE FACTORS AFFECTING THE QUALITY OF PALM OIL USING THE ANALYTICAL HIERARCHY PROCESS METHOD

Shary Armonitha Lusinia, Nugraha Rahmansyah, Rima Liana Gema
Universitas Putra Indonesia YPTK Padang, Padang
Email : rimalianagema@upiyptk.ac.id (Rima Liana Gema)

Abstract

Riau is a province that has many oil palm plantations. One of the industries that manage palm oil is PT. Tasma Puja which produces crude oil from vegetable origin. To calculate the quality of palm oil at PT. Tasma Puja has carried out laboratory tests based on water content, impurities, free fatty acid content, color and peroxide number. The process of storing free fatty acid data produced in each production derived from laboratory test results is still stored manually using the Microsoft Excel application. By storing this data, there are weaknesses, namely the difficulty in assessing the quality of palm oil production produced. This research was conducted to analyze the storage of production data from PT. Tasma Puja. The results of this study are expected to provide benefits to PT. Tasma Puja in storing and processing data

from palm oil production results becomes more effective. Analysis of these problems uses the concept of decision support systems Analytical Hierarchy Process method which is supported by PHP programming applications.

Keyword : Palm Oil, Decision Support Systems, Analytical Hierarchy Process
Topic : Computer Science

Paper ID 84

FUZZY LOGIC APPLICATIONS TO PREDICT TOTAL PRODUCTION PKO (PALM KERNEL OIL) IN PT AAI PASAMAN METHOD USING WEB BASED TSUKAMOTO

Devia Kartika, Mutiana Pratiwi, Rima Liana Gema
Universitas Putra Indonesia YPTK Padang, Indonesia
Email : Devia.kartika11@gmail.com (Devia Kartika)

Abstract
The purpose of this study is to apply fuzzy logic to predict the amount of Palm Kernel Oil (PKO) production at PT. Web-based AAI. This study uses the Tsukamoto method to anticipate the instability of palm oil production based on existing demand and supply. The results showed that with the implementation of the fuzzy logic tsukamoto method can affect the rate of more stable production and to reduce the production of which is not in accordance with market demand. The conclusion of this study is to result in the predicted number of production PKO (Palm Kernel Oil) At PT AAI in order to know the budget supply and demand thereafter.

Keyword : Fuzzy logic, Tsukamoto, Kernel Oil
Topic : Computer Science

Paper ID 86

A COMPACT MIMO PLANAR INVERTED-F ANTENNA

Najwa, Mohamed Nasrun Osman, Muzammil Jusoh, Thennarasan Sabapathy, Samir Al-Bawri, M.M.Azizan and Tarmizi Ali
Universiti Malaysia Perlis, Malaysia
Email : mohamed.nasrun@gmail.com (Mohamed Nasrun Osman)

Abstract
In this work, a compact MIMO antenna is designed as a planar inverted F-antenna (PIFA) which can be used for smallest smartphones. The proposed antenna will cover the GSM frequency range of 900MHz and 1800MHz. Those dual bands are attained with high gain up to 4.7 dB. Simulation and experimental results have been presented.

Keyword : PIFA Antenna, Compact Antenna, Smartphone.
Topic : Engineering

Paper ID 87

TRANSPARENT ENCRYPTION TECHNIQUE FOR TRUSTED COMPUTING

Gushelmi, Abdullah Mohd Zin
Universitas Putra Indonesia YPTK, Universiti Kebangsaan Malaysia, Malaysia
Email : gushelmi@upiyptk.ac.id (Gushelmi)

Abstract
Trusted computing is a technology that has been developed to make computer safer and more trustworthy. The main purpose of trusted computing is to ensure that only authorized user will be able to use and access information stored inside the computer. Although the current trusted computing technology is capable of providing the level of trustworthiness required, it is still subjected to physical attack. A research has been carried out to protect trusted computers from physical attack. However, in order to provide a better protection, it is important that data inside the computer to be encrypted whenever it is not used and decrypted whevener it needs to be used. A number of encryption techniques are available such as RSA, AES, DES / 3DES, Twofish, Blowfish, IDEA, SEAL, RC4. However, time taken for encrypting and decrypting data by using these techniques is huge. This paper describes a research work that are currently undertaken in order to develop a new encryption mechanism that can provide a very fast and transparent encryption and decryption services for trusted computers.

Keyword : encryption, transparent, trusted computing
Topic : Computer Science

Paper ID 88

IMPROVING THE MODELLING OF ROBOT BUNKER WITH CAMERA

Emil Naf`an, Riza Sulaiman, Nazlena Mohamad Ali, Bagus Priambodo, Al Hamidy Hazidar, Asama Kudr Nseaf, Zico Pratama Putra, Harry Theozard Fikri, Inge Handriani
Universitas Putra Indonesia YPTK Padang Universiti Kebangsaan Malaysia Universitas Mercu Buana Queen Mary University of London
Email : emilnafan@upiyptk.ac.id (Emil Naf`an)

Abstract
This study proposed an improvement on the model of robot bunker with camera. The system is designed so that robot bunker is difficult to enter by thieves. The previous model is equipped with a security system. However, the system is not equipped with a camera so that when theft occurs, the action cannot be recorded. In the previous model, the Sugeno method reasoning is used with 8 rules. This study used 16 rules, because of the addition of variable pixels produced by the camera. Simulation with Matlab Fuzzy Toolbox is done on 30 (thirty) possible conditions of action taken by people against the robot. In the simulation results, the test results can change from safe conditions to alert or dangerous conditions. This is caused by changes in the number of pixels. The pixel value increases when someone tries to take a robot from the robot bunker. Thus the proposed model is more sensitive in detecting changes

that occur around the robot bunker. Therefore the robot bunker model is able to be applied in securing / protecting robots from thieves.

