ISBN: 978-1-6654-8837-2

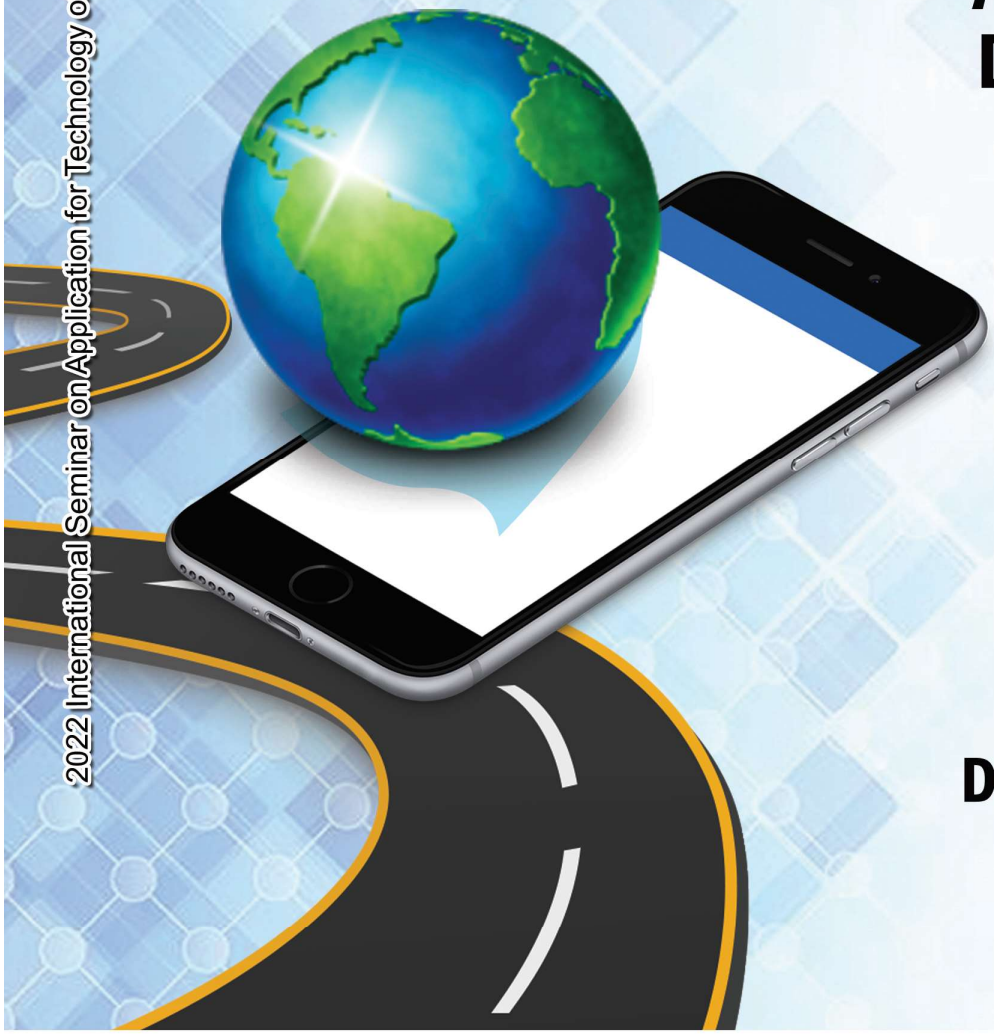
isemantic
International Seminar on Application for Technology of Information and Communication

UNIVERSITAS DIAN NUSWANTORO
UDINUS
SEMARANG

PROCEEDING

2022 International Seminar on Application for Technology of Information and Communication (iSemantic)

"Technology 4.0 for Smart Ecosystem: A New Way of Doing Digital Business"



17 - 18 September 2022

Universitas Dian Nuswantoro Semarang

IEEE Universitas Dian Nuswantoro Student Branch
IEEE INDONESIA SECTION
IEEE PES Power & Energy Society® INDONESIA
IES The IEEE Industrial Electronics Society

Organized by: LPPM UDINUS
Computer Science Faculty
Engineering Faculty

COPYRIGHT

2022 International Seminar on Application for Technology of Information and Communication (iSemantic)

Copyright and Reprint Permission: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923. For reprint or republication permission, email to IEEE Copyrights Manager at pubs-permissions@ieee.org.
All rights reserved. Copyright©2022 by IEEE.

