ICOMITEE 2021
PROGRAM BOOK

The 2021 International Conference on Computer Science, Information Technology and Electrical Engineering (ICOMITEE)

October
27th – 28th, 2021
El Hotel Royale, Banyuwangi

Co-Host :

Sponsorship :

CONFERENCE PROGRAM BOOK

2021 International Conference on Computer Science, Information Technology, and Electrical Engineering
(ICOMITEE 2021)

October 27th - 28th, 2021
Banyuwangi, Indonesia

ICOMITEE 2021 Partners and Supporters

Organizer:

Technical Co-Sponsorship:

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Foreword from Conference Chair of ICOMITEE 2021

In the name of Allah, the Most Beneficent and the Most Merciful.

On behalf of the organizing committees, I would like to welcome all of you to Banyuwangi, Indonesia for the 2021 International Conference on Computer Science, Information Technology and Electrical Engineering (ICOMITEE).

2021 has been a very challenging year due to the COVID-19 pandemic. With the safety and well-being of our participants as our top priority, ICOMITEE, originally planned to be hold in Banyuwangi, Indonesia, has been converted to a hybrid conference. Nevertheless, while we may all be physically distant, we hope we can still connect intellectually. I would like to express my hearty gratitude to all participants for sharing and presenting your experiences in this hybrid conference. Only high-quality selected papers are accepted to be presented in this event, so we are also thankful to all the international reviewers and steering committee for their valuable works. I would like to give a compliment to all partners in publications and sponsorships for their valuable supports.

ICOMITEE 2021 is the international conference hosted by University of Jember (UNEJ), co- hosted by Nahdlatul Ulama University of Surabaya (UNUSA), Teknokrat Indonesia University and Banyuwangi State Polytechnic. ICOMITEE 2021 is officially approved by IEEE Indonesia Section and IEEE

Indonesia Computer Society Chapter for technical co-sponsored.

This event is intended to provide technical forum and research discussion related to advance engineering on electrical & electronics, computer science and informatics. The Conference is aimed to bring researchers, academicians, scientists, students, engineers and practitioners together to participate and present their latest research finding, developments and applications related to the various aspects of Information System Management, Data Analytics & Big Data, IT Infrastructure and Security, Electrical and Telecommunication

Allow me to express my deepest gratitude to those who have made this conference possible. My thanks go to the Rector of the University of Jember. I would also like to thank the invited speakers: Prof. Md Saidur Rahman from Bangladesh University of Engineering and Technologi, Prof. Anton Satria Probuwono from King Abdulaziz University and Assoc. Prof. Dr. Ford Lumban Gaol from IEEE Indonesia Computer Society Chapter for accepting our invitation in the conference.

At this conference, the committee received total 77 full manuscripts from various cities in Indonesia and abroad such as China, Malaysia, Ireland, Australia, Poland, Srilanka, Kazakhstan, and India. But, after the review process, 38 full manuscripts were accepted.

I also want to thank and appreciate to all committee members, all TPC Sponsors and Financial Sponsors, all TPC members, and 393 high reputable reviewers from various countries, for all your dedications to the ICOMITEE 2021.

I look forward to having a successful conference, and we hope that all the attendees enjoy and get benefits from this conference.

Prof. Saiful Bukhori ST., M.Kom.
Conference Chair of ICOMITEE 2021

Foreword from IEEE Indonesia Section

Dear distinguished guests, keynote speakers, colleagues, researchers, professionals, ladies and gentlemen, good morning, a prosperous, warm, and spirited greeting.

On behalf of IEEE Indonesia Section, we would like to extend our warmest welcome to all keynote speakers, presenters, and participants to the 2021 International Conference on Computer Science, Information Technology and Electrical Engineering (ICOMITEE). The conference aims to bring together researchers and experts in information systems to share their ideas, experiences and insights. The conference is organized by Universitas Jember (UNEJ) and technically co-sponsored by IEEE Indonesia Section.

IEEE Indonesia Section has conducted many activities over 33 years in Indonesia. IEEE Indonesia has more than 2,600 members and more than 50 senior members from industry professionals, academia and government. In terms of collaboration, IEEE Indonesia section has a good and mutual relationship with ICT organizations, Industries, Government, Universities as well as the Community in Indonesia. IEEE Indonesia also sponsors more than 50 high quality international conferences indexed by Scopus every year held by various universities in Indonesia. Since its formation in 1988, IEEE Indonesia has sponsored the publication of more than 20,000 publications of IEEE international conferences and more than 260 publications of IEEE international journals by Indonesian authors.

The ICOMITEE shows its sustainability due to the hard work of the conference organizers, well organized conference and high quality papers. We do hope in the near future some high quality conferences will be continued and strengthened, so the result will give more benefit and positive impact to the human being, especially to Indonesian people.

In this occasion, I would also like to say welcome to Banyuwangi, which serves beautiful heritages, culture, with warm, polite and friendly people, a vibrant culture and lifestyle.

Finally, we do hope all of you will have enjoyable and valuable experience during this event. You may share your best knowledge in your area of research and professional activities.

Thank you.

Dr. Ing. Wahyudi Hasbi
Chairman, IEEE Indonesia Section

Foreword from IEEE Computer Society Chapter

Greetings!

It is our great pleasure and honor to welcome you to The 2021 International Conference on Computer Science, Information Technology, and Electrical Engineering (ICOMITEE) that will be held in El Royal Hotel Banyuwangi, 27-28 Oktober 2021.

In this event we will have the opportunities to exchange knowledge and information on latest researches and strengthening relationships amongs us, while enjoying the relaxing yet entertaining environment of Banyuwangi.

ICOMITEE is the international conference that will be held on the Faculty of Computer Science, University of Jember that collaborate with IEEE (Institute of Electrical and Electronics Engineers) Indonesia Section & IEEE Computer Society Indonesia Chapter.

The accepted papers will be published and presented Paper on the IEEE Xplore that will be indexed in SCOPUS.

Previously, ICOMITEE already held on October 2019 with the number of articiles with 84 papers from 4 countries, that already held with Blind-Review by more than 300 reviewers

Thank you

Dr Ford Lumban Gaol
IEEE Computer Society Chapter - Chair
Bina Nusantara University, Indonesia

Foreword from Rector of University of Jember

In the name of Allah, the Most Gracious and the Most Merciful.

First of all, I would like to welcome you all to the University of Jember, Indonesia. I am delighted to have you here to participate and attend the 2021 International Conference on Computer Science, Information Technology, and Electrical Engineering (ICOMITEE 2021). Thank you for joining and participating in the present conference that held in Banyuwangi during 27-28 October 2021

As almost occurring in every country, the COVID-19 outbreak resulted in a hard impact on some human development aspects, including human health, education, research, and social-economic. This situation has forced us to find an innovative and creative way in adapting the running situation, including how we carry out the international conference without interfering the participants health and safety. Therefore, this conference has been changed into hybrid method in order to harmonize between the continuation of conference agenda and the currently COVID-19 pandemic situation worldwide.

The conference is aimed to provide a forum for presentation and discussion among academics, researchers, and policymakers in this region relating to the current progresses in some topics like telecommunication, electrical, data analytics & big data, IT infrastructure & security, also management information system. I expect that all scientific papers resulted in and shared during this conference will

inspire us to be more productive in this field and also enable further improvement of our work.

The hard work and valuable contributions of both the organizing and scientific conference committee members have made this conference organization possible. I thank everybody who in one way or other has contributed to make this international conference a success. Additional thanks is also delivered to our sponsors (IEEE Indonesian Section and IEEE Computer Society Indonesian Chapter) for providing support and assist us for this conference.