Keyword : Robot, Bunker, Security, Embedded System, Sensors, Camera, Fuzzy Logic.
Topic : Computer Science

Paper ID 89

UNIVERSITY STUDENT SATISFACTION ANALYSIS ON ACADEMIC SERVICES BY USING DECISION TREE C4.5 ALGORITHM (CASE STUDY: UNIVERSITAS PUTRA INDONESIA "YPTK" PADANG)

Febri Aldi, Anita Ade Rahma
Universitas Putra Indonesia "YPTK" Padang, Indonesia
Email : anita_aderahma@upiyptk.ac.id (Anita Ade Rahma)

Abstract
Satisfaction is a dynamic process which can affect many things. Satisfaction can be achieved from many aspects. In higher education, student as main customer and consumer of the university which has big role in growth of the university needs to be satisfied. Student satisfaction will have an impact to the sustainibility of the university. Where satisfaction generally gotten from the services given by the university. This research focus on academic services by the university. Attributes of service quality such as tangibles, reliability, responsiveness, assurance, empathy and information system (as a new additional attribute which is rarely analyzed) are used to measure student satisfaction level. Data has been collected by distributing questionnaires to 100 UPI YPTK Padang students and then processed with decision tree c4.5 algorithm. The result revealed 82 students were satisfied and the remaining 18 students were dissatisfied. Furthermore, 95% accuracy algorithm is obtained and categorized as very good classification.

Keyword : Decision Tree, C4.5 algorithm, student satisfaction, academic services
Topic : Computer Science

Paper ID 90

ANALYSIS SYSTEM OF OCCUPATIONAL HEALTH AND SAFETY IN COAL UNDERGROUND MINING

Heri Prabowo, Ilep Prengki and Ali Amran
Universitas Negeri Padang, Indpnesia
Email : ilepprengki@gmail.com (Heri Prabowo)

Abstract
Based on the data obtained from the company, the data of occupational accidents that occurred between the years 2016-2017 there were 10 cases of accidents. The causes of such employees ignore APD, buffering systems which do not conform to the rules, and a ventilation system that is still not good . The purpose of this study were: 1) Uncover Management System Occupational Health and Safety are available on the company today. 2) Uncover buffering system underground mining CV. Karya Maju Sejati 3) Uncover the

ventilation system underground miningCV. Karya Maju Sejati 4). Revealing how the protection of electrical equipment in underground mines. 5) Find a solution should be done to reduce the risk of accidents at work in the company and measures of prevention / mitigation of hazards in the workplace . Data collected or obtained directly from respondents by direct observation in the field and interviews with management and staff as well as competent employees of the company and nothing to do with the object of research. The data taken is the danger in the workplace environment, work program K3 management , implementation and support of ventilation systems and protection of electrical equipment in underground mines .

Keyword : K3, APD, Ventilation and Buffering
Topic : Engineering

Paper ID 91

OLAP APPROACH IN SEARCHING MANUFACTURING INDUSTRIES IN WEST SUMATERA

Eka Praja Wiyata Mandala, Dewi Eka Putri, Dede Wira Trise Putra, Dio Prima Mulya
Universitas Putra Indonesia YPTK Padang, Universitas Putra Indonesia YPTK Padang,Indonesia.,
Institut Teknologi Padang, Indonesia., Universitas Dharma Andalas,Indonesia.
Email : ekaprajawm@upiyptk.ac.id (*Eka Praja Wiyata Mandala)*

Abstract
The manufacturing industry is a business that uses machines, tools and workers in the process of converting raw materials into finished goods that can be sold. The manufacturing industry has an important role in the Indonesian economy. The industry contributed a large income to the country. In West Sumatra, there are many manufacturing industries that are growing and developing both on a medium scale and large scale which are spread throughout the cities and districts. So that it makes it difficult for the Department of Industry of West Sumatra Province to collect data on the existence of manufacturing industries. To solve this problem, approach of Online Analitycal Processing (OLAP) is used to search data in a hierarchical manner. OLAP is designed using fact tables and several dimension tables. OLAP will provide the number of industries as a measure . This research can help the people of West Sumatra to find out about the local manufacturing industry and what products the industry produces. In the end, local industrial products will be favored by many local people and increase the income of the province of West Sumatra

Keyword : Hierarchy Search, Manufacturing Industry, OLAP Approach
Topic : Computer Science