ISBN: 978-1-6654-8837-2
IEEE Part Number: CFP22CUE-PRT

PROCEEDINGS

Technology 4.0 for Smart Ecosystem: A New Way of Doing Digital Business

ISEMANTIC 2022

7th International Seminar on Application for Technology of Information and Communication

September 17th – 18th, 2022
Universitas Dian Nuswantoro
Semarang, Indonesia

ISBN: 978-1-6654-8837-2
IEEE Catalog Number: CFP22CUE-PRT

PROCEEDINGS

2022 International Seminar on Application for Technology of Information and Communication (iSemantic)

Technology 4.0 for Smart Ecosystem: A New Way of Doing Digital Business

September 17th – 18th, 2022
Universitas Dian Nuswantoro
Semarang, Indonesia

ISBN: 978-1-6654-8837-2
IEEE Part Number: CFP22CUE-PRT

Table Of Contents

Greetings from Chair ii
Welcome Speech from IEEE Indonesia Section iv
Welcome Speech from IEEE Power & Energy Society vi
Welcome Speech from Vice Rector vii
Committee ix
General Information xi
Keynote Speaker 1 xii
Keynote Speaker 2 xiii
Keynote Speaker 3 xiv
Keynote Speaker 4 xv
Paper List xvi
Proceedings ..... 1 - 505

Greetings from Chair

Dr. Eng. Farrikh Alzami, M.Kom
Chair of iSemantic 2022, Universitas Dian Nuswantoro

Bismillahirrohmanirrohim

Assalamu'alaikum wr. wb

Good morning all authors, participants and honorable guests.

The distinguished Rector of Universitas Dian Nuswantoro, Prof. Dr. Ir. Edi Noersasongko, M.Kom;

The distinguished Representative of IEEE Indonesian Section, Dr. Ing. Wahyudi Hasbi as Chair, IEEE Indonesia Section;

The distinguished Representative of IEEE Power & Energy Society as financial sponsor of iSemantic 2022, Prof. Ir. Arif Nur Afandi, Ph.D as Chair, IEEE Power & Energy Society;

Dearest honorable guests and all representatives from universities and other institutions;

The distinguished Keynote Speakers and Dearest authors and participants for today's webinar conference.

I am pleased to welcome you to the webinar, on International Conference to discuss the scope of Application for Technology of Information and Communication.

I am highly honored to take this opportunity, on behalf of all committee and organizer, to welcome all of you today to this 7th International Seminar on Application for Technology of Information and Communication (iSemantic 2022)

The iSemantic 2022 international conference will face big challenges, because it is still in a pandemic period, and this does not create an obstacle for science to continue to grow. Another challenge is the quality of research. The standard of research in iSemantic 2022 is the best research. All thanks to supporting from IEEE Indonesia Section and IEEE Power & Energy Society as financial sponsor and the hard work of the iSemantic 2022 committee to make this happen.

Last year, we have 76 papers accepted, out of 148 submitted papers, from 7 different countries including, United Arab Emirates, Taiwan, USA, Iraq, Ireland, Malaysia and Indonesia All the 76 papers presented last year have been successfully published in IEEE Xplore and indexed by SCOPUS.

And now with new topic “Technology 4.0 for Smart Ecosystem: A New Way of Doing Digital Business”, there are 88 papers accepted, out of 150 submitted papers from 13 different countries including, India, Taiwan, Bangladesh, China, Uni Arab Emirates, Philippines, South Africa, Australia, United States of America, Iraq, Malaysia, Rwanda and Indonesia and they are ready to be presented by the authors in the conference today.

It is also my honor today to have four great persons who have agreed to be the Keynote Speakers for this webinar. The distinguished 4 persons are as follows:

1. Dr. Shay Bahramirad, the Vice President Engineering and Smart Grid ComEd (Oakbrook Terrace, IL)
2. Prof. Mohd. Faizal Bin Abdollah, from Associate Professor at Faculty of Information and Communication Technology University Teknikal Malaysia Melaka
3. Dr. Guruh Fajar Shiddik, M.CS, Vice Rector from Universitas Dian Nuswantoro Semarang
4. Celia Shahnaz Ph.D, IEEE WIE Committee Chair-Elect and Professor, Department of EEE, BUET, Bangladesh

Therefore, I would like to thank all the organizers, supporters, and organizing committee members of iSemantic 2022 who have made this conference happen. I believe that without their support and hard work, iSemantic 2022 in COVID-19 pandemic would not have come true.

I believe that by participating in this webinar, together, let us accelerate the exchange of ideas, scaling-up of good practices and make collaboration together.

We do hope that in this webinar iSemantic is also going to be a great success like the one last year, and we request for your support to make this event a memorable and successful one.

Thank you for your participation and enjoy the series of webinar iSemantic event.

Wassalamualaikum wr. wb

Welcome Speech from IEEE Indonesia Section

Ir. Linawati, M.Eng.Sc., Ph.D.
Secretary, IEEE Indonesia Section

Dear Distinguished Guests, Colleagues, researchers, professionals, ladies, and gentlemen.

A prosperous and warm greeting.

First of all, let me thank to honorable rector of Universitas Dian Nuswantoro, Prof. Dr. Edi Noersasongko, M., and his representative; Chair of IEEE Power and Energy Society Prof. Afandi; Dr. Farih Al Zami as General Chair of this conference, thank you for inviting me to give the opening of this conference and the honorable; Dr. Saibah Ramirat, Dr. Guruh Fajar Shiddik, and Prof. Mohammad Faisal Bin and special for my close friend, Prof. Dr. Celia Shanasz, Ph.D. as speaker of this conference, as well as presenter and participants of the conference.

As well as a presenter and participants of this conference. On behalf of the chair of the IEEE Indonesia section, Bapak Dr. Wahyudi Hasbi, I'm pleased to welcome you to the iSemantic 2022.