Dr. Ir. Iwan Taruna, M.Eng, IPM.
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- Mohd Umar Farooq, Muffakham Jah College of Engineering and Technology, India
- Madhur Upadhayay, Shiv Nadar University, India
- Panagiotis Varzakas, University of Thessaly, Greece
- Jami Venkata Suman, GMR Institute of Technology, India
- Chitra Venugopal, Oregon Institute of Technology, USA
- Rima Wahyuningrum, University of Trunojoyo Madura, Indonesia

- Carlos Becker Westphall, Federal University of Santa Catarina, Brazil
- Widjonarko Widjonarko, Universitas Jember, Indonesia
- Widodo Widodo, Universitas Negeri Jakarta, Indonesia
- Tianhua Xu, Tianjin University, China
- Abid Yahya, Botswana International University of Science and Technology (BIUST), Botswana
- Srihari Yamanoor, Self, USA
- Chong Yen Fook, Universiti Malaysia Perlis, Malaysia
- Thaweesak Yingthawornsuk, King Mongkut's University of Technology Thonburi, Thailand
- Sumendra Yogarayan, Multimedia University (MMU), Malaysia
- Pujianto Yugopuspito, Universitas Pelita Harapan, Indonesia
- Noor Zaman, Taylor's University, Malaysia
- Qi Zhao, University of California, Los Angeles, USA

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Conference Schedule

2021 International Conference on Computer Science, Information Technology, and Electrical Engineering (ICOMITEE 2021)

eL Hotel Royale, Banyuwangi, Indonesia

Day & Date	Time	Agenda	Venue
Wednesday, October 27, 2021	07.00-08.00	Registration	Meeting ID: 846 1401 9288 Passcode: icomitee
	08.00-08.05	Indonesia National Anthem	
	08.05-08.15	Hymne University of Jember	
	08.15-08.20	Entertainment (Traditional Dance (Tari Gandrung) by UKMK Etalase Faculty of Computer Science, University of Jember)	
	08.20-08.25	Welcome Speech by Conference Chair ICOMITEE 2021 (Prof. Dr. Saiful Bukhori)	
	08.25-08.35	Welcome Speech by Regent of Banyuwangi (Hj. Ipuk Fiestiandani, S.Pd.)	
	08.35-08.45	Foreword by Representative of IEEE Indonesia Section (Dr. Ing. Wahyudi Hasbi)	
	08.45-08.55	Foreword by Representative of IEEE Computer Society Indonesia Section (Dr. Tanty Oktavia)	
	08.55-09.05	Welcoming Remarks by Rector of University of Jember (Dr. Iwan Taruna)	
	09:05-09.15	Opening Ceremonial ICOMITEE 2021 by Conference Chair	
	09.15-09.20	Praying	

	09.20-10.30	Keynote Speech 1 Prof. Md. Saidur Rahman *(Bangladesh University of Engineering and Technology, Bangladesh)* Keynote Speech Title : **"Graph Drawing"** Moderator: Drs. Antonius Cahya P., M.App. Sc., Ph.D. *(University of jember)*	
	10.30-11.30	Keynote Speech 2 Assoc. Professor. Dr. Ford Lumban Gaol *(Chair of IEEE Computer Society Indonesia Section)* Keynote Speech Title: **"The Frontiers of Artificial Intelligence (Ai) : Two sides to serve Humanity"** Moderator: Nelly Oktavia Adiwijaya, S.Si., MT. *(University of jember)*	
	11.30-12.30	Keynote Speech 3 Prof. Anton Satria Prabuwono *(King Abdulazis University, Jeddah, Saudi Arabia)* Keynote Speech Title: **"Automated Optical Inspection for Surface Mount Technology (SMT)"** Moderator: Ahmad Ari Aldino, M.Si. *(Universitas Teknokrat Indonesia)*	
	12.30-13.30	Lunch Break	
	13.30-15.45	Parallel Session	Meeting ID: 846 1401 9288 Passcode: icomitee

Thursday, October 28, 2021	08.00-12.00	Local Tour for Inperson Presenter	

Moderator Schedule

Keynote Speaker Moderator

Prof. Md. Saidur Rahman	• Drs. Antonius Cahya P., M.App. Sc., Ph.D.
Assoc. Professor. Dr. Ford Lumban Gaol	• Nelly Oktavia Adiwijaya, S.Si., MT.
Prof. Anton Satria Prabuwono	• Ahmad Ari Aldino, M.Si.

Parallel Session Moderator

Ijen Room	•Karina Nine Amalia, S.Kom., M.Kom.
Bromo Room	•Rizqi Putri Nourma Budiarti, S.T, M.T
Argopuro Room	•Ahmad Ari Aldino, M.Si.
Raung Room	•Junaedi Adi Prasetyo, S.ST., M. Sc.

Parallel Session Schedule

Wednesday, October 27th, 2021

Time Slot	Ijen Room	Bromo Room	Argopuro Room	Raung Room
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13.45-14.00	The clever ant: Using Video-based learning media to explain diagonal cuboid **Presenter: Tommy Tanu Wijaya**	Text Mining in Chat Room of Online Learning for Detection Emotion using Artificial Intelligence **Presenter: Irawan Dwi Wahyono**	Computer-aided Translation Based on Lampung Language as Low Resource Language **Presenter: Zaenal Abidin**	Implementation of Fuzzy Logic in PLC for Three-Story Elevator Control System **Presenter: Farli Rossi**
14.00-14.15	Redesigning User Interface on Halal Tourism Application with User-Centered Design Approach **Presenter: Tsani Nahdliyah**	Evaluation of IBSI Education System Use ISOIEC 9126 Quality Model: How is the Quality? **Presenter: Sindi S**	Optimal Control Model of Two Dimensional Missile Using Forward Backward Sweep Method (FBSM) **Presenter: Dinita Rahmalia**	Application Of Unmanned Aircraft Pid Control System For Roll, Pitch And Yaw Stability On Fixed Wings **Presenter: Akhmad Jayadi**

14.15-14.30	Designing An Attendance System Model for Work From Home (WFH) Employees Based on User-Centered **Presenter: Ahmad Anshari**	Exploring Usability Dimension of Smart Regency Service with Indonesian Adaptation of The System Usability Scale (SUS) and User Experience Questionnaire (UEQ) **Presenter: Aang Darmawan**	Decision Support System for Temporary Shelter Selection Using Hybrid AHP and TOPSIS **Presenter: Gayatri Dwi Santika**	Analysis of Frequency Stability with SCES's type of Virtual Inertia Control for The IEEE 9 Bus System **Presenter: Novia Putri**
14.30-14.45	Internal Social Media Acceptance in Government Organizations **Presenter: Hardini Juliarti**	LINE-based Virtual Friend Development for Borderline Personality Disorder **Presenter: Lysbeth Oey**	Sentiment Analysis Of Online Lecture Opinions On Twitter Social Media Using Naive Bayes Classifier **Presenter: Devi Damaratih**	A Study of Conveyor System with UV Light for Vegetable and Fruit Sterilization for Farmer **Presenter: Mochammad Rafi Adityawarman**
14.45-15.00	Analysis of The Effect of Promotion an Technology Acceptance Model on Purchase Interest in Tokopedia **Presenter: Auliya Isnain**	E-Government Maturity Assessment Using COBIT5 Framework in APO Domain **Presenter: Destri Hutapea**	Comparison of Market Basket Analysis to Determine Consumer Purchasing Patterns Using Fp-Growth and Apriori Algorithm **Presenter: Sanriomi Sintaro**	Mechanical Ventilator Control System Using Low-cost Pressure Sensors **Presenter: Endi Sailul Haq**
15.00-15.15	Academic Dishonesty (Cheating) In Online Examination: A Literature Review **Presenter: Raihan Tarigan**	MultiPhiLDA for Detection Irrelevant Software Requirement Specification **Presenter: Brian Darnoto**	Lung Cancer Classification in X-Ray Images Using Probabilistic Neural Network **Presenter: Tri Wulan**	BER Performance Comparison on Single versus Dual LED for Visible Light Communication **Presenter: Khalfan Nadhief Prayoga Wicaksono**