Paper ID 92

SENTIMENT ANALYSIS AND OPINION MINING ON TAX

Nurul Misyani Binti Mohd Rafie, Kasturi Dewi Varathan, Mohammad Shafenoor Amin
University of Malaya, Malaysia ., BRAC University, Bangladesh
Email : kasturi@um.edu.my (Kasturi Dewi Varathan)

Abstract

Twitter is one of the most used platform for communication by people around the world. Sentiment analysis and opinion mining on Twitter has become an important field of research that sees beyond the number of likes, shares, and comments that users have for some topics. Nowadays, business organizations are not aware of the emotional aspect of their customers and may take longer time in analyzing the market sentiment in making the necessary business decision. A prototype is created in order to extract Tax based tweets from Twitter as well as it helps in analyzing the tweets accordingly. It also enables trend analysis and sentiment analysis to be made. These analysis will help the business organization in order to understand customers' sentiment and provide according to their needs. The analyzed tweets will be used in helping the business organization to make the right decisions in the recommendation for sales and stocks. Thus, this prototype is expected to increase the revenue of the businesses.

Keyword : Opinion Mining, Sentiment Analysis, Tax
Topic   : Computer Science

Paper ID 93

MODEL OF ARTIFICIAL NEURAL NETWORKS IN PREDICTIONS OF CORN PRODUCTIVITY IN AN EFFORT TO OVERCOME IMPORTS IN INDONESIA

Anjar Wanto[1], Dedy Hartama[1], Gita Widi Bhawika[2], Deswidya Sukrisna Hutauruk[3], Pinondang Hotria Siregar[3], Ricard Fredrik Marpaung[3], Salim Efendi[3], Rusmin Saragih[4], Imeldawaty Gultom[4], Agus Perdana Windarto[1]
[1] STIKOM Tunas Bangsa, Pematangsiantar, Sumatera Utara, Indonesia., [2]Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia., [3]Universitas Efarina, Sumatera Utara, Indonesia., [4]STMIK Kaputama Binjai, Sumatera Utara, Indonesia
Email : anjarwanto@amiktunasbangsa.ac.id (Anjar Wanto)

Abstract

Corn is a staple food that is still widely consumed by the population of Indonesia. Based on data from the Indonesian Statistics Agency, corn productivity in Indonesia from 2005 to 2015 experienced an unstable curve. Therefore this research is conducted to predict and see how much the level of development of corn productivity in Indonesia for the following years, so that the government has a reference to continuously strive to increase corn productivity in Indonesia to remain stable in order to meet the needs of Indonesian people and minimize the import of corn. This study uses data on corn productivity in Indonesia in 2005-2015 sourced from the Indonesian Central Bureau of Statistics. The prediction algorithm used is Backpropagation Neural Network. This algorithm is able to predict data well, especially data that is sustainable for a certain period of time. Based on this algorithm a training and testing process will also be carried out using 5 network architecture models, namely 5-25-1, 5-43-1,

5-76-1, 5-78-1 and 7-128-1. Of the 5 architectural models the best is 5-25-1 with an accuracy percentage of 88% and MSE value of 0,00992433

Keyword : Neural Network, Predictions, Corn Productivity, Backpropagation, Indonesia
Topic : Computer Science

Paper ID 94

RADIATION PATTERN RECONFIGURABLE FM ANTENNA

Barath, Thennarasan Sabapathy, Muzammil Jusoh, Samir Al-Bawri, M.N. Yaasin, Mohamed Nasrun Osman, Hasliza Abd Rahim
Universiti Malaysia Perlis, Malaysia
Email : muzammil@unimap.edu.my (Muzammil Jusoh)

Abstract

In this work, a radiation pattern reconfigurable antenna design using compact printed spiral monopoles that operates at 100 MHz is reported. The proposed antenna changes its radiation behavior that responds towards a desired direction with the use of RF switches. The antenna is printed on a 76.6mm × 50mm PCB layer providing more than 20MHz bandwidth at -10 dB threshold and is easily fabricated with low manufacturing cost. The antenna was also simulated on 500mm × 500mm ground plane that represents the roof top of a vehicle.

Keyword : Reconfigurable Antenna, Beam Switching, PIN Diode
Topic : Engineering

Paper ID 95

ANALYSIS OF ELECTRONICALLY RECONFIGURABLE BEAM STEERING ANTENNA ARRAY USING PHASE SHIFTER TECHNIQUE

Soh Jen Neei, Muzammil Jusoh, Thennarasan Sabapathy, Samir Salem Al-Bawri, M.N. Yaasin, Tariq Abd Latef, Mahmud A. M. Albreem
Universiti Malaysia Perlis,Malaysia., Universiti of Malaya, Malaysia., Asharqiyah University Ibra Oman
Email : muzammiljusoh11@gmail.com (*Muzammil Jusoh*)

Abstract

The effect of PIN diodes position on reconfigurable ring antenna performance is investigated and studied in this work. The proposed antenna consists of two ring radiator patches, facilitating 1.25% bandwidth centered at 5.85 GHz. Simulation and measurement result is presented successfully to demonstrate the integration effect of PIN diodes with antenna to steer the antenna beam toward the desired direction. Besides being low profile, an average gains up to 8 dBi is achieved at all reconfiguration scenarios.

