



**KONSORSIUM
BIDANG KOMPUTER
LLDIKTI WILAYAH III**



SNIKSI 2021

SEMINAR NASIONAL
ILMU KOMPUTER &
SISTEM INFORMASI



28 OCTOBER 2021

PROGRAM BOOK

BINUS UNIVERSITY

Jl. K. H. Syahdan No. 9, Kemanggisan, Palmerah
Jakarta 11480 Indonesia

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Seminar Nasional Ilmu Komputer & Sistem Informasi SNIKSI 2021

Preface

Puji dan syukur kepada Tuhan YME, karena kita dapat mengadakan Seminar Nasional Ilmu Komputer dan Sistem Informasi (SNIKSI) 2021 yang pertama. SNIKSI 2021 adalah wadah ilmiah bagi mahasiswa, dosen, peneliti dan ilmuwan untuk menyebarkan ilmu dan penelitiannya di bidang Ilmu Komputer, Sistem Informasi, Teknik Komputer dan Teknologi Informasi. SNIKSI 2021 bertujuan untuk mendorong mahasiswa sarjana, mahasiswa pascasarjana, dosen, peneliti, insinyur dan ilmuwan dari seluruh dunia untuk berbagi dan mempublikasikan gagasan dan penelitian mereka di bidang ilmu komputer, kecerdasan komputer dan teknologi informasi. Kegiatan ini merupakan salah satu media untuk mengembangkan jejaring dan pengalaman para peneliti, insinyur dan ilmuwan, serta penyajian poster hasil penelitian dari mahasiswa dan dosen.

SNIKSI 2021 ini terlaksana berkat Konsorsium Bidang Ilmu Komputer di bawah naungan LLDIKTI Wilayah 3 yang terdiri dari universitas-universitas terkemuka di bidang ilmu komputer, Sistem Informasi dan Teknik Komputer menyediakan wadah bagi mahasiswa, dosen, peneliti, insinyur dan ilmuwan untuk berbagi ilmu. Kita telah menerima berbagai paper terbaik dari berbagai kampus dan akan diterbitkan di jurnal Nasional yang ditunjuk. Terimakasih atas segala dedikasi dari panitia dan semua pihak sehingga acara seminar ini dapat terlaksana dengan baik.

Salam,

Prof. Dr. Ir. Widodo Budiharto, S.Si., M.Kom., IPM., SMIEEE

General Chair SNIKSI 2021



Sambutan Kepala Lembaga Layanan Pendidikan Tinggi Wilayah III Jakarta

Seminar Nasional Ilmu Komputer & Sistem Informasi SNIKSI 2021

Assalamualaikum Wr Wb,

Selamat Pagi, Salam Sehat dan Salam Sejahtera bagi kita semua.

Segala puji bagi Allah SWT yang telah memberikan nikmat dan juga kesehatan sehingga kita dapat berkumpul bersama pada “Seminar Nasional Ilmu Komputer Dan Sistem Informasi (SNIKSI 2021)”

Yang terhormat :

Advisory Committee

Prof. Dr. Ir. Harjanto Prabowo, MM, Bina Nusantara University, Indonesia

Prof. Tirta N. Mursitama, S.Sos., M.M., PhD, Bina Nusantara University, Indonesia

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Yaya Sudarya Triana, M.Kom., Ph.D (Universitas Mercubuana)

Para hadirin peserta seminar yang berbahagia,

Perkembangan teknologi dan transformasi digital yang begitu pesat saat ini erat kaitannya dengan bidang Ilmu Komputer, Sistem Informasi, Teknik Komputer dan Teknologi informasi. Kemajuan ini telah membawa dampak yang luar biasa bagi kemajuan peradaban umat manusia. Pekerjaan-pekerjaan yang sebelumnya dikerjakan oleh manusia, kini relatif sudah tergantikan oleh perangkat mesin otomatis. Ditemukannya berbagai formulasi baru kapasitas komputer juga telah memberikan banyak kemudahan dan kenyamanan bagi kehidupan umat manusia.

Seorang Technologist dan Pimpinan dari perusahaan perangkat lunak artificial intelligence terkemuka, Thomas M. Siebel mengatakan bahwa ada 4 kekuatan teknologi yang dapat mengubah pola, perilaku, dan aktivitas kita di abad ke 21, yaitu; cloud computing, big data, artificial intelligence, dan internet of things. Dimana keempatnya mengubah pola pikir, beraktivitas, berbisnis, berorganisasi, dan pola pemerintahan menjadi lanskap digital yang baru dan membuat sesuatu yang sebelumnya mustahil menjadi kenyataan.

Kita semua merasakan gelombang pasangunya transformasi digital mulai dari industri periklanan, media, dan e-commerce yang saat ini menghiasi spektrum investasi secara global. Transformasi digital ini begitu memegang kendali di berbagai bidang, terlebih dalam menghadapi era smart society 5.0. Ada begitu banyak perubahan dan tantangan yang harus kita hadapi, yaitu mempersiapkan Sumber Daya Manusia yang unggul. Era ini juga menuntut masyarakat dalam mengantisipasi gejolak revolusi industri 4.0 yang penuh disrupsi.