We are glad that the situation is getting better because the pandemic now can be controlled. However, the conference is still held as a virtual conference because we're still facing unpredictable situations. This event activity tends to enrich knowledge, about the lattice issue, opinion, bright ideas of student, researcher and Academic. A new innovation in technology for future energy especially in the information and communication technology. That is the theme of this conference. iSemantic 2022 will encourage discussion and hope to inspire participants from a variety of things to start a collaboration within and across disciplines for the advancement of science. Session will also be important scientific progress and highlight the impact of Science and Technology. We hope you will have a productive and enjoyable time at this special conference. Honorable guests, keynote speaker, ladies and gentlemen, IEEE has over 400,000 members in more than 160 countries and more than 170,000 student members. It has the largest student members and a professional community, and let me explain about the IEEE Indonesia section briefly. As the section as one of the regular organization units of IEEE, IEEE Indonesia section was founded in 1988 and its development over the past 34 years. IEEE Indonesia section has contributed significantly in various activities that encourage the role of Science and Technology for Humanity in Indonesia, IEEE Indonesia together with volunteer members. All stakeholders have produced various activities by supporting more than 20,000 IEEE conference publications and more than 260 IEEE journals in Indonesia. IEEE Indonesia has also sponsored and supported more than 50 high quality conferences

each year, including this conference, the result of the quality conference publication are published in the IEEE Xplore index by scopus, WOS and other major databases, which has more than 5 million publications and more than 12 million download each month. As we all know, IEEE always maintains high quality publication as part of the intellectual culture. IEEE Indonesia also hold more than 40 professional technical, non-Technical and administrative activities each year, for all members. Currently, we have more than two thousand nine hundred (2900) members and more than 50 senior members, consisting of professional industry Academia and government, IEEE Indonesia, supported the development of 26 technical society chapters, joint chapters and for this conference who is a major player and supporter from technical IEEE Power and Energy Society (IEEE PES), And IEEE Indonesia section has 33 University student branches and 9 IEEE student branch chapters, which have become a forum for Technical and social activities that provide the best experience for Indonesian student and graduate student members. In addition, we have a non-technical affinity group, consisting of young, professional and women in engineering, and one IEEE sights on e-health and telemedicine interest group. And of course, I would like to encourage all of you to become an IEEE member to get all the benefits, including broader networking between Academia, professional, and government members. Last year, IEEE Indonesia also initiated cooperation with the Directorat Jenderal of higher education, in order to synchronize and support IEEE activities in the Indonesian Ministry of Education, and culture program, especially for the Kampus Merdeka, emancipated learning program. IEEE Indonesia is also exploring cooperation with the Indonesian industry in various activities. actively involved in providing input, the preparation of related government regulation and other activities.

Finally, congratulations to the conference committee for making this event Success. We do hope you will join us to make the international seminar on application for technology of information and communication conference, a memorable event.

Thank you, and have a great day.

Welcome Speech from IEEE Power & Energy Society

Prof. Ir. Arif Nur Afandi, Ph.D
Chair of PES Chapter

Good morning,

The honorable speaker, colleagues, professor, lectures, researcher, ladies and gentlemen.

On behalf of the Power and Energy Society chapter of IEEE Indonesia. I would like to express my great gratitude and welcome you to iSemantic 2022 as a flagship event of this year. This conference series is used to lead conferences in engineering and informatics technology with its relative aspects.

As in veteran series, fresh chapter always commits to support enhancement and other skill up including this conference for iSemantic 2022. I hope that iSemantic 2022 would be able to achieve providing and effective forum for academician which is just participate to advance knowledge research and technology for humanity. I also hope all participants stay on in the conference with attractive and excited about the future program reading knowledge research technology for humanity. More offer, I wish to collaborate more for the academician participants around the world with all of the expertise related in engineering and informative. So, in iSemantic 2022, I believe this event will drive to the exchange of the idea between all participants around the world. More offer, referring to the iSemantic 2022 the first chapter reference for greet invitation for all member, for all joining this program to come, enjoy, and develop activity as the first establishment of the first chapter on between 2015. The most member of first chapter come from the academicians and industrian also professional. I am sure that our synergy will make a better list and endeavor technology for sustainable development and finding knowledge.

Finally, my deep gratitude to the iSemantic team for bringing out this event in 2022. Also, Dian Nuswantoro led the organization for this memorable event.

Thank You.

Welcome Speech from Vice Rector

Dr. Pulung Nurtantio Andono, S.T., M.Kom
Vice Rector IV, Universitas Dian Nuswantoro

Bismillaahirrohmaanirrohiim:

Assalaamu'alaikum Wr. Wb.

Very good morning, Everybody:

First of all and the utmost of all, we would like to submit our high gratitude to Allah SWT, God the Almighty, for all the blessings and amenities within our life, so that we can meet safe and sound today for this prestigious international seminar at our beloved campus of Universitas Dian Nuswantoro, Indonesia. As General Chair, with great honor, we welcome you all and we thank you for your great participation in this 2022 iSemantic (***International Seminar on Application for Technology of Information and Communication***), with the topic: Technology 4.0 for Smart Ecosystem: A New Way of Doing Digital Business.