15.15-15.30	Why do People Continue using the Webinar Application? Insight in the New Normal Period **Presenter: Ryan Suryono**	EndorseGram: Interactive Visualization of Influencer Endorsement Marketplace **Presenter: Mochamad Nizar Palefi Ma'ady**	Implementation of Certainty Factor Method to Diagnose Diseases in Pineapple Plants **Presenter: Heni Sulistiani**	Blind Decryption for Preserving Privacy in the DRM System **Presenter: Antonius Prihandoko**
15.30-15.45	Digital Literacy vs Nomophobia: Which One is More Dominant in Online Learning? **Presenter: Endang Sulistiyani**	-	Implementation of PCA and KNN Algorithms in the Classification of Indonesian Medicinal Plants **Presenter: Rohmat Borman**	Combination of Modified LSB Steganography and Huffman Compression for Data Security **Presenter: Dedi Darwis**
15.45-16.00	How Affect Autonomous and Controlled Motivation using Massive Open Online Course? **Presenter: Erri Wahyu Puspitarini**	-	Color Feature Extraction of Fingernail Image based on HSV Color Space as Early Detection Risk of Diabetes Mellitus **Presenter: Ima Kurniastuti**	Detection Hand Tremor Through Each Finger Movement Based On Arduino For Parkinson's Patient **Presenter: Endi Sailul Haq**

ICOMITEE 2021 Technical Program & Abstracts

Plenary Session

09:45 Graph Drawing

Prof. Md. Saidur Rahman
(Bangladesh University of Engineering and Technology, Bangladesh)

10:45 The Frontiers of Artificial Intelligence (Ai) : Two sides to serve Humanity

Assoc. Professor. Dr. Ford Lumban Gaol
(Chair of IEEE Computer Society Indonesia Section)

11:45 Automated Optical Inspection for Surface Mount Technology (SMT)

Prof. Anton Satria Prabuwono
(King Abdulazis University, Jeddah, Saudi Arabia)

Parallel Session

Ijen Room

[13:30] E-Government Roadmap for Smart Governance: A Study from Banyuwangi Smart Village

Ita Sugiharti (University of Jember, Indonesia), Fahrobby Adnan (University of Jember, Indonesia), Beny Prasetyo (Jember University, Indonesia), Dita Shahihah (University of Jember)

Banyuwangi Smart Village as the implementation of Executive Order No. 3 of 2003 worked in several villages of Banyuwangi Regency. Kalibarukulon as one of the villages in Banyuwangi Regency has a dream to become a Smart Village. Achieving Smart Village through Smart Governance dimension can be realized with a good governance system. Creating a good governance system through the development of e-government requires strategic and systematic planning. This paper aims to translate strategic and systematic plans into e-government roadmaps. The development uses the IT-Strategic Plan framework by Richardus Eko Indrajit, adapted to current condition. This paper provides a collection of work programs approved by the Kalibarukulon Government.

[13:45] The clever ant: Using Video-based learning media to explain diagonal cuboid

Tommy Tanu Wijaya (Beijing Normal University, China)

Considering that elementary students still likes playing and watching videos, researchers made a learning video to motivate students and achieve active learning. Many videos have a connection to mathematics, and teachers can make learning videos to help students understand mathematics concepts to primary school students. This research will focus on developing learning media in the form of video. The subject of this research is polyhedron. Researchers name this video as "the clever ant" video. A unique and interesting learning video will increase the students' curiosity. This research uses the research and development method based on the 4D model. The validation process used questionnaires given to the validators. The validator are experts from China and Indonesia. The result shows that the clever and video passed the validation process with an average score of 88%. A learning video is easy to replay, which means that students can replay the video when needed. Students enjoyed watching the learning video and were seriously concentrating. Based on the interview done with the students, students did not feel that mathematics is a scary subject. This research proves that developing a learning video can be used to learn various subjects at various levels of education.

[14:00] Redesigning User Interface on Halal Tourism Application with User-Centered Design Approach

Tsani Nahdliyah (Universitas Indonesia, Indonesia), Aelisa Nailin Nabila (University of Indonesia, Indonesia), Dana Indra Sensuse (University of Indonesia, Indonesia), Ryan Randy Suryono (Universitas Teknokrat Indonesia, Indonesia), Kautsarina Kautsarina (Universitas Indonesia, Indonesia)

Halal tourism is a new phenomenon that has emerged due to the halal industry's rapid expansion, in 2021 expected to reach a value of $ 243 billion by 2021. In 2019, Global Muslim Travel Index (GMTI) reported that a Muslim-based platform is needed to support halal tourism services as one of the most critical aspects of halal tourism. One of the platforms available to support halal tourism in Indonesia is the HalalTrip application. The HalalTrip application is one of the Muslim-based applications with the highest number of users but less visible on the usage and has a low rating. To improve HalalTrip application performance, it is necessary to evaluate and improve the application. This research focused on redesigning the HalalTrip application user interface according to user needs and expectations. The evaluation process uses a quantitative method with a User Experience Questionnaire (UEQ) and open-ended questions. The user-centered design is used as an approach to redesign the user interface. The results of the redesigned user interface state that there is an increase in every aspect of UEQ and obtained a success rate value of 92% on the usability testing results.

[14:15] Designing An Attendance System Model for Work From Home (WFH) Employees Based on User-Centered

Ahmad Anshari (Universitas Indonesia, Indonesia), Sulistyo Aris Hirtranusi (Universitas Indonesia, Indonesia), Dana Indra Sensuse (University of Indonesia, Indonesia), Ryan Randy Suryono (Universitas Teknokrat Indonesia, Indonesia), Kautsarina Kautsarina (Universitas Indonesia, Indonesia)

Attendance system has evolved along with the industrial revolution that now has reached a new era. Furthermore, nowadays with the struck of COVID-19, the government issued a prohibition policy towards companies to urge their employees to work from home (WFH). Several issues have come across the Human Resources Development (HRD) manager regarding this policy. Employees' taking vacation when they are obliged to work from home and employees' faking their attendance are two of many problems regarding this policy. Hence, this study aims to design a relevant attendance system model that will overcome these problems with the integration of face recognition and geolocation through mobile platform. The study built the proposed attendance system with the approach of User-Centered Design (UCD)

methodology which consists of four research phases. The findings within the study shows that above 80% of participants are satisfied with the proposed model and are ready to implement the designed system in their organizations respectively.

[14:30] Internal Social Media Acceptance in Government Organizations

Hardini Juliarti (Universitas Indonesia, Indonesia), Candra Dwi Nugraha (Universitas Indonesia, Indonesia), Dana Indra Sensuse (University of Indonesia, Indonesia), Kautsarina Kautsarina (Universitas Indonesia, Indonesia), Ryan Randy Suryono (Universitas Teknokrat Indonesia, Indonesia)

Internal social media (ISM) has been extensively used in organizations to support communication, collaboration, and information sharing. Therefore, research about ISM in organizations also increased in recent years, but very few studies discuss ISM in government organizations. This study aims to provide an overview of ISM implementation in government organizations and to examine a proposed ISM acceptance model with the factors that influence it. The model was built by modifying the unified theory of acceptance and use of technology 2 (UTAUT 2), obtaining seven hypotheses which were tested using Structural Equation Modeling - Partial Least Square (PLS-SEM) analysis. The results show that ISM in several government organizations in Indonesia have not been used optimally and lack of user participation. They need to improve the user interface, update the content, add features that are relevant to user needs, and overcome system access problems. Then, from the seven hypotheses formulated, only two were accepted, which shows that performance expectancy and hedonic motivation have a significant positive effect on the intention to use ISM in government organizations. Furthermore, the results of this study can be used as a foundation for decision-making in ISM implementation in government organizations.