Para hadirin peserta seminar yang budiman,

Seminar Nasional Ilmu Komputer dan Sistem Informasi (SNIKSI) Tahun 2021 ini merupakan sarana bagi mahasiswa, tenaga pendidik, maupun peneliti dalam meningkatkan mutu publikasi, menjangking gagasan, dan memantik semangat penelitian.

Atas nama Lembaga Layanan Pendidikan Tinggi Wilayah III, kami mengucapkan selamat dan sukses untuk Universitas Bina Nusantara sebagai host yang bersinergi dengan beberapa Perguruan Tinggi di lingkungan LLDikti Wilayah III sebagai co-host yaitu

- Universitas Tarumanagara
- Universitas Gunadarma
- Universitas Pancasila
- Universitas Mercubuana
- Universitas Esa Unggul
- STMIK Jakarta STI&K
- Universitas Budi Luhur

Semoga tujuan dari kegiatan ini dapat tercapai, yaitu untuk meningkatkan mutu publikasi, baik kuantitas maupun kualitas, terciptanya budaya menulis karya ilmiah yang pada akhirnya akan bermuara ke penyebaran ilmu pengetahuan yang masif, baik itu melalui seminar maupun jurnal-jurnal yang bermutu.

Demikianlah sambutan yang dapat saya sampaikan, selamat mengikuti rangkaian kegiatan dari awal hingga akhir sesi, semoga bermanfaat. Salam sehat, Kampus Merdeka, Indonesia Jaya!

Wassalamu 'alaikum Wr. Wb.

Prof. Dr. Agus Setyo Budi, M.Sc
Kepala LLDIKTI Wilayah III



Sambutan Rektor Universita Bina Nusantara

Seminar Nasional Ilmu Komputer & Sistem Informasi SNIKSI 2021

Merupakan kehormatan besar bagi saya untuk menyambut Anda di Konsorsium Bidang Ilmu Komputer dalam Seminar Nasional Ilmu Komputer dan Sistem Informasi (SNIKSI) 2021 dimana kegiatan ini bertujuan untuk mendorong mahasiswa sarjana, pascasarjana, dosen, peneliti, dan ilmuwan dari seluruh Indonesia khususnya LLDIKTI Wilayah III untuk berbagi dan mempublikasikan gagasan dan penelitian di bidang ilmu komputer, kecerdasan komputer dan teknologi Informasi.

Seminar Nasional yang berfokus pada penciptaan masa depan dengan perbaikan dan kemajuan sistem informasi dan bertujuan untuk mendorong pembinaan transformasi digital masyarakat sangat penting untuk membuat universitas tetap relevan dengan kebutuhan masyarakat modern dan peningkatan taraf hidup masyarakat.

Hadirin sekalian, saya ingin menyampaikan penghargaan yang setinggi-tingginya kepada LLDIKTI Wilayah III, beserta beberapa perguruan tinggi sebagai co-host, seperti

- Universitas Tarumanagara
- Universitas Gunadarma
- Universitas Pancasila
- Universitas Mercubuana
- Universitas Esa Unggul
- STMIK Jakarta STI&K
- Universitas Budi Luhur

dan semua keynote speaker yang diundang, semua presenter penulis, dan partisipan yang akan membuat seminar ini bermakna. Saya sangat menyarankan untuk memanfaatkan seminar ini dengan bijak, tidak terbatas pada diskusi tentang penelitian tetapi juga secara aktif mencoba membangun koneksi untuk penelitian bersama, untuk publikasi, dan peningkatan jenjang jabatan akademik. Saya juga berterima kasih kepada Ketua Seminar dan semua anggota panitia seminar.

Demikianlah sambutan yang dapat saya sampaikan, selamat mengikuti rangkaian kegiatan dari awal hingga akhir sesi, semoga bermanfaat. Salam sehat.

Jakarta, 24 October 2021

Prof. Dr. Ir. Harjanto Prabowo, MM
Ketua Konsorsium Bidang Ilmu Komputer



Keynote Speaker 1

Adaptive central pattern generators to control human/robot interactions

Patrick Hénaff, LORIA UMR 7503, Université de Lorraine – CNRS, Nancy, FRANCE

patrick.henaff@loria.fr

Abstract

The presentation will concern the use of bio-inspired robot controllers based on the functioning of specific biological sensorimotor loops that control biological systems. These loops are based on specific neural network structures, called central pattern generators (CPG) that are implied in the genesis and learning of adaptive rhythmic movements. Therefore, it is interesting to better understanding and modeling these structures to have humanoid robots able to learn rhythmic movements for locomotion or for interacting with humans. After a brief introduction on biological central pattern generators and the rhythmic movements, we will introduce the concept of synchronization a principle that underlies the rhythmic interaction between humans and the dynamic oscillators. Different models of central pattern generators based on dynamic oscillators will be introduced. The second part of the presentation will present several experiments of vision-based Human-Robot motor coordination using adaptive central pattern generators. Other experiments of robot teleoperation for industrial rhythmic tasks will be introduced. Several videos of simulations and experiments will illustrate the presentation. A conclusion and perspectives will conclude the talk.