In the second occasion, we would like to mention with pride all the distinguished Key-note Speakers today:

1. Dr. Shay Bahramirad, Vice President Engineering and Smart Grid ComEd (Oakbrook Terrace, Illinois), US;

2. Prof. Mohd. Faizal Bin Abdollah, Associate Professor at Faculty of Information and Communication Technology University Teknikal Malaysia Melaka;

3. Dr. Guruh Fajar Shiddik, MCS, Vice Rector of Computer Science Universitas Dian Nuswantoro, Indonesia.

4. Mrs. Celia Shahnaz, Ph.D, IEEE WIE Committee Chair-Elect and Professor at Department of EEE, BUET, Bangladesh

We thank you very much for sharing your great experience concerning the update topic in the world today.

Dear all the Audience of Great Researchers,

We would also like to wish you all, your family, relatives, and colleagues: great health, happiness, and success during this Covid-19 Pandemic that has been long lasting until now. We pray together that this pandemic will end very soon.

Thank you for coming here today in our online Seminar about Technology 4.0 for Smart Ecosystem: A New Way of Doing Digital Business. We believe together that doing business today is different from that in the past. Doing business today using “TANGAN

KOSONG" [or virtually empty hand or DIGITAL BUSINESS] is very possible and even it is growing excellent and far more successful than the traditional business practices. This is our common challenges ahead as well as challenges for our children of tomorrow.

Dear Ladies and Gentlemen,

Through this Seminar, we encourage all of you to stay and participate actively to share ideas and thoughts so that this conference can become a platform of world discussions about the Technology 4.0 for Smart Ecosystem, especially making the best efforts and finding the new ways for doing Digital Business. We also encourage all the scholars, academicians, scientists, and practitioners to take a significant part in this international conference.

To bring our speech to an end, we would like to send our great appreciation to all the conference managers, all the reviewers, all the authors and co-authors for all the contribution to the success of this 2022 iSemantic conference. We also thank our publishing partner: IEEE Indonesia Section, IEEE Universitas Dian Nuswantoro Branch, and IEEE Power&Energy Society for the collaboration and participation, conference process, and the sponsorship.

We also thank all the 2022 iSemantic committee members for their great efforts and hard work so that this international seminar is running very well and becomes successful today and tomorrow.

A short poem:

"EAST OR WEST, HOME IS BEST"

PLEASE BE NICE, **iSemantic** IS THE BEST.

Thank you, thank you very much!

Wassalaamu'alaikum Wr. Wb.

Committee

The 2022 International Seminar on Application for Technology of Information and Communication committes.

General Chair: Dr. Pulung Nurtantio Andono, M.Kom.

Steering Committee:

1. Prof. Dr. Ir. Edi Noersasongko, M.Kom. (Universitas Dian Nuswantoro - Indonesia)
2. Prof. Supriyadi Rustad (Universitas Dian Nuswantoro - Indonesia)
3. Prof. Zainal A Hasibuan (Universitas Dian Nuswantoro - Indonesia)
4. Prof. Dr. Taufik (Calpoly – USA)
5. Prof. Kunio Kondo (Tokyo University of Technology – Japan)
6. Prof. Kiyoaki Aikawa (Tokyo University of Technology - Japan)
7. Prof. Taichi Watanabe (Tokyo University of Technology Japan)
8. Prof. Masanori Kakimoto (Tokyo University of Technology - Japan)
9. Prof. Vincent Didik Wiet Aryanto (UDINUS - Indonesia)
10. Prof. Sumonta Kasemvillas (Khon Kaen Univ - Thailand)
11. Prof. Ahmad Yusoff (USM - Malaysia)
12. Prof. Mohamad Ashari (ITS - Indonesia)
13. Prof. Nana Suryana Herman (UTeM - Malaysia)
14. Prof. Mauridhi Hery Purnomo (Institut Teknologi Sepuluh November - Indonesia)
15. Prof. Benyamin Kusumoputro (Universitas Indonesia - Indonesia)
16. Prof. Alen Soldo (University of Split- Croatia)
17. Prof. Bambang Riyanto (Institut Teknologi Bandung - Indonesia)
18. Prof. Ida Ayu Giriantari (Universitas Udayana – Indonesia)
19. Prof. Andreas Lako (Unika Soegijopranoto – Indonesia)
20. Prof. Adang Suwandi (ITB - Indonesia)
21. Prof. Yanuarsyah Haroen (Institut Teknologi Bandung - Indonesia)
22. Prof. Sasongko Pramono Hadi (Universitas Gajah Mada - Indonesia)
23. Prof. Ahmad Binadja (Universitas Dian Nuswantoro - Indonesia)
24. Prof. Dr. Ir. Riri Fitri Sari. M.Sc. M.M. (Universitas Indonesia - Indonesia)
25. Prof. Dr. Ir. Harry Sudibyo, M.Sc. (Universitas Indonesia - Indonesia)
26. Prof. Kusmiyati ST., MT., Ph.D. (Universitas Dian Nuswantoro - Indonesia)
27. Dr. Guruh Fajar Shiddik, M.Cs. (Universitas Dian Nuswantoro - Indonesia)
28. Dr. Wahidin Wahab (Universitas Indonesia - Indonesia)
29. Dr. Ivan Jedvaj (Zagreb school of economics and management)