[14:45] Analysis of The Effect of Promotion an Technology Acceptance Model on Purchase Interest in Tokopedia

Auliya Rahman Isnain (Universitas Teknokrat Indonesia, Indonesia), Agung Wahyudi (Universitas Teknokrat Indonesia, Indonesia), Dina Yani (Universitas Teknokrat Indonesia, Indonesia)

In this modern era, Indonesia already has so many E-Marketplaces (Online Markets) making this e-marketplace easier for consumers to do shopping easily. One type of marketplace that is quite popular in Indonesia is Tokopedia. Tokopedia always holds sales promotions every month, thereby increasing purchase interest. This increase can be seen from the number of

monthly visits to Tokopedia, and seeing the traffic of the marketplace in Indonesia. This study uses the Technology Acceptance Model (TAM) to determine the effect of sales promotion on purchase intention. The data used in this study are primary data obtained from respondents who use Tokopedia. The results of this study that sales promotions significantly affect purchase intention, but one of the TAM components, namely perceived usefulness, has no effect on purchase intention.

[15:00] Academic Dishonesty (Cheating) In Online Examination: A Literature Review

Raihan Natigor Tarigan (Sepuluh Nopember Institute of Technology, Indonesia), Reny Nadlifatin (Institut Teknologi Sepuluh Nopember, Indonesia), Apol Pribadi Subriadi (Institut Teknologi Sepuluh Nopember, Indonesia)

Currently, it is an era that is closely related to information and communication technology. The existence of information and communication technology also has a significant impact on human life today. Many studies have shown a good effect on the use of information and communication technology currently widely applied in Education. Still, it is unfortunate that the perceived benefits are not in line with the gaps that can be a weakness in Education. One of the uses of Information and Communication Technology in Education is implementing academic evaluations conducted online. Still, this is a gap for some people to commit fraudulent actions such as Cheating when running an online assessment. This paper aims to find out what factors can influence someone to cheat during an online exam. To find out what factors can influence someone to cheat during an online exam, the researcher conducted a Literature Review from various sources that discussed Cheating in the world of Education. What factors can influence someone to cheat during an online exam that is collected from some of the literature found.

[15:15] Why do People Continue using the Webinar Application? Insight in the New Normal Period

Ryan Randy Suryono (Universitas Teknokrat Indonesia, Indonesia), Mardiana Purwaningsih (Perbanas Institute, Indonesia), Arfive Gandhi (Universitas Indonesia, Indonesia), Ekawati Marlina (Indonesian Institute of Sciences, Indonesia), Achmad Hidayanto (University of Indonesia, Indonesia), Rahmat Trialih (Brawijaya University, Indonesia & University College Cork, Ireland)

Webinars have been widely used in the education before the COVID-19 pandemic due to the application development in the face-to-face learning process. When someday the pandemic ends, will the habit of using webinar

technology also end? This study aims to examine what factors influence participants to continue using webinars during the new normal. The conceptual model was built using the Stimulus-Organism-Response (S-O-R) theory, involving 429 respondents. Their quantitative perceptions were processed using PLS-SEM assisted by Smart PLS 3.3.2 software. Factors that influence Satisfaction (SAT) and Perceived Usefulness (USE) are Perceived Enjoyment (ENJ), Perceived Ease of Use (EOU), Perceived Security (SEC), and Perceived Content Quality (QUA) while Webinar Application Continuous Intention (CONT) factor are influenced by Social Influence (INF), Satisfaction (SAT), and Perceived Usefulness (USE). Thus, the webinar application will continue to be used together with the face-to-face method, which will be opened gradually.

[15:30] Digital Literacy vs Nomophobia: Which One is More Dominant in Online Learning?

Endang Sulistiyani (Universitas Nahdlatul Ulama Surabaya, Indonesia), Sasmi Hidayatul Yulianing Tyas (Telkom Institute of Technology Jakarta, Indonesia), Rudi Susanto (University of Nahdlatul Ulama Surabaya, Indonesia)

Due to the COVID-19 pandemic, the learning system has changed to online learning. This condition makes students have to use digital devices, even with a more intense frequency. Digital literacy is known to be the key to success in online learning. While nomophobia is a threat on the other hand. Therefore, this study aims to conduct a comparative study of the level of digital literacy and nomophobia in students as participants in online learning. This study is a descriptive with a quantitative approach. The study was carried out in 3 stages, namely (1) preparation of instruments for measuring digital literacy and nomophobia, (2) data collection, and (3) measuring digital literacy and nomophobia. Respondents of this study were 234 students of University of Nahdlatul Ulama Surabaya and several other universities who are participants in online learning. The results showed that most of the respondents had high levels of digital literacy and nomophobia. There are no respondents who are not nomophobic and have a low level of digital literacy. So it can be concluded that online learning has the opportunity to increase digital literacy, but on the other hand there is also a threat of increasing nomophobia.

[15:45] How Affect Autonomous and Controlled Motivation using Massive Open Online Course?

Erri Wahyu Puspitarini (STMIK Yadika Bangil), Hari Moerti (STMIK Yadika Bangil, Indonesia), Anik Vega Vitianingsih (Universitas Dr Soetomo & Faculty of Engineering, Indonesia), Anastasia Maukar (President University, Indonesia), Fitri

Marisa (Widyagama University of Malang, Indonesia), Saiful Bukhori (Universitas Jember, Indonesia)

This Higher Education is currently facing various challenges since the Covid-19 pandemic, especially for teaching and learning activities using online learning. Massive Open Online Course (MOOC), one of the newest forms of innovation used as an online learning tool. MOOC are the most recent stage in the development of open educational resources. The inflexibility or standardization of lectures will definitely reduce the enthusiasm of students to participate in MOOC. MOOCs are part of a growing trend in higher education, but motivation from students is dwindling. This study uses the ACM (Autonomous and Controlled Motivation) model which aims to measure how much influence autonomous motivation has on students' intention to use the MOOC application, and how much influence controlled motivation has on students' intention to use the MOOC application as an online learning. Respondents in this study were higher education students who used the MOOC application. The statistical test of the ACM model was carried out using smart-PLS software to test the proposed hypothesis. The result showed that autonomous and control motivation were significant determinants of perceived behavior control.

Bromo Room

[13:30] Decision-making Support via Fuzzy Programming for Order Allocation and Production Planning: Static Case

Sutrisno Sutrisno (Universitas Diponegoro, Indonesia), Solikhin Solikhin (Diponegoro University, Indonesia), Purnawan Adi Wicaksono (Diponegoro University & Undip, Indonesia), Abdul Aziz (Diponegoro University, Indonesia)

This study aims to propose decision-making support for solving order allocation and production planning problems in which a few fuzzy parameters were considered. Only one period of observation time is discussed i.e. static case. The approach used to handle the fuzzy uncertainty was fuzzy programming where the optimal decision was calculated with the generalized reduced gradient algorithm combined with the branch and bound concept in calculating integer decisions. Furthermore, computational simulations were carried out to illustrate and evaluate the proposed model. The results showed that an optimal decision was obtained, and the proposed model performed well indicated by the optimality of the product's amount to be produced and the expected operational cost. Therefore, it was concluded that the proposed decision-making support is implementable in manufacturing companies.

[13:45] Text Mining in Chat Room of Online Learning for Detection Emotion using Artificial Intelligence

Irawan Dwi Wahyono (Universitas Negeri Malang, Indonesia), Mohd Murtadha Mohamad (Universiti Teknologi Malaysia, Malaysia), Mohd Nihra Haruzuan Bin Mohamad Said (Universiti Teknologi Malaysia, Malaysia), Khoirudin Asfani (Universitas Negeri Malang, Indonesia)

Now, in the Pandemic era, all people use online technology for all-purpose such as messenger application for all their activities. Text message is very fast to give respond but it is difficult to understand about felling or emotion people because in messenger cannot show their face. In online learning, teachers can send a text using a chat room with their students for learning but teachers cannot understand their student condition such as feelings or emotions. The problem that if students are bad emotion, they are very difficult to give them learning, especially in messenger's application, for example, chat room in online learning. The purpose of this research solves this problem by building a system that text documents in the chat rooms will process using an Artificial intelligence algorithm to know about the emotions of people in the chat room. The system uses 3 algorithms: naïve Bayes, fuzzy logic, and NPC. The system was built in existing online learning and embedded in the chat rooms in online learning. The result of testing of the system was 70% accuracy to

determine the emotion-based in a text document in the chat room of online learning

[14:00] Evaluation of IBSI Education System Use ISOIEC 9126 Quality Model: How is the Quality?