Keywords: Humanoid robotics, Neural control, Central Pattern Generator (CPG), sensorimotor coordination, Human/robot interactions, locomotion

Dr. Patrick Henaff is a full-time professor within the School of Engineers "Mines Nancy" at the University of Lorraine, in France. He is the head of the research department, Complex Systems, Artificial Intelligence and Robotics, at LORIA, an applied Computer Science laboratory. His research interests lie in the bio-inspired control of humanoids robots. Dr. Henaff earned his Master's in electronics at the University of Rennes, France, and completed his PhD in Robotics at the University Paris VI. He joined "Mines Nancy" and University of Lorraine in 2013. His passion lies in studying artificial intelligence, interactive robotics and neural control. He participated to several robotic projects especially for legged locomotion and control of rhythmic movements. He is a regular reviewer for international journals (IEEE TRO, Frontiers in neuro-robotics, IJARS, JAR, neuro-computing and conferences (ICRA, IROS, IJCNN, AIM).



Keynote Speaker 2

Modelling personality prediction from user's posting on social media

Derwin Suhartono, Head of Computer Science Department Bina Nusantara University
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Abstract

Huge amount of user's postings from social media becomes promising data that can be converted into new knowledge. One of which is to mining the information for predicting user's personality. This task is able to get the real basic characteristics of people which nowadays surfs a lot in social media. Text becomes appropriate type of data to utilize as social media users tend to do texting for expressing their feelings, thoughts, as well as their emotions. The Big Five Personality Traits, also known as OCEAN, is one concept in psychology that is popular in the state-of-the-art research in personality prediction. Research in personality modelling using text involve feature extraction methods as well as deep learning-related architecture are appealing to be much further enhanced. Finally, promising research result is indicated to happen in the future such that actual personality of a person is possible to observe.

Keywords: real basic characteristics, Big Five Personality Traits, personality modelling, feature extraction, deep learning.

Derwin Suhartono is a faculty member of Bina Nusantara University, Jakarta, Indonesia. He currently also serves as Head of Computer Science Department. He got his PhD in computer science from Universitas Indonesia in 2018. His research fields are natural language processing and machine learning. Recently, he is continually investigating argumentation mining, personality recognition and hoax analysis. He actively involves in the Indonesia Association of Computational Linguistics (INACL), and Indonesian Computer Electronics and Instrumentation Support Society (IndoCEISS). His professional memberships are ACM, INSTICC, IACT, IEEE, and many others. He also serves as reviewer in many international conferences and many reputable international journals such as IEEE Access, IJCIS, MDPI journals, etc.

Rundown Acara

Seminar Nasional Ilmu Komputer dan Sistem Informasi 2021

SNIKSI 2021

October 28th, 2021

Time	Activities	PIC
07.00–08.00	Registration	Registration Team
VENUE VIRTUAL ROOM		
Zoom Meeting Link : https://bit.ly/3BbUPm2 Meeting ID = 937 2127 6898 Passcode = 2021		
08.00–08.10 08.10–08.20 08.20–08.30	Opening Ceremony Indonesia Raya LLDikti III video	MC (Mutiara Permata, S.IKom)
WELCOME SPEECH :		
08.30–08.40	Prof. Dr. Ir. Widodo Budiharto, S.Si., M. Kom., IPM, Bina Nusantara University, Indonesia (Conference General Chair)	MC (Mutiara Permata, S.IKom)
08.40 – 08.50	Prof. Tirta N. Mursitama, S.Sos., M. M., Ph.D, (Vice Rector Research & Tech Transfer Bina Nusantara University, Indonesia)	
08.50 – 09.00	Prof. Dr. Ir. Harjanto Prabowo, MM, Bina Nusantara University, Indonesia (Advisory Committee, Rector Bina Nusantara University, Indonesia)	
09.00 – 09.10	Prof. Dr. Agus Setyo Budi, M.Sc (Head Representative of LLDIKTI III Jakarta)	
KEYNOTE SPEAKER		
09.10–09.50	Dr. Derwin Suhartono (Bina Nusantara University, Indonesia)	Dr. Rusdah, S.Kom., M.Kom. Operator : Amien Ibrahim, Hanif, Ronald
09.40 –10.20	Prof. Patrick Henaff (Lorraine University, France)	Dr. Rusdah, S.Kom., M.Kom. Operator : Amien Ibrahim, Hanif, Ronald
PARALLEL SESSIONS I :		Session Chair:
13.00–15.15 (@15 min)	Room I	Dr. Dewi Agushinta Rahayu, S.Kom, M.Sc
	Room II	Kenny Jingga, S.Kom, M.T
15.15-15.30	BREAK	
15.30–15.45	Announcement	COMMITTEE Operator: Kenny, Hanif
15.45-16.00	Closing	MC (Mutiara Permata, S.IKom)