Technical Program Committee:

1. Dr. Eng. Farrikh Alzami, M.Kom. (Chair)
2. Dr. M. Arief Soeleman, S.Kom., M.Kom. (Universitas Dian Nuswantoro – Indonesia)
3. Dr. M. Ary Heryanto (Universitas Dian Nuswantoro - Indonesia)
4. Dr. Dian Retno Sawitri (Universitas Dian Nuswantoro - Indonesia)
5. Dr. Sendi Novianto, S.Kom., M.T. (Universitas Dian Nuswantoro - Indonesia)
6. Dr. Hector Sanches Lopez (Universitas Dian Nuswantoro– Indonesia)

7. Dr. Mochamad Facta (Universitas Diponegoro - Indonesia)
8. Dr. Supari (Universitas Semarang - Indonesia)
9. Dr. Mohamad Haddin (Universitas Islam Sultan Agung - Indonesia)
10. Dr. Dimas Anton Asfani (Institut Teknologi Sepuluh November - Indonesia)
11. Dr. Djoko Purwanto (Institut Teknologi Sepuluh November - Indonesia)
12. Dr. Sarjiya (Universitas Gajah Mada - Indonesia)
13. Dr. A.N. Afandi (Universitas Negeri Malang - Indonesia)
14. Dr. Danang Wijaya (Universitas Gajah Mada - Indonesia)
15. Dr. I Wayan Mustika (Universitas Gajah Mada – Indonesia),
16. Dr. Jumanto, M.Pd. (Universitas Dian Nuswantoro - Indonesia)
17. Dr. Tari Eszter (Universitas Dian Nuswantoro - Indonesia)
18. Dr. Wahyudi (UNniversitas Diponegoro - Indonesia)
19. Dr. Eng Suharyanto (Universitas Gajah Mada - Indonesia)
20. Dr. Paulus Insap Santoso (Universitas Gajah Mada - Indonesia)
21. Dr. Lukito Edi Nugroho (Universitas Gajah Mada - Indonesia)
22. Dr. Kusprasapta Mutijarsa (ITB - Indonesia)
23. Dr. Tole Sutikno (Universitas Ahmad Dahlan - Indonesia)
24. Dr. Arif Muntasa (Universitas Trunojoyo - Indonesia)
25. Dr. Ketut Edi Purnama (Institut Teknologi Sepuluh November – Indonesia)
26. Dr. Darlis Herumurti (Institut Teknologi Sepuluh November - Indonesia)
27. Dr. I.G.P Asto Budi Tjahyanto (Universitas Negeri Surabaya - Indonesia)
28. Dr. Lie Jasa (Universitas Udayana - indonesia)
29. Dr. Munawar Riyadi (Universitas Diponegoro - Indonesia)
30. Dr. Feri Yusivar (Universitas Indonesia - Indonesia)
31. Dr. I Gede Pasek Suta Wijaya (Universitas Mataram - Indonesia)
32. Dr. Saiful Bukhori (Universitas Jember - Indonesia)
33. Dr. Moh Khairudin (Universitas Negeri Yogyakarta - Indonesia)
34. Dr. Eng. Yuliman Purwanto (Universitas Dian Nuswantoro - Indonesia)
35. Dr. Ruri Suko Basuki (Universitas Dian Nuswantoro - Indonesia)
36. Dr. Muljono (Universitas Dian Nuswantoro - Indonesia)
37. Dr. MG Yuantari (Universitas Dian Nuswantoro - Indonesia)
38. Dr. Eng. Arief Udhiarto, S.T, M.T. (Universitas Indonesia - Indonesia)
39. Dr. Ir. Aries Subiantoro, MSEE. (Universitas Indonesia - Indonesia)
40. Dr. Aris Marjuni, S.Si, M.Kom. (Universitas Dian Nuswantoro - Indonesia)
41. Dr. Ricardus Anggi Pramunendar, M.Cs. (Universitas Dian Nuswantoro - Indonesia)
42. Dr. Catur Supriyanto, M.Cs. (Universitas Dian Nuswantoro - Indonesia)
43. Dr. Nova Rijati, S.Si, M.Kom. (Universitas Dian Nuswantoro - Indonesia)
44. Affandy, Ph.D. (Universitas Dian Nuswantoro - Indonesia)
45. Puwanto, Ph.D. (Universitas Dian Nuswantoro - Indonesia)

General Information

iSemantic 2022 will be host by Universitas Dian Nuswantoro, Semarang, Indonesia. Due the WHO has characterized our situation as 'Global Pandemic', iSemantic 2022 Conference will be held with virtual conference as suggestion from IEEE.

All sessions will take place by the best selection application to perform our events. For the seminar ceremony and keynote speaker presentation, we will use YouTube Live, Digital terrestrial television from TVKU (name of broadcaster brand) and the parallel session in virtual conference will be held using Zoom meeting application. The author will present live and orally or the moderator will play the presentation video from respected author. The Author will also attend in the room for Question and Answering Session.