Endang Sulistiyani (Universitas Nahdlatul Ulama Surabaya, Indonesia), Sindi S (University of Nahdlatul Ulama Surabaya, Indonesia)

The purpose of this study was to measure the quality of the IBSI Education System called SIWESI. Measurements will be carried out using ISO 9126 with the characteristics of functionality, usability, efficiency, reliability, and portability. Based on the test results from two perspectives including technical and user, SIWESI has good to very good quality. In terms of functionality, 95% of SIWESI's menus function properly. In terms of efficiency, the quality is good with the score of 100 for the desktop version and 99 for the mobile version. In the reliability characteristics, it can be stated that the more virtual users, the more the number of successful request processes will increase the resulting load time. Likewise with the results of Peak RPS, the more virtual users, the better the value. Meanwhile, for AVG Response Time, the more virtual users, the smaller the value. Technically, both from the browser and device side, SIWESI is accessible and works well. Based on the user's perspective, the quality of SIWESI is very good with a score of 84.66%.

[14:15] Exploring Usability Dimension of Smart Regency Service with Indonesian Adaptation of The System Usability Scale (SUS) and User Experience Questionnaire (UEQ)

Aang Kisnu Darmawan, Dr (Madura Islamic University & Faculty of Engineering, Indonesia), Moh. Aminollah Hamzah (Universitas Islam Madura, Indonesia), Bakir Bakir (Madura Islamic University, Indonesia), Miftahul Walid (Universitas Islam Madura, Indonesia), Anwari Anwari (Madura Islamic University, Indonesia), Iwan Santosa (Universitas Trunojoyo Madura, Indonesia)

Given that Indonesia has four times the number of districts as towns, regency creation needs serious attention. However, few studies look at the life of districts from the standpoint of ICT utility governance. This study aims to explore and test the dimensions of usability in mobile-based smart regency application services. The application being tested is Sumekar Online, a mobile-based smart regency service application used in Sumenep Regency. The testing process was carried out by 10 participants, including testing using the System Usability Scale (SUS) and User Experience Questionnaire (UEQ), which had been adapted to the Indonesian context. The test results with SUS show

that mobile-based applications get a score of 77.75, which means that the Acceptability Range category is "Acceptable," the Grade Scale category is "C,"; and the Adjective Rating category is "Good." Meanwhile, the evaluation results with UEQ get a value of 1.35 with details of attractiveness is 0.96, clarity is 0.72, novelty is 0.3, stimulation is 0.62, accuracy is 0.75, and efficiency is 0.85. This study contributes by providing suggestions and recommendations so that developers and policymakers pay more attention to the factors that affect the usability dimensions of mobile-based smart regency services.

[14:30] LINE-based Virtual Friend Development for Borderline Personality Disorder

Lysbeth Venella Oey (Soegijapranata Catholic University, Indonesia), Ridwan Sanjaya (Soegijapranata Catholic University, Indonesia), Wibhowo Christin (Soegijapranata Catholic University, Indonesia)

During the COVID-19 pandemic situation, the Indonesian government has declared various restrictions on human daily activities to minimize physical contact between people and reduce the transmission of COVID-19. After a very long time, these restrictions may be felt like "eating a simalakama fruit" as not only does it cause a positive result by breaking the chain of virus transmission between humans, but the restriction may also decrease the financial stability and increase people's level of stress. Meanwhile, it is known that Borderline Personality Disorder (BPD) as well as other mental health disorders, may happen to people with high fragility to stress. The original purpose of the development of LINE chatbot discussed in this paper, named "Sovi Lau" which is an acronym that stands for "Sobat Virtual Anti Galau" or "Anti-Stress Virtual Friend" is mainly to make a chatbot that can act as a friend who is always able to talk with and to discuss with. People suffering from BPD can also use it whenever they need. The use of LINE Messenger and Program-O is found to be the simplest way to develop a chatbot that can be used by psychologists to provide a good communication for people suffering from BPD.

[14:45] E-Government Maturity Assessment Using COBIT5 Framework in APO Domain

Destri Yanti Hutapea (Universitas Indonesia, Indonesia), Randy Brahmantara (Universitas Indonesia, Indonesia), Dana Indra Sensuse (University of Indonesia, Indonesia)

Public service implementers must be able to balance technological progress with the demands in improving the quality of public services. In supporting public service, organizations must be able to optimize the transformation of communication and information technology in e-government. This

organization is a non-ministerial government institution that has one of the main tasks of carrying out public services to users. Purpose of the assessment is to ensure consistency in the achievement solutions and services as a quality of requirement for the organization to fulfil stakeholder needs. The evaluation is using cobit5 in the APO11 domain concerning quality management where it focuses on identifying the best way in IT that can contribute to the achievement of an organization business goals. This research is using the COBIT5 self-assessment method to produce manage quality level for the implementation of e-government in organization. Result of the study shows the organization is at level 3, namely Established with an average value of 82.6%, which means the public service process in e-government in organization has planning, monitoring, and also defined process to achieve organization goals.

[15:00] MultiPhiLDA for Detection Irrelevant Software Requirement Specification

Brian Rizqi Paradisiaca Darnoto (Sepuluh Nopember Institute of Technology, Indonesia), Daniel Siahaan (Institut teknologi Sepuluh Nopember, Indonesia)

Software Requirement Specification (SRS) is the most important artifact in the software development process. Many quality-related SRS in software development is full of ineffective information. Seven common errors are causing this weakness defined as "The Seven Sins of Specifier". Noise is one of the seven sins of the specifier divided into irrelevant needs and non-requirement statements. It will appear When a software developer adds some irrelevant information to the overall software requirement. Some studies detect noise in SRS documents, but the results are less than maximum because they cannot distinguish between actors and actions on the statement of need. The requirement statement contains two important parts, namely actors and actions. This study proposes the modification of LDA under the name MultiPhiLDA. MultiPhiLDA detects irrelevant requirement statements on SRS. To detect irrelevant requirement statements on SRS, MultiPhiLDA will identify SRS to find actors and actions. The expected result of MultiPhiLDA is to assist the analyst system in detecting irrelevant requirement statements on SRS to obtain good quality software.

[15:15] EndorseGram: Interactive Visualization of Influencer Endorsement Marketplace

Mochamad Nizar Palefi Ma'ady (Institut Teknologi Telkom Surabaya, Indonesia), Shinta Amalia Kusuma Wardhani (Institut Teknologi Sepuluh Nopember, Indonesia)

Trend of competitive online commerce tends to be escalated by the power of influencer endorsements. Many studies agreed that influencers, as the key

opinion leader, can 'naturally' persuade customers' intention to buy a product in terms of social commerce. Therefore, decision-making in choosing the most suitable influencer is an essential part of business analysis, especially for surviving small and medium-sized enterprises (SMEs) from the novel-coronavirus (Covid-19) pandemic crisis. Effective visual analysis of influencer endorsements is needed, as it has a significant impact on SMEs' finances. In this paper, we present EndorseGram, an interactive visualization system that could visually analyze a large collection of online influencer data on Instagram. The system is built on two-dimensional visualization by establishing a radial stacked bar chart, zoomable sunburst, and radial dendogram. The data was collected from SociaBuzz, a marketplace site for influencers in Indonesia. We applied the system into the influencer marketplace in Jember and Surabaya for convenience purposes. Aside from data visualization on influencer endorsements, our system could also be applied to visually analyze models or make-up artists on other marketplaces.