Parallel Room : 13.00 PM -15.00 PM

Room V Session Chair (Dr. Dewi Agushinta Rahayu S.Kom., M.Sc) Operator : Florence		
Live Presentation Zoom Meeting Link : https://bit.ly/3BbUPm2	Meeting ID = 937 2127 6898 Passcode = 2021	
Time	Paper ID	Title and Author
13.00 PM-13.15 PM	5138	Developing The Interactive Magic AR Book with Gamification for Promote Story Book Dionisius Andrian Wangsadani, Matheus Andrew Setiawan, Bagaskara Akbar Fadhilillah, Yulyani Arifin
13.15 PM-13.30 PM	5166	Sentiment Analysis of Indonesia's Digital Wallet using Combination Machine Learning and Emoticon Weight Gusmariansi Tinambunan, Suharjito
13.30 PM-13.45 PM	5175	Penerapan Metode Moving Average dan Exponential Smoothing untuk Prediksi Nilai Ekspor dan Impor Indonesia Aditia Arga Pratama, Dewi Agushinta R., M. Abdul Mukhyi
13.45 PM-14.00 PM	5181	Pengembangan Sistem Informasi Pelatihan Olahraga Sepak Takraw Habibullah Akbar, Dhea Anisa Putri, Nizirwan Anwar, Alivia Yulfitri
14.00 PM-14.15 PM	5191	Sistem Informasi Pelayanan Jaringan Komputer Ionia Veritawati, Ibnu Triwahyudi
14.15 PM- 14.30 PM	5261	Interpretasi Seismik dan Pemodelan Bawah Permukaan menggunakan Metode Konvergensi Multigrad: Studi Kasus Lapangan X Ervina Nisfiani, Wirya Sumantri, Lussiana ETP
14.30 PM -14.45 PM	5292	Sentiment Analysis of Internet Service Provider in Indonesia on Twitters Mohamad Afrizal, Mujiono Sadikin
14.45 PM-15.00 PM	5329	Pengklasifikasian Citra Tulisan Anak melalui Metode Convolutional Neural Network sebagai Pendukung Pendeteksian Dini Disgrafia Rita Wiryasaputra
15.00 PM-15.15 PM	5387	Community Response to Election Policy During the COVID-19 Arya Arief Budiman, Mujiono Sadikin
15.15 PM-15.30 PM	5525	Continuous Sign Language Recognition using Combination of Two Stream 3DCNN and SubUNet Haryo Pramanto, Suharjito

Parallel Room : 13.00 PM -15.00 PM

Room VI Session Chair (Kenny Jingga, S.Kom., M.T)		
Live Presentation Zoom Meeting Link : https://bit.ly/3BbUPm2	Meeting ID = 937 2127 6898 Passcode = 2021	
TIME	PAPER ID	TITLE AND AUTHOR
13.00 PM-13.15 PM	5628	Multi-classification Sentiment Analysis using Convolution Neural Network and Long-Short Term Memory with Attention Model Yohanes Christianto, Suharjito
13.15 PM-13.30 PM	5718	Rancang Mesin Antiseptik dan Pengukur Suhu Tubuh Otomatis sebagai Pendeteksi Awal COVID-19 Berbasis IOT Annisa Dwi Yamto Putri, Eri Prasetyo Wibowo
13.30 PM-13.45 PM	5737	Fingerprint Authenticity Classification Algorithm based-on Distance of Minutiae using Convolutional Neural Network Hariyanto, Sarifuddin Madenda, Sunny Arief Sudiro, Tubagus Maulana
13.45 PM-14.00 PM	5768	Technology Development for Detecting Palm Oil Ripeness: A Systematic Literature Review Ryan Alpha August, Suharjito
14.00 PM-14.15 PM	5787	Pigeon-O as Online Video Conference for Education Maria Susan Anggreainy, Joseph Wahyu Christianto, Nathanael Abednego Yakim, Tiara Wijaya
14.15 PM- 14.30 PM	5791	Tasks Management: Approach to Problem Solving and its Relation to the Scrum and Agile Software Development Method Maria Susan Anggreainy, Alvin Putra Sulaiman, Calvin Mathew, Kezia Eka Tirta
14.30 PM -14.45 PM	5792	Generation of Teeth Caries Features for Human Dental Caries Classification Linda Wahyu Widianti, Sarifuddin Madenda, Johan Harlan, Sunny Arief Sudiro, Farina Pramanik
14.45 PM-15.00 PM	5794	Development Of Handmade Product Marketing System Based On E-Commerce With Fast Method (Case Study: Handmade By Rens) Linda Wahyu Widianti, Muhammad Khusairi, Sunny Arief Sudiro
15.00 PM-15.15 PM	5805	Purwarupa Sistem Kendali Kemudi Kendaraan Roda Empat menggunakan Girooskop pada Realitas Virtual Berbasis Mikrokontroler ESP-WROOM-32 Ahmad Ryan Rivai, Bheta Agus Wardijono

ABSTRAKSI

Developing The Interactive Magic AR Book with Gamification for Promote Story Book

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Abstract: Nowadays the children like to playing game or watching video with mobile phone rather than reading the story book. Also the parent rarely to telling story for their children. The rising of Augmented Reality in Education, tourism also in virtual tour at Museum. The AR technology can give positive impact for new experience learning also the student understanding. Also the gamification can increase the user motivation for learning. Using the study literature, gathering the user requirement, analysis, design the prototype, and evaluate with Heuristic Usability Evaluation, we propose the Interactive Magic Augmented Reality (AR) Book and gamification on application to attract children to read story book and increase the relation between parent and their children. With this combination Augmented Reality Technology with Gamification also the interactive multimedia implemented on the Magic AR Book and the AR apps can satisfy the user not only the children but also the public. Based on heuristic usability evaluation that can be conclude the user is satisfy and enjoy the new experience reading the Magic AR Book.. So we can conclude that our purpose method give positive impact for children to reading the storybook with new technology.