Keyword : Pattern switching, Beam switching, PIN Diode
Topic : Engineering

Paper ID 96

EXPERT SYSTEM DELAYED WALKING IN THE TODDLER

Yogi Wiyandra, Firna Yenila, Hezy Kurnia, Suci Wahyuni, Ratih Purwasih
Universitas Putra Indonesia "YPTK" Padang, Indonesia
Email : yogiwiyandra@gmail.com (Yogi Wiyandra)

Abstract

Delayed walking are often experienced by toddlers aged 9-18 months, many of the parents do not understand the reason for the delayed walking on their toddler. And sometimes the habit seems to be left by them. In fact, it can cause paralysis in children. There are several factors that cause delays in walking, including motor, genetic and temperament factors, usually in cases like this, parents communicate directly with a child specialist or even a neurologist to know the child's motor condition, but because of limitations to consult with reasons for each other's activities then it seems left unchecked. So, expert system was built with the reason of providing knowledge in the form of information about delayed walking for toddlers while providing a solution in the form of new knowledge about the delay in walking. It is created by bringing knowledge to experts such as pediatricians and neurologists. This system is created by using the forward chaining method in the form of reading direct conditions according to the condition of the toddler at that time.

Keyword : Expert System, Forward Chaining, Delayed Walking, Toddler
Topic : Computer Science

Paper ID 97

EXPERT SYSTEM OF INTRAUTERINE INSEMINATION

Firna Yenila, Yogi Wiyandra
Universitas Putra Indonesia "YPTK" Padang, Indonesia
Email : firnayenila14@gmail.com (**Firna Yenila**)

Abstract

Intrauterine insemination is a method used as a program by injecting sperm directly into the cervix so fertilization can occur. According to world health, the success rate of this program ranges from 20-30%, allowing several couples to choose this alternative. The process of applying artificial insemination requires the right pregnancy results, which require proper identification. System identification technology can be done quickly to assist in the identification of fertility that must be performed by an obstetrician. System development in this research is an expert system to determine the success of insemination programs for pregnancy. This system makes it easier for couples to consult and provide information to couples about insemination activities based on their partner's condition. This expert system is made with a Hybrid method, where reading data from this method is done by forward chaining and certainty factors. The forward chaining method aims to read the cycle of couples who will carry out insemination and certainty factors, namely the method used to determine the level of success in the pregnancy program that will be obtained by the couple

Keyword : Expert System, Insemination, Hybrid
Topic : Computer Science

Paper ID 98

EXPERT SYSTEM FOR DISEASE DIAGNOSIS IN COCOA PLANT USING ANDROID-BASED FORWARD CHAINING METHOD

Vicky Ariandi, Hezy Kurnia, Heriyanto, Hilda Mary
Universitas Putra Indonesia "YPTK" Padang, Indonesia
Email : vicky_ariandi@upiyptk.ac.id (Vicky Ariandi)

Abstract

Cocoa is one of the plantation crops that has high economic value besides it can also provide a large contribution so that it can increase the source of foreign exchange in Indonesia. This expert system is made for Android device users. In 2010 Indonesia succeeded in occupying the number three position after Ghana and Ivory Coast as the largest cocoa producer in the world. However, the number of cocoa production in West Sumatra has decreased due to a lack of knowledge of farmers in caring for and cultivating them. That is the background of this research, where this expert system uses the Forward Chaining method as a symptom search method that has been included as a tracking algorithm for each rule that has been set. So that it can produce an expert system for diagnosing cocoa plants that are right for farmers. When conducting a consultation, the user can answer Yes or No from the question given by the system. User answers are then processed based on rules and calculated using the forward chainig method. Testing is done to see if the system can run well as expected.

Keyword : Forward Chaining, Expert System, Cocoa, Android studio
Topic : Computer Science

Paper ID 99

SMART IRRIGATION SYSTEM BASED ON INTERNET OF THINGS (IoT)

Nurulisma Ismail, Sheegillshah Rajendran, Wong Chee Tak, Tham Ker Xin, Nur Shazatushima Shahril Anuar, Fadhil Aiman Zakaria, Yahya Mohammed Salleh Al Quhaif, Hussein Amer M. Hasan Karakhan, and Hasliza A. Rahim
School of Computer and Communication Engineering (SCCE), Universiti Malaysia Perlis (UniMAP), Malaysia
Email : nurul@unimap.edu.my (Nurulisma Ismail)

Abstract

Nowadays, the Internet of Things (IoT) technology is very much used in agriculture. Therefore, this paper is about a project that focuses in the field of agriculture with the objectives of controlling the water consumption in agriculture field which is based on IoT where all information is viewed and controlled in fingertips. As a part of the system development, few sensors applied such as: (i) a soil moisture sensor (YL-69) to detect the water level in soil; (ii) the humidity and temperature sensor (DHT-11) to trace early signs of temperature changes; and (iii) the pressure sensor (BMP 280) to measure the pressure of the surrounding. These sensors are connected to a Wi-Fi module (Node MCU) and they are interdependent to give extra sensitivity to the irrigation system. The data collected will be uploaded to the cloud (Thingspeak.com and Firebase) and displayed in the form of graphs that could be seen through the app and website. The app functions to display the reading from the sensors and to control the water pump for emergencies purposes. In conclusion, the

project managed to fulfill all its objectives in the aspects of water consumption, minimal project cost, less labour, power consumption, and reliability.