Argopuro Room

[13:30] Prediction of Yuan to IDR Exchange Rate using General Regression Neural Network

Evi Febrion Rahayuningtyas (Universitas Muhammadiyah Malang, Indonesia), Galih Wasis Wicaksono (Universitas Muhammadiyah Malang, Indonesia), Didih Rizki Chandranegara (Universitas Muhammadiyah Malang, Indonesia)

The exchange rate is the value or price of a currency in front of other currencies divided into selling rates and buying rates. The differences and alteration of exchange rates are caused by interest rates, inflation, and many other factors. The General Regression Neural Network method is applied to build a prediction system for the Yuan to IDR exchange rate, using the input to determine the output. The dataset is taken from the Bank Indonesia website with 191 records after pre-processing. Based on the resulting test, we found that the MSE score is 106.13, the RMSE score is 10.30, and the MAE score is 8.73. The model can find and recognize training data patterns to provide excellent data output with the results given.

[13:45] Computer-aided Translation Based on Lampung Language as Low Resource Language

Zaenal Abidin (Universitas Teknokrat Indonesia, Indonesia), Permata Permata (University of Teknokrat, Indonesia), Rohmat Borman (Universitas Teknokrat Indonesia, Indonesia), Utoro Ardiyatno (Universitas Teknokrat Indonesia, Indonesia), Farli Rossi (Universitas Teknokrat Indonesia & Universiti Kebangsaan Malaysia, Indonesia), Yessi Jusman (Universitas Muhammadiyah Yogyakarta, Indonesia)

The dialect of api is one of the Lampung dialects. Students, from elementary school to high school, learn the Lampung language as an effort to preserve the local language. For immigrant students who learn Lampung dialect of api, they should use the Lampung language dictionary to help understand the Lampung language. Using the dictionary manually and repeatedly is ineffective and tedious. This study aims to build an initial model of computer-based Lampung language sentence translator machine. The main purpose of the Lampung language sentence translator machine is to help students learn to understand Lampung language sentences with the help of computers automatically. The Lampung language sentence translator machine works by

utilizing the Lampung language dictionary. This study made two contributions or novelty. First, dictionary-based Lampung sentence translator machine and dictionary-based Lampung sentence translator machine with additional stemming and post-editing techniques. The Lampung sentence translator machine was tested using 50 Lampung sentences. Translation results were measured by the bilingual evaluation understudy (BLEU) algorithm. In the dictionary-based Lampung sentence translator machine, the translation accuracy is 46.50%, while the dictionary-based Lampung sentence translation machine with additional stemming and post-editing techniques obtains an accuracy of 58.06%.

[14:00] Optimal Control Model of Two Dimensional Missile Using Forward Backward Sweep Method (FBSM)

Teguh Herlambang (University of Nahdlatul Ulama Surabaya & PT Indo Dynamisc Technology, Indonesia), Dinita Rahmalia (Universitas Islam Darul Ulum Lamongan, Indonesia), Fajar Annas Susanto (Universitas Nahdlatul Ulama Surabaya (UNUSA), Indonesia), Firman Yudianto (Universitas Nahdlatul Ulama Surabaya, Indonesia), Denis Fidita Karya (Universitas Nahdlatul Ulama Surabaya, Indonesia), Okol Sri Suharyo (Indonesian Naval Technology College STTAL, Indonesia)

Indonesia is an archipelagic and maritime country, so it is imperative to improve the country's aerospace technology, that is, the main equipment of defence system to defend the state sovereignty. One example is a missile that can be remotely controlled. Missiles are military rocket weapons with automatic control system to trace targets or follow direction. One of the missile technologies currently being developed is the optimal missile control. The application of optimal control by Forward Backward Sweep Method (FBSM) method can be used for missile model consisting of flying angle, velocity, horizontal position, and altitude with force as control. FBSM uses a state variable and an adjoint variablein in its computation. Based on the simulation results, the comparison between the missile model with control and without control are obtained. The flying angle with control produces smaller deviation than the flying angle without control. The altitude with control produces increasing graph while the altitude without control produces decreasing graph.

[14:15] Decision Support System for Temporary Shelter Selection Using Hybrid AHP and TOPSIS

Gayatri Dwi Santika (Jember University, Indonesia), Saiful Bukhori (Universitas Jember, Indonesia), Bayhaqqi Bayhaqqi

(Universitas Jember, Indonesia), Dewi Reformasi Santoso (University of Jember, Indonesia)

Waste that is generated will go into the first processing site, namely the Temporary Shelter - Tempat Pembuangan Sampah Sementara (TPSS). There are many considerations for choosing the best location TPSS that very important for supporting the collection of waste that will be transported to final disposal. The Jember Regency Environmental Service is an agency in charge of waste management, including the selection of TPSS locations. In its application, the selection of TPSS often results in human error. In addition, there is no standardized assessment system in the TPSS selection process. In this research, conduct the Decision support system to process of selecting the best TPSS location recommendation using hybrid method of AHP and TOPSIS. AHP is used to determine the weight of the criteria and TOPSIS is used for the selection process for TPSS candidates shown that feasible.

[14:30] Sentiment Analysis Of Online Lecture Opinions On Twitter Social Media Using Naive Bayes Classifier

Devi Ajeng Damaratih (Universitas Jember, Indonesia)

Sentiment analysis is a depiction of polarity in a text or word. Sentiment analysis is a form of expression of an individual or group in a particular problem. Sentiment analysis basically works to group the text in a sentence or document into positive and negative forms. The Naïve Bayes Classifier is a simple probabilistic classification method that calculates a set of probabilities by adding up the frequencies and combination of values from a given dataset. In this study, the classification process is divided into two classes, namely positive and negative. From a dataset of 1004, the results obtained accuracy of 62% with 2 scenarios, namely 70:30 and 80:20.

[14:45] Comparison of Market Basket Analysis to Determine Consumer Purchasing Patterns Using Fp-Growth and Apriori Algorithm

Ahmad Ari Aldino (Universitas Teknokrat Indonesia, Indonesia), Evi Pratiwi (Univesitas Teknokrat Indonesia, Indonesia), Setiawansyah Setiawansyah (Universitas Teknokrat Indonesia, Indonesia), Sanriomi Sintaro (Univesitas Teknokrat Indonesia, Indonesia), Ade Dwi Putra (Universitas Teknokrat Indonesia, Indonesia)

The development of technology in the field of business grows rapidly day by day. The use of technology in business can help company deploying best business strategies to compete with others. Companies can take advantage of sales data to discover more information that can help them make decisions. Using data mining approach, companies can process transaction data in order

to find out consumer buying patterns. In this paper, the authors implement the association rules mining or often referred to as Market Basket Analysis for transaction data processing using RapidMiner by comparing FP-Growth and Apriori algorithm. The results of this study from 1641 transaction rows data, with minimum support of 0.09 and confidence of 0.9, is that the Fp-Growth needs 6 seconds to produce 19 rules and forms a combination of 3 itemset with a rule strength of 112.66%. and an accuracy of 217%. While the Apriori 30 second algorithm produces 6 rules and forms a combination of 3 items with a rule strength of 52.47% and an accuracy of 46%. From the results of the comparison of algorithms, it can be concluded that the Fp-Growth algorithm is better than the Apriori algorithm.

[15:00] Lung Cancer Classification in X-Ray Images Using Probabilistic Neural Network

Tri Deviasari Wulan (Universitas Nahdlatul Ulama Surabaya, Indonesia), Ima Kurniastuti (University of Nahdlatul Ulama Surabaya & Unusa, Indonesia), Paramitha Nerisafitra (Universitas Negeri Surabaya, Indonesia)

Most hospitals and clinics use x-ray for diagnosis lung disease because the price is relatively cheaper than other lung diagnostic tools. In this research, the chest x-ray image is used as input to the program that consist of two categories such as lung cancer and healthy lung. Categorization images are done by a doctor. The research aimed to classify the X-ray image of the lungs between lung cancer and healthy lung. There are two main stages in this research, namely image processing and classification using a probabilistic neural network. The first step of image processing is preprocessing such as cropping, resizing, thresholding, and median filter. The next step is feature extraction using Haar wavelet transform. The feature of energy and coefficients of each subband produced by Haar wavelet transform is used as input in the classification process. The classification process used a Probabilistic Neural Network (PNN) method to distinguish between lung cancer and healthy lung. The training data used PNN show that all x-ray images could be correctly classified between lung cancer and healthy lung. While test results from PNN using new data obtained at 80 % accuracy rate in detecting abnormalities of the X-ray image of the lungs.