Keywords: Augmented Reality; Gamification; Magic AR Book; Heuristic Usability Evaluation

Sentiment Analysis of Indonesia's Digital Wallet Using Combination Machine Learning and Emoticon Weight

Gusmariansi Tinambunan

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Abstract: Opinions on social media can be used to determine user sentiment by using sentiment analysis concept. Sentiment analysis requires several important stages, namely, preprocessing, feature extraction and classification method stages. The preprocessing stage was carried out to eliminate inconsistent data. In previous research, punctuation marks removal was applied at the preprocessing stage which can eliminate the emoticon position. Emoticons are a combination of punctuation marks. According to previous research, the emoticon feature has no contribution in sentiment analysis. There is another suggestion to maintain an emoticon position like converting an emoticon into a more relevant word such as :) into a "smile". However, the feature of emoticon weights has not been considered in the sentiment analysis process. In order to consider the role of emoticons and to improve sentiment analysis performance, we propose using a combination of machine learning and emoticon weights. We perform emoticon weight based on probability and sentiment score. Each probability value and sentiment score of the emoticon will be normalized using the z-score method. There are several machine learning methods that have the best classification success rates, namely, Naïve Bayes and SVM. Based on the evaluation results of the proposed model, the best accuracy is 87% - 89% when using the combination of machine learning and emoticon sentiment score. Based on the results also show that the emoticon sentiment score has a significant effect on the accuracy of sentiment analysis.

Keywords: Sentiment Analysis; Preprocessing; Emoticon Weight; Z-Score; Naïve Bayes; SVM

Penerapan Metode Moving Average dan Exponential Smoothing untuk Prediksi Nilai Ekspor dan Impor Indonesia

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Abstract: The economy of countries affected by the COVID-19 disease has experienced a decline. The Indonesian government is planning the National Economic Recovery (PEN) in reviving the Indonesian economy after COVID-19. One of the activities in national economic recovery is supporting exports and imports. The increasing demand for exports will cause the domestic currency to increase and the rupiah exchange rate to strengthen. Large imports will cause other countries' currencies demand to increase so that the domestic currency weakens. This movement in exports and imports values can determine whether a country is experiencing a surplus or a deficit. It makes predictions of future changes in the value of exports and imports important. This study will compare the Moving Average and Exponential Smoothing methods in predicting the value of exports and imports. Mean Absolute Percent Error (MAPE) is used to calculate the prediction error. The tool used for calculations is POM-QM Windows. The results of this study indicate that the Exponential Smoothing method with $\alpha = 0.7$ is the best method for predicting the value of Indonesian exports, whereas the Moving Average method is the best method for predicting the value of Indonesian imports.

Keywords: Export; Exponential Smoothing; Import; Moving Average; Predict

Pengembangan Sistem Informasi Pelatihan Olahraga Sepak Takraw

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Abstract: Until now, the process of monitoring and evaluating the performance of sepak takraw athletes is still not structured. Often, the records of the training points that have been carried out are lost, making it difficult for the coach to evaluate the performance of the athletes. In this study, we propose a prototype mobile application that can enter training points, provide reports on athlete performance and also conduct an assessment of the exercises that have been done. Prototype development is carried out using an Extreme Programming approach which includes planning, design, coding and implementation. The prototype was tested based on the Equivalence Portitioning (EP) and System Usability Scale (SUS) methods. The EP method is carried out on all functionalities of the application requirements while the SUS is given to 5 trainers. The EP test results prove that all the required functionality can run according to the expected response. The results of SUS gave a score of 79, which means that the application prototype can meet the needs of coaches in coaching sepak takraw athletes.

Keywords: Information System; Sepak Takraw Sport; System Usability Scale

Sistem Informasi Pelayanan Jaringan Komputer

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Abstract: A computer network is a collection of a number of communication terminals that is located in various locations consisting of more than one interconnected computer. Computer networks are geographically divided into LANs, MANs, WANs and the Internet. The Data and Information Center is a part of the organization at the Ministry of Social Affairs which has task to facilitate the computer network services. Broad service users which includes Indonesia area make some of the computer network service change requests being missed to be followed up and has not been monitored yet. A computer network service information system building is proposed to solve this problem. Users and administrators can be facilitated by providing features for submitting service change requests from users; managing the units / agencies, location groups, types of services; and monitoring services. The system is built using the waterfall method. UML (Unified Modeling Language) modeling is used at the analysis stage, such as use case diagrams, activity diagrams, sequence diagrams, class diagrams and Entity Relationship Diagram (ERD). The information system testing process is carried out by the blackbox testing method. This research aims to produce a web-based information system that can accommodate user needs, store the documents of service change request, and make it easier to manage service change requests. The results of developing this system are improve the quality of user service and manage the documents store properly.