Following guidance from IEEE which can be obtained at: https://ieeemce.org/introductionto- ieee-virtual-events/ in section: can anybody hear me; by submitting the video presentation at YouTube, the author agree and give the iSemantic 2021 to have rights to download publish it into YouTube in specified channel's playlist so any viewers (attendees) can watch the video presentation at times that are convenient for them. We are looking forward to meet you at ceremony and parallel session.

Official YouTube channel of TVKU ch49 Universitas Dian Nuswantoro
URL: https://bit.ly/youtube-isemantic2022

Keynote Speaker 1

Dr. Shay Bahramirad

Vice President Engineering and Smart Grid ComEd
(Oakbrook Terrace, IL)

Shay Bahramirad is the Vice President of Climate and Resilience at Quanta Technology. She is responsible for assisting cities and utilities with climate change risk assessments for their assets, operations, and services and for developing mitigation strategies and investment strategies for adapting to climate change. Her work powers the planet by reducing carbon emissions, creating cleaner air for everyone, and making communities resilient. Dr. Bahramirad has held several positions in the Energy Sector, including Vice President of Engineering and Smart Grid at ComEd; the electric utility in IL. In these roles, she has overseen and/or executed “grid of the future” visions, technical roadmaps, analytical frameworks, and investment strategies. She has also been responsible for system reliability, DER integration, grid strategy and analytics, standards, emerging technologies, STEM programming, and reimagining the power grid to mitigate and adapt to climate change. She has also developed talent strategies, industry engagement plans, and advocacy programs to support business objectives. Dr. Bahramirad is an editorial board member of the Electricity Journal, an adjunct professor at the Illinois Institute of Technology, and the IEEE/PES Vice President of New Initiatives and Outreach, overseeing the organization’s engagement with policymakers globally and developing strategies for the next generation of frameworks including smart cities. She is the founder of PES WiP(Women in Power).

Keynote Speaker 2

Prof. Mohd. Faizal Bin Abdollah

Associate Professor at Faculty of Information and Communication Technology University Teknikal Malaysia Melaka

Associate Professor Mohd. Faizal Bin Abdollah: received, master in Malaysia National University (UKM) and a Ph.D (Computer Network and Security) in University Technical Malaysia, Melaka Malaysia in the year 2004 and 2009 respectively. Currently, he is an Associate Professor in the Faculty of Information and Communication Technology University Teknikal Malaysia Melaka. He is also also serving as a reviewer of reputed top ranked SCI-indexed journals. He also authored a book of chapter and serve as consultant for network and forensics. Dr. Mohd. Faizal Bin Abdollah main research interest includes Computer Network and Security.

Keynote Speaker 3

Dr. Guruh Fajar Shiddik, M.Cs

Dean of Computer Science Universitas Dian Nuswantoro

Associate Professor Dr. Guruh Fajar Shiddik received Master Degree in University Technical Malaysia, Melaka Malaysia and Ph.D (in Cloud Computing) in Universitas Gajah Mada, Yogyakarta, Indonesia. Currently he is the Dean of Computer Science Universitas Dian Nuswantoro. His research is mainly in Cloud Data Center, Computer Vision, and public health. His paper is published in top scopus journal, such as IEEE Access, Computer Methods and Programs in Biomedicine Elsevier, International Review on Modelling and Simulation, and so on

Keynote Speaker 4

Celia Shahnaz
IEEE WIE Committee Chair-Elect

Celia Shahnaz, SMIEEE, Fellow IEB, received Ph.D. degree from Concordia University, Canada and is currently a Professor, Department of EEE, BUET, Bangladesh since 2015 (http://www.celiashahnaz.com). She has published more than 150 international journal/conference papers. She is a recipient of the Canadian Commonwealth Scholarship/Fellowship and Bangladesh Academy of Science Gold Medal for her contribution in Science and Technology. Recently, her papers have received best paper awards in Biomedical Engineering tracks at TENCON 2017 and at IEEE WIECON-ECE 2016, in Humanitarian Challenge track at R10 HTC 2017. She has around 20 years of experience (more than 18 years as an IEEE volunteer) of leading impactful Technical, Professional, Educational, Industrial, Women Empowerment and Humanitarian Technology and PES related Projects at national/international levels.