[15:15] Implementation of Certainty Factor Method to Diagnose Diseases in Pineapple Plants

Heni Sulistiani (Universitas Teknokrat Indonesia, Indonesia), Debby Alita (Universitas Teknokrat Indonesia, Indonesia), Ikbal Yasin (Universitas Teknokrat Indonesia, Indonesia), Fikri

Hamidy (Universitas Teknokrat Indonesia, Indonesia), Ditta Adriani (Universitas Teknokrat Indonesia, Indonesia)

Indonesia is one of the largest pineapple-producing countries in the world which is ranked 9th in the world, with a total annual production of around 1,396,153 tons. In the process of planting pineapples, there are opportunities for pests and diseases that can cause a decrease in the quality of pineapples. It can even cause crop failure which is detrimental to farmers. For this reason, this research will implement the certainty factor method to diagnose diseases in pineapple plants. So that pineapple plant diseases can be identified early and can be handled properly, so that the pineapple fruit produced has good quality. Based on the results of the prediction accuracy test that has been done, an accuracy value of 80% is obtained.

[15:30] Implementation of PCA and KNN Algorithms in the Classification of Indonesian Medicinal Plants

Rohmat Borman (Universitas Teknokrat Indonesia, Indonesia), Riduwan Napianto (Universitas Teknokrat Indonesia, Indonesia), Nurhasan Nugroho (Universitas Bina Bangsa, United Kingdom (Great Britain)), Donaya Pasha (Universitas Teknokrat Indonesia, Indonesia), Yuri Rahmanto (Universitas Teknokrat Indonesia, Indonesia), Yohanes Yudoutomo (Universitas Teknokrat Indonesia, Indonesia)

Maintaining and increasing body immunity in the midst of the Covid-19 pandemic needs to be done so that the risk of contracting this disease can be reduced. One way to increase immunity is to consume herbs or medicinal plants. Since ancient times, plants have been used as medicine and are still used today. Medicinal plants are a wide range of plants that are known to have great properties in assisting with keeping up with wellbeing and treat an infection. But many people do not know the characteristics and forms of these plants. This study performs image classification of Indonesian medicinal plants using a combination of PCA and CNN. PCA is used as a feature extraction based on the characteristics formed from each spatial property and is utilized for grouping of items dependent on learning information that has the nearest distance to the object. This investigation obtained the results that the image classification of the application of PCA and KNN on Indonesian medicinal plants with an accuracy of 88.67%.

[15:45] Color Feature Extraction of Fingernail Image based on HSV Color Space as Early Detection Risk of Diabetes Mellitus

Ima Kurniastuti (University of Nahdlatul Ulama Surabaya & Unusa, Indonesia), Tri Deviasari Wulan (Universitas Nahdlatul

Ulama Surabaya, Indonesia), Ary Andini (University of Nahdlatul Ulama Surabaya, Indonesia)

Fingernail image color used to health diagnose, such as detecting pancreatic disease which was one indicator of diabetes mellitus. This paper used fingernail images as early detection risk of diabetes mellitus. The aim of the study was to extract color feature of fingernail images according to HSV color space. Data of research was fingernail image that divided into three categories such as normal, prediabetes, and diabetes data according to blood glucose level test. Data is cropped and extracted each component of HSV color space. Analysis data is applied using grouping frequency distribution. The results showed that among component of HSV, component hue and value overlapping between prediabetes and diabetes data. Component saturation has different range number in normal, prediabetes and diabetes data. From these results, it can be concluded that the HSV channel can be used as one of feature on fingernail image as early detection risk of diabetes mellitus.

Raung Room

[13:30] Application The Method Direct Effect Piezoelectric (DEP) Using Vibrator Engine Diesel

Bambang Kaloko (Jember University, Indonesia), Widjonarko Widjonarko (Universitas Jember, Indonesia), Zulfikar Febrian (Jember University, Indonesia)

In this study using the piezoelectric direct effect (DEP) method. The existence of this method can be used to generate voltages and currents from the piezoelectric. From these data, it can be divided between series and parallel circuits to carry out the battery charging process using a diesel engine vibration. The results of this experiment, namely by using a series arrangement will get a good voltage up to a value of 10.5 volts with a voltage drop of about 3 volts so that the resulting current is about 30 mA. When using a parallel circuit the resulting voltage is less than 0.8 volts so that the battery is not filled. The estimated time taken for the research process is 50 minutes with an average power output of around 90.91 mW so that the value of the milliampere hour is about 19.38 mAh.

[13:45] Implementation of Fuzzy Logic in PLC for Three-Story Elevator Control System

Farli Rossi (Universitas Teknokrat Indonesia & Universiti Kebangsaan Malaysia, Indonesia), Akhmad Jayadi (Universitas Teknokrat Indonesia, Indonesia), Jaka Persada Sembiring (Universitas Teknokrat Indonesia, Indonesia), Novia U Putri, N (Univeritas Teknokrat Indonesia, Indonesia)

Currently, the existing elevator uses a system that provides an immediate response to the input received without first checking the input to operate. This research was conducted to minimize the movement of the elevator. In addition, as a form of effort to reduce the spread of Covid 19, the touchless button is introduced to the elevator operating system. The provision of the fuzzy logic method will make the elevator system manage the input given to determine priorities in the elevator movement. There are several input variables in the fuzzy method: position, distance, direction, and elevator capacity. Fuzzy logic will manage these variables, which are then obtained in the form of elevator movement priority. PLC used in this study is PLC Outseal Mega V1.1 as a controller on the elevator. The input uses a proximity infrared sensor so that it can provide input without touch. The use of functions on the PLC such as comparators, timers, and counters can realize an elevator system based on fuzzy logic calculations. The output used is a relay that will operate

the DC motor. The proposed method realizes an innovative elevator operating system to stop the spread of covid 19.

[14:00] Application Of Unmanned Aircraft Pid Control System For Roll, Pitch And Yaw Stability On Fixed Wings

Akhmad Jayadi (Universitas Teknokrat Indonesia, Indonesia), Try Susanto, ts (Indonesia & Universitas Teknokrat Indonesia, Indonesia), Farli Rossi (Universitas Teknokrat Indonesia & Universiti Kebangsaan Malaysia, Indonesia), Afrizal Hamdhi (Universitas Teknokrat Indonesia, Indonesia), Muhammad Bayu Setiawan (Universitas Teknokrat Indonesia, Indonesia), Jaka Persada Sembiring (Universitas Teknokrat Indonesia, Indonesia)

Unmanned Aerial Vehicle (UAV) is an unmanned aircraft that is currently undergoing many developments in the non-military or military field which is widely used as a tool to assist human work in mapping missions of a region until it is used as a military weapon of a country. The flying mode on the UAV itself can be controlled in 2 ways, namely manually and flying independently which is controlled by a system embedded in the aircraft. As for some problems or disturbances that occur when the aircraft is maneuvering in the air, namely the loss of stability while in the air. To overcome the occurrence of loss of stability on the aircraft when flying in the air, in this study using a PID method that is able to keep the vehicle or aircraft stable. PID is a combination of 3 controls, namely Proptional Control, Integral Control, and Derifative Control which is expected from the three combined controls to be able to maintain the flight attitude of the vehicle when maneuvering in the air, especially the stability of the vehicle when flying in the air.