Keyword : Internet of Things, smart irrigation system, agriculture
Topic : Computer Science

Internet of Things in Monitoring and Notification of Industrial Security Systems

View the article online for updates and enhancements.

Internet of Things in Monitoring and Notification of Industrial Security Systems

Alkhairunas Riyuska*, Julius Santony and Sumijan

Universitas Putra Indonesia "YPTK" Padang, Padang, Indonesia

*alkhairunas@riyuska.com

Abstract. One of the factors that influence the course of industry is the security factor, which is represented by security devices and security guards on the internal security system. Information technology changes the security system to be more complicated. The purpose of this study is to monitor and protect security systems using information technology. The method used in this study is the Monte Carlo Algorithm. This research provides a solution to the problem of mathematical data and decisions. The results of this study are automated testing in real-time communication, both on mobile devices and websites. The accuracy of the first data test was 98% and the second data test was 98%. This research is very appropriate to be applied in the application of industrial security systems.

1. Introduction

Technological developments in the industrial world have reached the 4th generation or the so-called Industry 4.0 starting from the first generation occurred at the end of the 18th century. In the Industrial Age 4.0 this emphasizes the digitalization of information technology [1]. One important factor that influences the course of industry is the security system that is a mandatory requirement, always a priority that needs attention. Includes external and internal security represented by the security device and security guard [2].

Current information technology in security systems is made more complex, developing and more modern [3]. the main characteristic of progress is the interaction between machines and machines that combine automation technology [4]. Industry 4.0 is an industrial era where technologies such as artificial intelligence, automation, and the internet affect each other's lives [5]. all entities within an industry can communicate in real time based on the use of internet technology. Technically integrated from Cyber Physical System (CPS) and Internet of Things (IoT) into the industry [6]. CPS itself is a technology to combine the real world with cyberspace and the Internet of Things (IoT) is a technology where objects around us are connected to the internet and some devices can transmit data via the internet [7].

Internet of Things (IoT) is a concept where several devices can send their data over the internet without human assistance [8]. At the moment it is becoming a new technology that is developing in Indonesia, and various types of industries in the world are now beginning to utilize this technology. The concept of internet of things (IoT) includes 3 main elements, namely: physical or real objects that have been integrated in the sensor module, internet connection, and data center on the server to store data or information from the application [9]. Internet of things (IoT) that can do a data / information transmission through a network with machine communication with a machine without human intervention known as the Smart System [10].

The main problem is that it is not usually possible for the system to know what threats will occur in the future in industrial security systems, in anticipation of adding a prediction method that is using the Montecarlo algorithm. This method proved to be efficient in solving differential equations, field radians integrals, and was generally carried out using computers and using computer simulation techniques [11]. Monte Carlo Algorithm is a special approach computational algorithm that is very useful for simulating various behaviors in physics and mathematical systems [12]. Monte Carlo algorithms are often used to analyze decisions in situations that involve the risk of several parameters to be considered.

2. Method

The industrial security system uses internet Foo Things (IoT) technology as monitoring data and information notification data, designed using several sensors. Monitoring data is obtained from inputting DHT11 sensors, while Notification data is obtained from inputting MQ-2 Sensors, PIR Sensors and Flame Sensors. Some sensors can send information as monitoring data, and notification data, obtained from ESP8266 processing, can be seen in Figure 1.
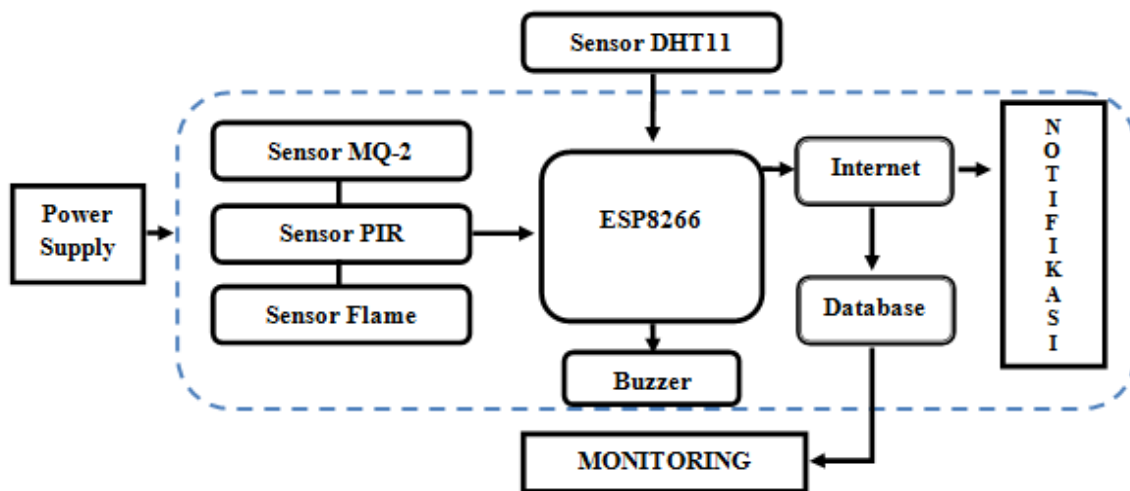