Keywords: Berbasis Web; Layanan Jaringan Computer; Sistem Informasi; UML; Waterfall

Interpretasi Seismik dan Pemodelan Bawah Permukaan menggunakan Metode Konvergensi Multigrid: Studi Kasus Lapangan X

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Abstract: Seiring dengan berjalannya waktu, untuk meningkatkan efisiensi dalam pengerjaan permodelan bawah permukaan (sub surface model) banyak dikembangkan perangkat lunak untuk memudahkan pengerjaannya. Semua media kertas, analog, tape dikonversi menjadi media digital sehingga semua pengerjaan dilakukan menggunakan komputer atau workstation. Interpretasi seismik merupakan salah satu tahapan penting dalam eksplorasi hidrokarbon dimana dilakukan penafsiran atau interpretasi, evaluasi, pembahasaan terhadap data seismik hasil akuisisi lapangan dan pemrosesan, diinterpretasikan ke dalam kondisi geologi yang diharapkan bisa mendekati kondisi geologi bawah permukaan sebenarnya. Penelitian ini bertujuan melakukan interpretasi seismik dengan meng-implementasikan metode konvergensi multigrid untuk membangun model bawah permukaan di lapangan X. Pengujian dilakukan dengan menggunakan data seismic tiga dimensi (3D). Hasil pengujian menunjukkan bahwa metode konvergensi multigrid berhasil memberikan model bawah permukaan (sub surface model) dengan jelas, selain itu juga bisa menampilkan model bawah permukaan dalam bentuk tiga dimensi (3D).

Keywords: Metode Konvergensi Multigrid; Pemodelan Bawah Permukaan; Interpretasi Seismik

Sentiment Analysis of Internet Service Provider in Indonesia on

Twitters

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Abstract: In suppressing the spread of COVID-19, the Indonesian government has established a PSBB policy or Large-Scale Social Restrictions. Many aspects and areas affected by the policy include education and offices. APJII or the Association of Indonesian Internet Service Providers explained that there was an increase in the number of internet users in Indonesia from last year's penetration of 64% to 73.7%. One of the reasons for this increase was the COVID-19 pandemic. On the Twitter platform, they often find various kinds of public responses that they give about the services of the Internet Service Provider, both negative and positive. In this study, sentiment analysis was conducted to determine public opinion on the performance of Internet Service Providers. The method used is the Naïve Bayes classification algorithm and Support Vector Machine assisted by RapidMiner and Python tools. The experimental results show that the Support Vector Machine algorithm provides the highest accuracy values of 93% and 92% for the two data tested, both Indihome and Firstmedia.

Keywords: Internet; Naïve Bayes; Support Vector Machine; Algorithm; Sentiment

Pengklasifikasian Citra Tulisan Anak melalui Metode Convolutional Neural Network sebagai Pendukung Pendeteksian Dini Disgrafia

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Abstract: Era digitalisasi tidak membuat kegiatan menulis dengan tangan dilupakan, karena kegiatan tersebut dibutuhkan untuk berkomunikasi secara tertulis dalam pengoptimalan fungsi otak dan termasuk elemen penting dalam pendidikan anak usia dini. Disgrafia merupakan gangguan belajar yang berpengaruh pembentukan huruf, spasi, ejaan, dan kecepatan menulis. Gangguan disgrafia yang tidak terdeteksi secara dini, berdampak pada anak dan lingkungan keluarganya yang cenderung terintimidasi dan frustrasi. Beberapa negara memiliki peningkatan penderita disgrafia. Pemeriksaan metode konvensional memiliki keterbatasan dalam waktu dan biaya, dimana seorang asesor harus mengevaluasi dan memantau anak penderita disgrafia secara intensif. Convolutional Neural Network merupakan subdomain Deep Learning yang efektif dalam pengenalan objek gambar. Model 4 lapisan convolution dengan fungsi aktivasi ReLU Dengan rasio 80% data training: 20% data testing dengan 50 epoch, tingkat keakuratan mencapai 97%. Pemeriksaan dini disgrafia dapat membantu perbaikan kemampuan komunikasi verbal menulis anak. Siswa penderita disgrafia dapat mencapai kapasitas maksimal akademik dan menjadi orang sukses dengan bantuan dan dukungan pembelajaran yang tepat.

Keywords: Disgrafia; CNN; Machine Learning

Community Response to Election Policy During the COVID-19

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Abstract: The purpose of this study is to identify sentiment analysis of public responses to the Indonesian Government's policy to carry out regional head elections (pilkada) during the COVID-19 pandemic using the Naïve Bayes Classifier (NBC) and Support Vector Machine (SVM) algorithms. The research method used in this study is to use quantitative research methods. The data used in this study were taken from public comments on a tweet in a twitter post that was saved in .csv format. The results obtained from this study are to compare 2 (two) algorithms, namely Naïve Bayes and SVM into 3 test scenarios. The test results show the accuracy value obtained by SVM is much better than Naïve Bayes with the value in the first scenario Nave Bayes 76% : 88% SVM, the second scenario Nave Bayes 76% : 88% SVM, and the third scenario Nave Bayes 78% : 90 % SVM. There are several limitations in this study, such as the data used only from the twitter platform, the data used only focuses on Indonesian posts, and only 2 (two) sentiment classification class labels are used, namely positive and negative. This research can be used as a reference by the General Election Commission (KPU) to determine future regional head election policies during the covid-19 period. This research falls into the area of data mining and machine learning disciplines.