Paper List

No	Paper ID	Title	Page
1	1570798519	A Survey on Process Mining for Security	1 – 6
2	1570799310	The ECG-LPWAN based for Real-time monitoring Patient's Heart Beat Status	7 – 14
3	1570800910	A Study on the Impact of COVID-19 on Students and their Perception of e-Learning via MyCaptain App	15 – 18
4	1570801581	Identification of Potato Supply Chain Network Design To Increase Farmer's Income	19 – 26
5	1570801821	The Discrepancies of Online Translation-Machine Performances: A Mini-Test on Object Language and Metalanguage	27 – 35
6	1570801911	Product and Process Design Through TOPSIS System Analysis Under Industry 4.0 Platform Application	36 – 40
7	1570804341	The Effect of Image Dimension and Exposure Fusion Framework Enhancement in Pneumonia Detection Using Residual Neural Network	41 – 45
8	1570805089	Detection Performance Using Range Dependent SINR for Planar-PMIMO Radar	46 – 50
9	1570805319	Text Encryption using Transform Dimension, Bit Plane Slicing, and Chaos System	51 – 55
10	1570805342	Spoofing Detection of Fake Speech Using Deep Neural Network Algorithm	56 – 60
11	1570805350	Lexicon-Based Features on Naive Bayes Modification for Classification of Chinese Film	61 – 65
12	1570806097	An Improved Handwritten Javanese Script Recognition using Adaptive Threshold and Multi-Feature Extraction	66 – 70
13	1570806823	Triple DES Cryptography Based on Hash Function and DSA for Digital Certificate Authentication	71 – 76
14	1570807697	Evaluation of Real Options Valuation in Petroleum using Deep Learning Algorithms based on Stock Market Information with Dual Information	77 – 81

15	1570807807	Artifact-EOG Denoising Using FIR-Filtering In EEG Channel Selection For Monitoring and Rehabilitation of Stroke Patients	82 – 88
16	1570807900	Goals of Customer Relationship Management in Hospitals based on the Customer Life Cycle: A systematic literature review	89 – 94
17	1570807934	Annotation Contribution to Classification Accuracy of Person Identification Based Gait Biometric	95 – 100
18	1570807956	Performance Analysis of Deep Learning Models for Sweet Potato Image Recognitionq	101 – 106
19	1570807958	CTR Prediction of Advertisements using Decision Trees based Algorithms	107 – 112
20	1570808076	Vision Transformer Approach for Vegetables Recognition	113 – 118
21	1570808112	Design and Implementation of the Irrigation Robot Movement System on Grid Land using 2D Array Algorithm	119 – 124
22	1570808203	Digital Transformation of the Classroom: Impact of Leveraging Artificial Intelligence (AI) and IoT in the Education Sector	125 – 131
23	1570811042	Fatigue Level Prediction of Lower Extremity Knee Flexor and Extensor Muscles using Neural Network	132 – 137
24	1570811116	Accreditation Documents Profiling based on the Used of English terms using Text mining Algorithm: A case study on 24 accreditation document	138 – 143
25	1570812041	Exploring Consumer Intention to Visit a Destination and eWOM through Uses and Gratification Perspective: Evidence from YouTube Travel Vlogs	144 – 149
26	1570812651	An Enhancement of DES, AES Based on Imperceptibility Along With LSB	150 – 155
27	1570814426	WhatsApp Profile Photo Investigation in Relation with Personality Traits Prediction	156 – 160
28	1570814935	Gaming Activities During the Covid-19 Pandemic Era: A Systematic Literature Review	161 – 166
29	1570815712	STARS: websocket design and implementation	167 – 171

30	1570816812	IT Service Desk Model Literature Review: Benefits and Challenges	172 – 177
31	1570816823	Systematic Literature Review on Solving Personalization Problem in Digital Marketing using Machine Learning and Its Impact	178 – 182
32	1570816829	Literature Review of OpenAI Five's Mechanisms in Dota 2's Bot Players	183 – 190
33	1570816997	Adoption of RPA and AI to Enhance the Productivity of Employees and Overall Efficiency of Indian Private Banks: An Inquiry	191 – 197
34	1570817169	Early Detection for Determinants of Risky Behavior in Cervical Cancer Cases through the C4.5 Algorithm in Indonesia	198 – 203
35	1570817178	Efficient Deep Learning Model In Road Surface Condition Monitoring	204 – 209
36	1570817391	Time-based Performance Improvement for Early Detection of Conflict Potentials at the Central Java Regional Police Department	210 – 216
37	1570817446	KNN Algorithm for Foodstuff Classification Using HSV Color Space and Feature Extraction	217 – 225
38	1570817536	An Insight into Power System Resilience and its Confounding Traits	226 – 231
39	1570817569	Development of a Virtual Reality System Based Cycling Training for Health Promotion of Individuals Post-Stroke	232 – 237
40	1570817571	The Transition of Independent Bookselling to Digital Space: A Case Study of Transit Bookstore's Instagram	238 – 243
41	1570817653	Exploring Indonesian Netizen's Emotional Behavior Through Investment Sentiment Analysis Using TextBlob-NLTK (Natural Language Toolkit)	244 – 248
42	1570817663	Factors Influencing Government Employees To Adopt E-Government Innovation: Systematic Literature Review	249 – 256
43	1570817664	Residential Property Price Prediction Using Machine Learning: MakanSETU	257 – 262
44	1570817667	Prediction of Nutritional Requirements for Children's Growth and Adolescents Using Machine Learning	263 – 267