Figure 1. System Scenario Diagram

The PIR sensor and Flame Sensor when detecting an object are worth 1 or High, and the MQ-2 Sensor when detecting smoke indicates an air change exceeds the threshold level, then ESP8266 will process and send Notification information to the smartphone. Sensor DHT11 input data into the MySQL database as a data medium that will be accessed through the website and mobile application as monitoring data.

2.1 Detection and Monitoring

Temperature input data and humidity input data come from outside the system, which comes from a series of devices sent and processed using ESP8266 using Internet of things (IoT) technology by means of the get_data method which will be stored in the MySQL database.

2.2 Monte Carlo Algorithm

The data used is the past data or previous data from the average sensor data stored in the database. Testing is done to predict in the next 1 hour. Moisture data is used because, air humidity has the potential to be the main cause of easy fire when it is in the condition of 30 percent which means that the water content in the air is very dry [13] [14]. In this test using 1 hour recapitulation data is divided into 6 parts so that 1 data is an average of data per 10 minutes.

2.3 Determining Probability

The probability value is obtained from the number of moisture calculation values, namely by means of the average value of the humidity listed divided by the total number, where:

$$\text{Probability} = \left[\frac{average\_humidity}{Total} \right] \qquad (1)$$

2.4 Determine Cumulative Probability

To determine the calculation value of cumulative probability distribution by inputting the initial data based on data on probability. Then in the second step add the previously inputted data with the second probability data. The next step is done in the same way so that in the last data there is a cumulative probability value of 1.00.

2.5 Determining Random Numbers

To determine the random value using the Linear Conruential Method (LCM) method by generating random numbers using the equation:

$$Z_n = (a.Z_i + c) \; mod \; m. \qquad (2)$$

For the last step is to make predictive simulations of a series of experiments using random numbers by taking predetermined random numbers (Generating random numbers) based on the interval and the average humidity previously processed and calculate the probability distribution and cumulative distribution.

3. Result

The data sent to the MySQL database is then displayed on the website as a system Monitoring the sensor data display. In the graph image the temperature data obtained from the DHT11 sensor is shown in blue linechart color, while the red linechart is the data obtained from the moisture data. Sensor data is sent directly in real time and stored in the database.

Sensor data stored in the database is obtained per 1 hour period to be calculated data. Predicted data using 1 hour recapitulation data is divided into 6 parts so that 1 data has an average of data per 10 minutes, seen in Table 1.

Table 1. Table of Average Humidity

Minutes to	Average data on humidity		
	Data 1	Data 2	Data 3
1 s/d 10	70	70	71
11 s/d 20	70	70	71
21 s/d 30	70	71	72
31 s/d 40	69	71	72
41 s/d 50	69	71	72
51 s/d 60	68	70	72
Total	416	423	430

The lower the air humidity, the air will dry the amount of water in the air decreases too. in this study will make predictions on the humidity for the next 1 hour. To do a prediction simulation the first is done to determine the probability value.

To determine the interval value starting from the first probability value and the smallest value, ie 00 to 17 until the final value reaches 100 the calculation results are shown in Table 2.

Table 2. Interval Data Tables

Minutes to	Average Humidity	Probability	Probability Cumulative	Interval		
1 s/d 10	70	0.17	0.17	0	s/d	17
11 s/d 20	70	0.17	0.34	18	s/d	34
21 s/d 30	70	0.17	0.51	35	s/d	51
31 s/d 40	69	0.17	0.67	52	s/d	67
41 s/d 50	69	0.17	0.84	68	s/d	84
51 s/d 60	68	0.16	1.00	85	s/d	100
Total	416					

A random value is a number that cannot be predicted. To determine this random value using the *Linear Constructive Method* (LCM) method by generating random values. Based on the calculations that have been described using the *Linear Conventional Method* (LCM) method shown in Table 3

Table 3. Random Figures Table

i	Z_i	$(a.Z_i + c)$	$Z_i + 1 = (a.Z_i + c) \bmod m$	Interval
0	56	983	63	63
1	63	1102	90	90
2	90	1561	89	89
3	89	1544	72	72
4	72	1255	59	59
5	59	1034	22	22

Random numbers that will be used in the calculation of the experimental circuit simulation are 63, 90, 89, 72, 59 and 22.

