

THE INTERNATIONAL CONFERENCE ON
SYSTEM SCIENCE AND ENGINEERING 2021

ICSSE 2021

VIRTUAL CONFERENCE

CONFERENCE PROGRAM

26-28 August 2021

Ho Chi Minh City, Vietnam

Co-organized by:



Sponsored by:



IEEE
SMC
Systems, Man, and Cybernetics Society



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PREFACE



Prof. Dr. Bing-Fei Wu,
President
TASSE, Taiwan



Prof. Dr. Yo-Ping Huang,
President
NPU, Taiwan



A/Prof. Dr. Le Hieu Giang,
Vice-President
HCMUTE, Vietnam

Nowadays, System Science and Engineering combines all of the most modern technologies into a research field. Systems are required to be more and more intelligent and therefore, getting more and more complex with sophisticated entities and their interrelationships with increasing data density, connectivity and ubiquitous computational resources. It is foreseen that systems in the future must be able to self-operate by artificial intelligence and interact smartly with human. Technology advancement is not only providing opportunities to improve system capabilities but also introducing development risks that must be weighed and managed. Thus, it is our goal to bring together scholars from all areas to a common forum to discuss, demonstrate and exchange research ideas and achievements in the scope of System science and engineering so that the newest information in the field could be shared and updated among all possibly related stakeholders.

The 2021 International Conference on System Science and Engineering (ICSSE 2021) is the eleventh event in the annually organized ICSSE series that has been initiated from 2010 and held in various universities in different countries. This year, due to the negative effects of the Covid-19 pandemic, it is hosted by Ho Chi Minh City University of Technology and Education (HCMUTE), Vietnam, and taking place virtually during August 26-28, 2021. Despite the unavoidable disadvantages of the online mode in comparison to the on-site mode, the host HCMUTE commits to provide the best connections among remote participants to smoothly facilitate scientists, engineers, and practitioners from all over the world to present their latest system design concepts, research results and applications, as well as side-interactions between scholars and practitioners. As usual, ICSSE 2021 will feature plenary speeches in emerging technology topics given by world renowned scholars. All the accepted full papers will be published on the system of IEEE Xplore® digital library.

WELCOME MESSAGE

Distinguished participants, colleagues and friends!

Warmest greetings from HCMUTE, Ho Chi Minh City University of Technology and Education, Vietnam!

It has been two years since the latest time HCMUTE successfully hosted ICSSE 2019, we are so glad to that we are honored to have another chance to be the main organizer for ICSSE 2021.

As you have been initially informed, ICSSE 2021 was planned to take place in the beautiful sea-beach Nha Trang city of Vietnam. Everything has been carefully prepared by HCMUTE and NTU when suddenly the Covid-19 pandemic with the Delta type is getting more and more serious in the whole world including Vietnam which has forced the Vietnam Government to announce the social distance for almost all the Southern provinces of Vietnam, and thus of course local and international travelling is strictly limited. Even today, when ICSSE 2021 actually starts, the social distance is still maintained out there to help control further spread of the disease. On behalf of the ICSSE 2021 organizers, HCMUTE ask for your understanding for the unexpected hard situation.

Despite the negative and serious effects caused by the Covid-19 pandemic in the whole world, thanks to the consistence and enthusiasm of all co-organizers, TASSE, Taipei Tech, NPU, NTU, VUTED, Department of Science and Technology Ho Chi Minh City, and HCMUTE, the series of ICSSE is still kept invulnerable and holding the role to facilitate the demand for knowledge and experience exchange of scientists, researchers, lecturers and students of the field through presentation sessions, keynote addresses, interactive workshops and discussions. In order to make it in such difficult context and to guarantee the most safety for all participants, we have to conduct the conference this time 100% virtually by making use of the online tools and platforms which we believe that all participants have become familiar with, recently. For sure, this is not the first time you witness that important conferences are conducted online especially within the last 2 years. And we believe that you will also see that organizers will support you the most in the virtual communication to make no disadvantages in comparison to the normal on-site mode.