[14:15] Analysis of Frequency Stability with SCES's type of Virtual Inertia Control for The IEEE 9 Bus System

Novia U Putri, N (Univeritas Teknokrat Indonesia, Indonesia), Farli Rossi (Universitas Teknokrat Indonesia & Universiti Kebangsaan Malaysia, Indonesia), Akhmad Jayadi (Universitas Teknokrat Indonesia, Indonesia), Jaka Persada Sembiring (Universitas Teknokrat Indonesia, Indonesia), Haekal Maulana (Univeritas Teknokrat Indonesia, Indonesia)

Distributed Energy Resources (DER) is an alternative energy that can supply a promising future of electric power. However, DER like a PV doesn't have inertia when connected to the grid which causes frequency oscillations so that the load is released on the system. To overcome this, we need the concept of virtual inertia control (VIC) type Super Capacitive Energy Storage (SCES) on the

DER. This paper presents the effect of frequency with the addition of SCES type VIC in the mathematical modeling of the IEEE 9 Bus in two areas. The results show that there is a significant change in frequency when the SCES type VIC is added in a short time when the frequency oscillation occurs. In addition, the SCES type VIC can provide an appropriate solution in maintaining frequency stability in the power system.

[14:30] A Study of Conveyor System with UV Light for Vegetable and Fruit Sterilization for Farmer

Farah Zakiyah Rahmanti (Institut Teknologi Telkom Surabaya, Indonesia), Bernadus Anggo Seno Aji (Institut Teknologi Telkom Surabaya, Indonesia), Arliyanti Nurdin (Institut Teknologi Telkom Surabaya, Indonesia), Wiranti Maharani (Institut Teknologi Telkom Surabaya, Indonesia), Riska Aprilia (Institut Teknologi Telkom Surabaya, Indonesia), Mochammad Rafi Adityawarman (Institut Teknologi Telkom Surabaya, Indonesia)

The common packing of vegetable or fruit is handled manually by farmers, include tomato, chili pepper, mustard greens, and many more. Vegetable or fruit products usually use water to remove dirt on theirs surface. There is no sterilization process for harvested products under the current pandemic situation and condition. Therefore, a tool that can perform vegetable or fruit sterilization using UV light waves is needed. This tool consists of UV light chamber, conveyor belt, and omron HMI. The UV light chamber is used to kill germs, bacteria, and viruses on vegetable or fruit surface especially during the current pandemic. The conveyor belt is used to facilitate the movement of vegetables and fruits. This tool can accommodate a certain number of vegetables or fruit. The omron HMI is used to display user interface which it's available widgets to manage it, such as turn on or turn off the conveyor and turn on or off the UV light. This research aims to create a UV light-based sterilization prototype with conveyor system that can help the vegetable or fruit farmers. This tool can be used by farmers to maintain the quality of the harvested products before packaging and marketing to consumers.

[14:45] Mechanical Ventilator Control System Using Low-cost Pressure Sensors

Endi Sailul Haq (Banyuwangi State Polytechnic, Indonesia), Devit Suwardiyanto (State Polytechnic of Banyuwangi, Indonesia), Eka Mistiko Rini (Politeknik Negeri Banyuwangi, Indonesia), Sepyan Purnama Kristanto (Politeknik Negeri

Banyuwangi, Indonesia), Riyanto Sigit (Politeknik Elektronika Negeri Surabaya, Indonesia)

The increasingly active cases of people with the COVID- 19 viruses have reached a very worrying level in most countries globally. The availability of ventilators in hospitals is one factor that increases the number of deaths in Indonesia. In this study, we present a control system on a mechanical ventilator using an inexpensive pressure sensor to control pressure, flow rate, and volume during the process of inspiration and expiration. The implemented method uses the venturi meter concept by comparing two air pressure sensors flowed by the Ambu bag. The control system on this ventilator uses a microcontroller and MPX5050DP sensor. The system tries to maintain the PEEP value of 5 cmH2O, and the feedback obtained ranges from 2.7-5.16 cmH2O. At the same time, the expected flowrate value of 55 L/min can be maintained at a value of 53.9 - 59.5 L/min. The tidal volume, which functions as a limiter for inspiration and expiration, is set at a value of 400 ml; the feedback given by the sensor varies between 416 ml - 436 ml. Nevertheless, on the other hand, this system needs to be developed further because there are problems with sensor precision.

[15:00] BER Performance Comparison on Single versus Dual LED for Visible Light Communication

Khalfan Nadhief Prayoga Wicaksono (Universitas Indonesia, Indonesia), Catur Apriono (Universitas Indonesia, Indonesia)

A visible light communication (VLC) system can consist of an LED as a transmitter, a photodiode as a receiver, and a microcontroller to process the information. This paper study an On-Off Keying modulation technique and a Non-Return to Zero coding to encode the information by considering the Bit Error Rate (BER) parameter for the performance indicator in a simple VLC system with single and dual-LED. The results of system measurements with more LEDs turned out to have a relatively better BER value performance. The measurement of the BER value in a single LED element and dual-LED elements at a transmission rate of 100 bps and distance of 10 cm, respectively, are 0.3302 and 0 (perfect). The system using more LEDs also results in an effective information transmission distance that more than doubles when adding system LED components at 100 bps and 1 kbps data rates. This result can become a basis for optimizing the VLC system performance in future research.

[15:15] Blind Decryption for Preserving Privacy in the DRM System

Antonius Cahya Prihandoko (University of Jember, Indonesia), Hossein Ghodosi (James Cook University, Australia)

This paper addresses the user's privacy problem in the DRM system. Focusing on achieving optimal security for content provider, DRM system often neglect

user's privacy. We propose solutions to this problem in a new perspective: providing balance protection on privacy and security. Preserving user's privacy is approached by minimizing user's data acquisition. The implementation of this privacy protection has to be controlled so that the security of the content provider is preserved. All solutions presented in this paper are based on the blind decryption scheme. To demonstrate the advantages of a blind decryption based solution, we also compared it to an anonymous cash scheme.

[15:30] Combination of Modified LSB Steganography and Huffman Compression for Data Security

Dedi Darwis (Universitas Teknokrat Indonesia, Indonesia), Adhie Thyo Priandika (Universitas Teknokrat Indonesia, Indonesia), Ade Surahman (Universitas Teknokrat Indonesia & UTI, Indonesia), A. Ferico Pasaribu (Universitas Teknokrat Indonesia, Indonesia), Akmal Junaidi (Universitas Lampung, Indonesia), Wamiliana Wamiliana (Universitas Lampung, Indonesia)

This paper was carried out on the basis of the need for data security on digital media in the form of methods that can help secure confidential data, so that confidential data can only be read by the desired person and to anticipate that the data is not read by unauthorized persons. This paper suggests the use of steganography techniques in securing messages, where confidential messages will be inserted into the cover image. The method in this paper uses a combination of two methods, namely the Huffman method for data compression and the Least Significant Bit (LSB) method as a method in Steganography. The Huffman method is used to compress the data before it is inserted into the cover image so that it can reduce the size of the data to be inserted, and the resulting stego image does not change significantly. The results of the experiments carried out, message insertion without using Huffman compression, resulted in an average MSE value of 1.25 and an average PSNR value of 42.35 . Meanwhile, the results of the combination of LSB and Huffman compression methods can produce an average MSE value of 0.37 and an average PSNR value of 53.96.

[15:45] Detection Hand Tremor Through Each Finger Movement Based On Arduino For Parkinson's Patient

Eka Mistiko Rini (Politeknik Negeri Banyuwangi, Indonesia), Endi Sailul Haq (Banyuwangi State Polytechnic, Indonesia)

Parkinson's disease, which is often characterized by tremors in a person's body, indicates that there has been a decline in brain function. However, not all the appearance of tremor symptoms can be classified as someone suffering

from Parkinson's disease. The characteristics of Parkinson's disease vary widely, one of which is resting tremor, rhythmic vibration of 4 to 6 Hz in the fingers, arms, and even in the legs. This study proved that a smart glove could measure and monitor resting tremors in the fingers. Five MPU6050 accelerometer sensors are placed on each fingertip. An Arduino microcontroller processes raw data into frequency values and sends it to a mobile application via Bluetooth communication. The device was tested on the right hands of several healthy people and patients with Parkinson's disease. The results showed that the built device could identify tremors in each finger and convert the tremor value into frequency. Based on tremor reading data from several patients, it was found that the index finger always has a significantly higher frequency value which theoretically means the index finger has a more significant relationship with the brain than the other fingers. However, further research is needed to prove it.