3.1. Making Prediction Simulation
Predictive simulation of a series of experiments using Generating random numbers based on the Interval and the average humidity previously processed and calculating the probability distribution and cumulative distribution. seen in table 4

Table 4. Data Prediction Table 2

No	Data 1	Random Number	Prediction	Data 2	Accuraci %
1	70	63	**69**	70	99
2	70	90	68	70	97
3	70	89	68	71	96
4	69	72	69	71	97
5	69	59	69	71	97
6	68	22	70	70	100

In the calculation results there are two data that become comparisons. the first is in data 1, that is, the data sought to determine the predictive value of the next data, then data 2 is the real data that occurs. Predictive data obtained compared to the real that is in data 2 to see what percentage of data prediction calculations will occur.

3.2. Simulation of the Website Application
The final results display displays probabilities and cumulative probabilities and interval data as an assessment based on random values used as prediction data shown in Figure 3.
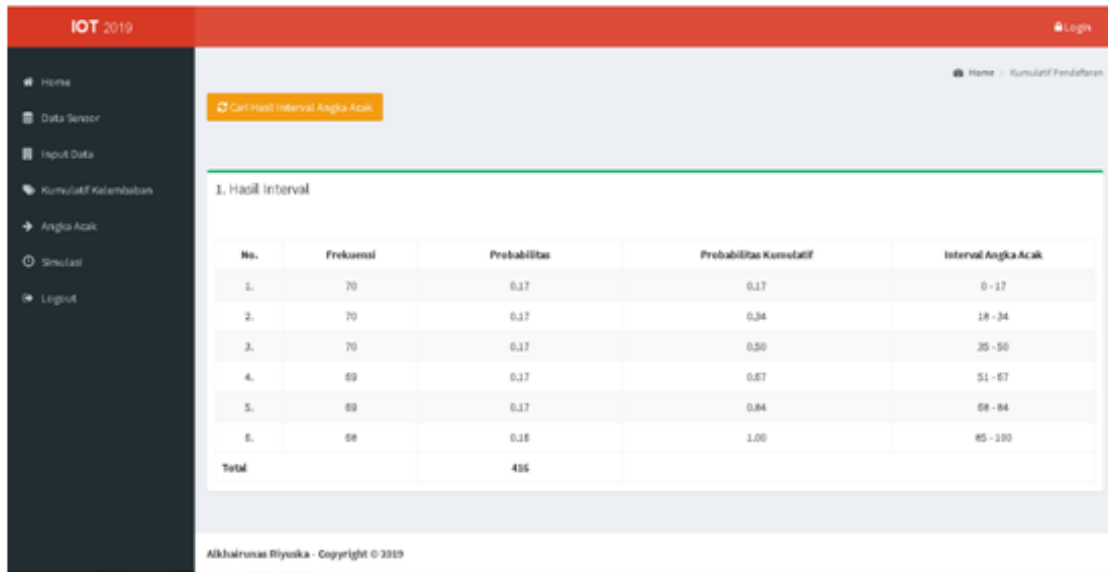
Figure 2. Website Interval Display

Generating random numbers consists of a, Zo, c, and m. It is known that a = 17, c = 31, Zo = 56 and m = 92 and displays the number of generating numbers 6 times the number of generators.

In the simulation view, displaying predictive data and accuracy based on comparisons of real data. In this view, determine the simulation value based on the random value between the interval ranges. The percentage comparison based on the value of the simulation data is divided by the real data value. shown in figure 4.
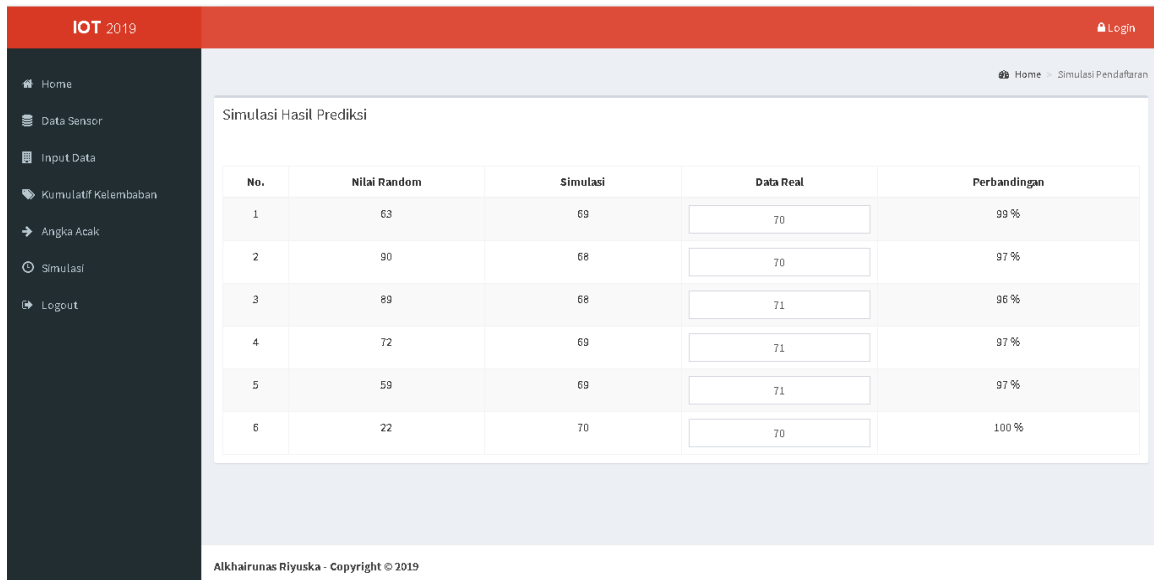