Assoc. Prof. Dr. Ngo Van Thuyen
University Council Chairman,
HCMUTE, Vietnam

This year, ICSSE 2021 conference has received a large number of submissions from various countries such as Austria, Czechia, Romania, United States, South Korea, Taiwan and Vietnam. Out of the 150 full-length submissions which have all gone through a careful and strict peer-review process, 95 papers have been selected to be published in the final ICSSE 2021 proceedings. All the papers will be presented by their authors in 16 sub-sessions. In the completion of the conference, the proceedings will be published by IEEE Xplore with ISBN 978-1-6654-4848-2 and online ISSN 2325-0925. We highly appreciate the efforts of authors who, in some cases, have had to upgrade their paper even more than twice to obtain its best status that meets with the demands or suggestions of reviewers.

In this occasion, ICSSE 2021 committee is delighted to bring to you keynote speeches from 3 respected speakers in different fields from Poland, Hong Kong and Taiwan. We strongly believe that participants will find valuable and newest knowledge and achievements in System Science and Engineering in the modern world.

Ladies and gentlemen, please let us take this opportunity to show our deepest gratitude to the distinguished speakers, participants and colleagues for your invaluable contributions to our conference. Great thanks also go to the many reviewers for their respectful scientific supports. Thanks also go to member institutions and partner universities for being together with us in organizing the conference. Finally, we thank very much the organizing committee members for all your long hard working period to prepare for this event. We wish you all health and safety!

Thank you again!

OPENING SPEECH OF NTU

Dear Sir/madam,
Distinguished speakers, guests and participants,

On behalf of Nha Trang University (NTU), I would like to express our warmest greetings to all delegates and welcome you all to the International Conference on System Science and Engineering 2021 (ICSSE 2021).

Thank you for joining this virtual conference. We should have had the honor of having you physically today at our beautiful Nha Trang city. However, due to the spread of Covid-19 pandemic in Vietnam and around the world, we are unable to meet and welcome you in persons here as we expected. Nevertheless, I appreciate your effort to be together virtually via Zoom application.

Nha Trang University has grown up from the Faculty of Fisheries, Academy of Agriculture and Forestry in 1959. In 2021, we have recently celebrated our 62nd Anniversary of development. Initially being a university that specialized in fisheries only, NTU has become a prestigious multi-disciplinary and multi-level educational institution with a strong foundation of fisheries, aquaculture and marine economy. We embrace the vision to become a leading university in training, research, and technology transfer in fishery sciences and some selected areas in marine economy in the Southeast Asia by 2030.

I have learned that this is the 3rd time the ICSSE series is held in Vietnam and this year, Nha Trang University is honored to be the co-organizer of the conference. Hence, we feel so proud and lucky to meet you today to share and learn valuable knowledge and achievements in a wide spectrum of modern technologies presented by the world-class scholars, experts, engineers and practitioners.



Dr. Quach Hoai Nam
Vice-Rector
NTU, Viet Nam

I would like to take this opportunity to express my sincere thanks to Ho Chi Minh City University of Technology and Education and all partners for the strong cooperation and efforts to organize this important event despite the challenges arising from the global COVID-19 crisis.

In the midst of the COVID-19 pandemic, we must cooperate even more closely to address the global challenges together. I also hope to develop and strengthen a strong network with all universities and institutions through ICSSE. Nha Trang University is ready to cooperate with all of you in the near future.

May I take this opportunity to convey my very best wishes for an effective, successful and productive conference.

Wishing you good health, success and happiness.

Thank you.

OPENING SPEECH OF VUTED

Ladies and gentlemen,

On behalf of Vinh University of Technology Education (VUTED), I am pleased to warmly welcome you all, honored guests, scientists and colleagues, to the International Conference on System Science and Engineering 2021 (ICSSE 2021).

Following the success of the previous ICSSE conferences, apart from sharing and updating scientific research results, this conference is seen as a great opportunity for all of the participants to connect and look for collaboration opportunities. Unfortunately, with this conference, we have no choice but to change from face-to-face mode to online mode due to the outbreak and complicated expansion situation of the Sars-CoV-2 pandemic. However, inheriting the significant achievements gained from the last conferences and spreading inspiration at this conference, a large number of valuable articles that update and share the latest research findings have been submitted to us by scientists and speakers from countries.

Vinh University of Technology Education, with over 60 years of establishment and development, has been progressively transforming itself for international integration and access to the world of science and technology. VUTED is gradually implementing research activities to improve the quality of educational training, applied science, and community activities to serve the needs of local economic development. Therefore, we look forward to collaborating with domestic and foreign scientists, universities and research institutes.