Keywords: Election Policy; Naïve Bayes; Support Vector Machine; Algorithm; Sentiment

Continuous Sign Language Recognition using Combination of Two Stream 3DCNN and SubUNet

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Abstract: Research on sign language recognition using deep learning has been carried out by many researchers in the field of computer science but there are still obstacles in achieving the expected level of accuracy. Not a few researchers who want to do research for Continuous Sign Language Recognition but are trapped into research for Isolated Sign Language Recognition. The purpose of this study was to find the best method for performing Continuous Sign Language Recognition using Deep Learning. The 2014 RWTH-PHOENIX-Weather dataset was used in this study. The dataset was obtained from a literature study conducted to find datasets that are commonly used in Continuous Sign Language Recognition research. The dataset is used to develop the proposed method. The combination of 3DCNN, LSTM and CTC models is used to form part of the proposed method architecture. The collected dataset is also converted into an Optical Flow frame sequence to be used as Two Stream input along with the original RGB frame sequence. Word Error Rate on the prediction results is used to review the performance of the developed method. Through this research, the best achieved Word Error Rate is 94.1% using the C3D BLSTM CTC model with spatio stream input.

Keywords: Continuous Sign Language Recognition; Two Stream Mode; 3DCNN; LSTM; CTC

Multi-Classification Sentiment Analysis using Convolution Neural Network and Long-Short Term Memory with Attention Model

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Abstract: Research on sign language recognition using deep learning has been carried out by many researchers in the field of computer science but there are still obstacles in achieving the expected level of accuracy. Not a few researchers who want to do research for Continuous Sign Language Recognition but are trapped into research for Isolated Sign Language Recognition. The purpose of this study was to find the best method for performing Continuous Sign Language Recognition using Deep Learning. The 2014 RWTH-PHOENIX-Weather dataset was used in this study. The dataset was obtained from a literature study conducted to find datasets that are commonly used in Continuous Sign Language Recognition research. The dataset is used to develop the proposed method. The combination of 3DCNN, LSTM and CTC models is used to form part of the proposed method architecture. The collected dataset is also converted into an Optical Flow frame sequence to be used as Two Stream input along with the original RGB frame sequence. Word Error Rate on the prediction results is used to review the performance of the developed method. Through this research, the best achieved Word Error Rate is 94.1% using the C3D BLSTM CTC model with spatio stream input.

Keywords: Continuous Sign Language Recognition; Two Stream Mode; 3DCNN; LSTM; CTC

Rancang Mesin Antiseptik dan Pengukur Suhu Tubuh Otomatis sebagai Pendeteksi Awal COVID-19 Berbasis IOT

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Abstract: The Corona Disease Virus (Covid-19) was declared a pandemic on March 12, 2020. The virus can spread very quickly. One way to prevent the spread of this virus is to maintain hand hygiene such as washing hands with soap or antiseptic. In addition to maintaining hand hygiene, body health must also be maintained so that body temperature is always at a normal temperature, which is between 36.5-37.2 °C. Therefore, this tool is made to remove antiseptic automatically and the body temperature measuring device is made to make it easier to measure body temperature. This tool is made with various electronic components, namely NodeMCU Microcontroller, infrared sensor, temperature sensor GY-906 and ultrasonic sensor HC-SR04. In addition, this tool is also equipped with a relay module, water pump, LCD, buzzer, LED. This research also uses an application, namely the Blynk application. In this study, tests were carried out to see the results of the infrared sensor, gy-906 temperature sensor and ultrasonic sensor. In the infrared sensor output, the relay will activate the water pump, then the water pump will turn on and the green LED will light up. On the gy-906 temperature sensor, the output obtained is the LCD will light up and the buzzer will sound. On the ultrasonic sensor the output obtained is the buzzer will sound.

Keywords: NodeMCU; Infrared Sensor; Gy-906 Temperature Sensor; Ultrasonic Sensor HC-SR04; Relay Module; Water Pump; LCD; Buzzer; LED; Blynk Application

Fingerprint Authenticity Classification Algorithm based-on Distance of Minutiae using Convolutional Neural Network

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Abstract: Fingerprint identification systems are vulnerable to attempted authentication fraud by creating fake fingerprints that mimic the live. This paper proposes method to detect whether a fingerprint is live fingerprint or fake fingerprint using Convolutional Neural Network (CNN). We construct a features database of distances among minutiae of fingerprints, where the distance calculation is based-on Euclidean Distance. Furthermore, the distance features database that has been constructed is classified using the CNN. CNN is a deep learning method designed for machine learning processes so that computers recognize objects in an image and this method has capability classifying an object. The numerical results have shown that the best accuracy achieves 99.38% when the learning rate is 0.001 with the epoch of 100.