Figure 3. Display of Website Simulation

Notification Sensor sends information data when the MQ-2 sensor detects a change in air content from smoke. When the sensor detects smoke, the device system immediately detects and provides information in the form of notifications.
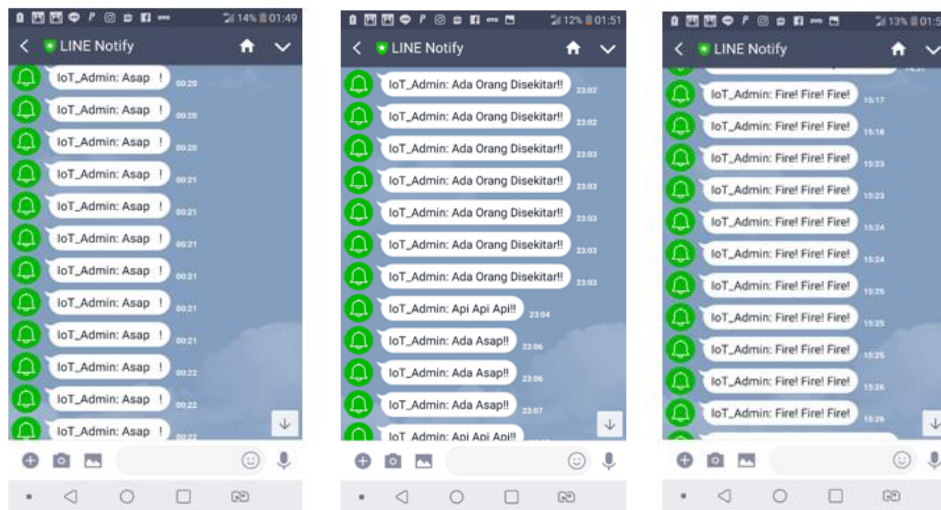
Figure 4. Security System Notifications

When the PIR sensor detects a movement disturbance that is detected it is indicated by the notification information data sent to the line application. Flame sensor works to provide notification information when the sensor detects the presence of fire in the room and how the Flame or Fire Sensor sensors work which will be processed and send warning notifications to the Line application.

4. Conclusion

Monitoring and notification of industrial security systems using Monte Carlo Algorithms can provide predictions of moisture data that will occur in the next 1 hour with the accuracy of testing the first data by 98% and testing the second data by 98%. Internet of Things (IoT) technology can provide Notification information via smartphone on the Line application.

References

[1]   Gaspar P 2018 *International Federation for Information Processing* (Budapest: Hungary)
[2]   Parathibha, et al 2017   *International Conference on Recent Advances in Electronics and Communication Technology* ICRAECT.2017.52
[3]   Jozwiak L, 2015 *Embedded Computing Technology for Highly-demanding Cyber-physical Systems*, mbedded Computing Technology 019-030
[4]   Perea AC, Romerp F 2017 *ScienceDirect* j.promfg.2017.09.032
[5]   Dopico M, et al 2016 ICAI The steering committee of the world congress in computer science, computer engineering and applied computing (WorldComp)
[6]   Baker S, et al 2017 *Atkinson is with the eResearch Centre at James Cook University* 2169-3536
[7]   Dimitrov D 2016 *Healthc Inform Res* (Bulgaria) 156-163.
[8]   Gyrard A, Bonnet C, Boudaoud K, Serrano M 2015 *International Conference on Data Science and Data Intensive Systems* I3S-CNRS/UNSA
[9]   Moniza G P, et al 2018 *International Federation for Information Processing* AICT 540, pp. 227–237
[10]   Jacobsson A, Boldt M and Carlsson B 2016 *Future Generation Computer Systems* 719–733
[11]   Liu J, Qi Y, Meng Z Y, Fu L 2017 PHYSICAL REVIEW B 95, 041101(R)
[12]   Landau D and Binder K, 2014 A Guide to Monte Carlo Simulations in Statistical Physics
[13]   Pinilla J, et al 2016 *Effects of relative humidity on the water repellency of fire-affected soils* Catena 138 (2016) 68–76
[14]   Marco C, Daniele A, Roberto L 2016 *Monitoring Of CasaNova Low Energy District: Result And Discussion*, Energy Procedia 96 (2016) 895 – 906

UNIVERSITY
OF MALAYA

CERTIFICATE

AWARDED TO

JULIUS SANTONY

PRESENTER

In International Conference
On Computer Science And Engineering
"Strategies to Face of Industrial Revolution 4.0"
April 26-27th 2019

At
UPI Convention Center
Universitas Putra Indonesia "YPTK" Padang
West Sumatera, Indonesia

Rector
Universitas Putra Indonesia "YPTK" Padang

General Chair

Prof. Dr. H. Sarjon Defit, S.Kom., M.Sc

Billy Hendrik, S.Kom., M.Kom