45	1570817682	Comparative Study on Image Filtering for Herbal Plant Identification Using Xception Based Convolutional Neural Network	268 – 272
46	1570817723	Spatio-Temporal Analysis Coastal Areas For Detection Mangrove Greenery Using Combined Mangrove Recognition Index	273 – 277
47	1570817741	Integration of Fuzzy Multi-Attribute Decision Making and Clustering Methods for Student Apprenticeship Recommendations	278 – 284
48	1570817752	Factors Affecting Intention to Use a New Human Resource Information System at One of the Small and Medium Enterprises in Indonesia	285 – 290
49	1570818104	Hybrid Method of Selection Features to Improve Performance of Covid-19 Classification	291 – 295
50	1570818568	Study Literature Review: Discovering the Effect of Chatbot Implementation in E-commerce Customer Service System Towards Customer Satisfaction	296 – 301
51	1570818851	Implement Android Application for Determination and Monitoring Blood Chemistry	302 – 309
52	1570819166	Application of Grayscale Co-occurrence Matrix (GLCM) Method for Classification of Quality Type of Guava Leaves as Traditional Medicine Using Neural Network Algorithm	310 – 313
53	1570819474	GLCM Feature Extraction and PCA for Tuberculosis Detection with Neural Network	314 – 318
54	1570820078	Space-Efficient Probabilistic Data Structure Ribbon Filter: Analysis, Design, and Optimized Implementation	319 – 324
55	1570820106	Selection of Optimal Transportation Routes in the Distribution of Temanggung Original Robusta Coffee using Genetic Algorithms	325 – 332
56	1570820108	Smart potato grading using image processing and fuzzy grading system	333 – 337
57	1570820305	The Adoption Model of People Analytics in Higher Education: A Soft System Approach	338 – 342
58	1570821173	Digital Certificate Authentication with Three-Level Cryptography (SHA-256, DSA, 3DES)	343 – 350
59	1570821178	AdaBoost Based C4.5 Accuracy Improvement on Credit Customer Classification	351 – 356

60	1570821186	Optimization of Infant Birth Predictions during the Covid-19 pandemic using the Particle Swarm Optimization-based K-NN Algorithm method	357 – 361
61	1570821295	Student Graduation Prediction Model using Deep Learning Convolutional Neural Network (CNN)	362 – 366
62	1570821322	Effects of Social Media Marketing in Cloud Kitchen Towards Online Platform in Indonesia	367 – 371
63	1570821325	Image Processing in 3D Printing Application: Study Case of Liver Organ	372 – 376
64	1570821352	User Experience Model using Concise User-Centered Design in Small and Medium Enterprise E-Commerce	377 – 382
65	1570821363	Hybrid Neural Network and Evolutionary Model for Detection of Rice Plant Disease	383 – 388
66	1570821389	Prediction of hourly solar radiation in Indonesia using LSTM	389 – 395
67	1570821415	DESITA: E-Service Optimization of Student Final Project Management Based on Website Technology	396 – 400
68	1570821477	Giziku Baik App: preventing stunting and nutritional status diagnose in a adolescent period	401 – 404
69	1570821486	Defect Detection of Agricultural Commodities using Image Processing and Artificial Neural Networks	405 – 408
70	1570821796	Optimization of Horticultural Food Commodity Distribution Routes using Genetic Algorithm with Crossover Partially Match	409 – 414
71	1570822420	Performance Analysis of Multiple Linear Regression and Random Forest for an Estimate of the Price of a House	415 – 418
72	1570823278	Food Horticultural Supply Chain Performance Efficiency using Hybrid Model: SCOR - System Dynamic Simulation	419 – 425
73	1570823925	Indonesian Traffic Signs Recognition Using Convolutional Neural Network	426 – 430
74	1570823936	A Conceptual Paper: Model of Integrated Surveillance System of Tuberculosis Based on the Internet of Things (IoT) for Accelerating Indonesia Free Tuberculosis in 2030	431 – 435

75	1570823952	Component of Traffic Management System for Developing Countries: A Review	436 – 439
76	1570823960	The Supply Chain Management Model of Small Medium Enterprise (SME): Case Study Dry Food Souvenirs	440 – 443
77	1570823966	Integration of The Indonesian Cultural Heritage and Natural History Based on Digital Technology 4.0: A Conceptual Framework	444 – 447
78	1570824014	Comparative Study of Classification Algorithms for Website Phishing Detection on Multiple Datasets	448 – 452
79	1570824069	Improving SMEs Skills in Indonesia to Support Export with E-Learning Culture Academy	453 – 458
80	1570824095	End-to-End Circular Economy in Onion Farming with the Application of Artificial Intelligence and Internet of Things	459 – 462
81	1570824210	Systematic Review of Educational Data Mining for Student Performance Prediction using Bibliometric Network Analysis (SeBriNA)	463 – 468
82	1570824372	Comparison Of Clustering Methods For Health Clinic Products	469 – 473
83	1570824440	Cholesterol Detection Through Iris Using Daugman and Gray Level Co-occurrence Matrix Based on K-Means Clustering	474 – 478
84	1570824528	Super Encryption Video Cryptography: Combination of Vigenere Cipher and Myszkowski Transposition	479 – 484
85	1570824561	Landsat Image Classification Based on K-Nearest Neighbor	485 – 489
86	1570824594	Long Short-Term Memory Algorithm for Stock Price Prediction	490 – 495
87	1570824673	Comparison of Acoustic Characteristic among Electronic, Human-Played and Robot-Played Demung	496 – 499
88	1570824687	Mask Detection Using Convolutional Neural Network	500 – 505