Keywords: Fingerprint; Live; Fake; CNN

Technology Development for Detecting Palm Oil Ripeness: A Systematic Literature Review

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Abstract: Oil palm maturity detection technology has developed rapidly. One of the current challenges is the difficulty to accurately determine maturity using manual methods. A systematic literature review was carried out. Scientific articles were obtained from journals and analyzed to identify methods which are often used by researchers. Based on the exclusion criteria, 56 papers were included in the analysis. Classification was done according to computer vision and sensors. The results of the literature review indicate that the method widely used by researchers is the Artificial Neural Network (ANN) model. Meanwhile, Near Infra-Red (NIR) was a sensor widely used by researchers as this sensor can measure fruit maturity at an affordable cost. Based on the review, it can be concluded that both computer vision and sensors contribute to accurate and efficient measurement of maturity.

Keywords: Computer Vision; Sensor; Predict; Palm Oil Ripeness

Pigeon-O as Online Video Conference for Education

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Abstract: The Covid-19 pandemic has changed the world. All of our activities have to adapt with this pandemic. We need to keep distancing with another people to reduce the risk for getting Covid-19. This pandemic has changed all sector including education. Now, we need to learn from home. It means that the needs of online conference application increased a lot. For fulfilling the needs of online conference application, we decide to make an online conference application named Pigeon-O. Pigeon-O will give you all the features and beautiful user interfaces. This application was developed with concerning the other online conference application weaknesses.

Keywords: Agile; Scrum; Sprint; Online Conference; Product Backlog

Tasks Management: Approach to Problem Solving and its Relation to the Scrum and Agile Software Development Method

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Abstract: This paper reports on the major social problem, managing tasks, and related to the advanced way to manage tasks as in projects, by understanding scrum and agile software development methods. Furthermore, our final conclusion after much research for resolving those problems is by providing a mobile application. The mobile application named "Centang" has some features to help its user to manage tasks properly and helps to apply the scrum method easier.

Keywords: Agile; Scrum; Sprint; Task Management; Mobile Application

Generation of Teeth Caries Features for Human Dental Caries Classification

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Abstract: Many dental diseases are experienced by humans, one of which is dental caries, there are three types of human dental caries, namely enamel caries, dentin caries and pulp caries. This study contains the detection of caries disease in human teeth using two-dimensional images and radiological results of x-ray periapical radiographs from a test image dataset that has a number of pixels between 374x288 to 672x514 pixels with an image resolution of 96 DPI. The original data of existing dental images was processed using Matlab language to obtain caries features through three stages of the processes: pre-processing stage which are stages of the preprocessing process that converts data from a two-dimensional color image (row/height, column/width) that is stored using three channels Red, Green and Blue (RGB), into a grayscale image with one channel, the process of extracting dental caries features by performing calculations caries area and calculate the distance of the caries area to the nerve canal (pulp), and the process of building learning or reference data from dental caries using 24 radiograph periapical data on molar tooth images processed using Matlab. Dental caries features extraction process and the features learning process to generate references features from dental caries is the main objective of this research. This study result was references features for human dental caries classification.

Keywords: Dental Image; Detection; Features; Learning Data; Dental Caries; Periapical Radiograph

Development of Handmade Product Marketing System Based on E-Commerce with Fast Method (Case Study: Handmade by Rens)

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Abstract: The e-Commerce-based handmade product marketing system is a web-based system that is useful for assisting customers in ordering handmade products. Currently Handmade by Rens delivery of product sales information is still using Instagram and Facebook media facilities. This is what makes the obstacles faced related to the media. Therefore, with the development of technology, it encourages researchers to create an e-commerce-based system development that can help customers who want to order Handmade by Rens products. The design process uses a Business Use-case Model, Navigation Structure and Unified Modelling Language (UML). Making this system using programming languages (HTML, CSS, PHP, JavaScript), jQuery as a library, MySQL as a database, and Bootstrap as a framework. Of the three (3) browsers that have been tested (Google Chrome, Mozilla Firefox, Microsoft Edge) this system runs well on the Mozilla Firefox browser with an access speed of 0.0127 seconds. the results of the user response test have been accumulated as a whole getting the results of 2,306 total score points so that it gets a percentage of 92.24%. With this system, Handmade by Rens customers can easily order handmade products online anytime and anywhere.

Keywords: Marketing System; Handmade; e-Commerce

Purwarupa Sistem Kendali Kemudi Kendaraan Roda Empat menggunakan Giroskop pada Realitas Virtual Berbasis Mikrokontroler ESP-WROOM-32

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Abstract: Dalam penelitian ini akan dibahas mengenai purwarupa sistem kendali kemudi kendaraan roda empat menggunakan giroskop pada realitas virtual, ini merupakan sistem yang memungkinkan untuk bisa mengemudikan dengan menggunakan gerak ayunan tangan melalui perantara sensor giroskop. Mikro-kontroler yang digunakan yaitu ESP-WROOM-32 karena sudah memiliki fungsionalitas lengkap seperti WiFi & Bluetooth. Giroskop yang terdapat pada sensor terpadu MPU-9250 digunakan sebagai pendeteksi gerak, kemudian datanya setelah diolah mikrokontroler dapat digunakan untuk memanipulasi objek yang berada dalam realitas virtual dan objek yang digunakan yaitu kendaraan roda empat sehingga memungkinkan alat ini mengemudikan kendaraan tersebut.

Keywords: ESP-WROOM-32; MPU-9250; Realitas Virtual; Kemudi