Invited by Ho Chi Minh City University of Technology and Education to co-organize ICSSE 2021, VUTED considers the conference as one of the most significant events of our university in the year 2021. It is both an affirmation of the organization's efforts and scientific research capability, as well as a great opportunity for us to interact with and learn from outstanding scientists and colleagues from many of



Dr. Pham Huu Truyen
Rector,
VUTED, Vietnam

the world leading universities. We look forward to continuously accompanying the ICSSE Organizing Committee in the future. We really hope that the conference will be held someday in Nghe An province, the hometown of the Vietnam's Great President Ho Chi Minh with many historical sites, rich cuisines and hospitality.

I would like to take this opportunity to show our thankfulness to Ho Chi Minh City University of Technology and Education for introducing and supporting us in holding this conference. I would also like to express our appreciation to Nha Trang University for their effective cooperation to successfully organize the event today.

VUTED would like to show gratitude to the scientists and speakers who are willing to share their scientific research results to all of us.

Finally, I wish all guests, scientists, speakers and colleagues good health, happiness and safety. Let us make a great success for the ICSSE 2021 together.

Thank you.

KEYNOTE SPEECH 1

Learning Based Video Coding by Data-driven Techniques and Advanced Models

Abstract:

In June 6th 2016, Cisco released the White paper [1], VNI Forecast and Methodology 2015-2020, reported that 82 percent of Internet traffic will come from video applications such as video surveillance, content delivery network, so on by 2020. It also reported that Internet video surveillance traffic nearly doubled, Virtual reality traffic quadrupled, TV grew 50 percent and similar increases for other applications in 2015. The annual global traffic will first time exceed the zettabyte (ZB; 1000 exabytes [EB]) threshold in 2016, and will reach 2.3 ZB by 2020. It implies that 1.886ZB belongs to video data. Thus, in order to relieve the burden on video storage, streaming and other video services, researchers from the video community have developed a series of video coding standards. Among them, the most up-to-date is the High Efficiency Video Coding (HEVC) or H.265 standard, which has successfully halved the coding bits of its predecessor, H.264/AVC, without significant increase in perceived distortion. With the rapid growth of network transmission capacity, enjoying high definition video applications anytime and anywhere with mobile display terminals will be a desirable feature in the near future. Due to the lack of hardware computing power and limited bandwidth, lower complexity and higher compression efficiency video coding scheme are still desired. For higher video compression performance, the key optimization problems, mainly decision making and resource allocation problem, shall be solved. In this talk, I will present the most recent research results on machine learning, deep neural network and reinforcement based video coding. This is very different from the traditional approaches in video coding. We hope applying these intelligent techniques to vide coding could allow us to go further and have more choices in trading off between cost and resources.

Speaker:



Professor Sam Tak Wu Kwong

Chair Professor of Computer Science
Department of Computer Science, City University of Hong Kong
Vice President Cybernetics, IEEE SMCS
E-mail: cssamk@cityu.edu.hk

Sam Kwong received B.Sc. degree from the State University of New York at Buffalo, Buffalo, NY, in 1983, the M.A.Sc. degree in electrical engineering from the University of Waterloo, Waterloo, ON, Canada, in 1985, and the Ph.D. degree from the Fernuniversität Hagen, Germany, in 1996. From 1985 to 1987, he was a Diagnostic Engineer with Control Data Canada, where he designed the diagnostic software to detect the manufacture faults of the VLSI chips in the Cyber 430 machine. He later joined Bell Northern Research as a Member of Scientific Staff working on the Integrated Services Digital Network.

Kwong has extensive experience managing university Computer Science departments and academic publications. He is the associate editor of leading top 5% IEEE transaction journals based on the recent JCR report, such as IEEE transactions on Evolutionary Computation, the IEEE Transactions on Industrial Informatics, and the IEEE Transactions on Industrial Electronics. He also served as Head and Professor of the department of Computer Science, City University of Hong Kong, from 2012 to 2018. He is currently a chair professor of Computer Science Department of City University of Hong Kong.

He has coauthored three research books, eight book chapters, and over 300 technical papers. His book entitled "Genetic Algorithm for Control and Signal Processing" featured pioneering work in applying evolutionary algorithm as an optimization tool for industrial applications such as network intrusion systems, self-healing multicast network, speech recognition and video coding, and was a bestseller in 1997. In addition, his prolific research publication record has reached over 200 top ranked journal papers, including over 100

IEEE journals. His works have been cited over 18,000 times according to Google Scholar with an h-index of 55. He has filed 13 US patents, of which 6 have been granted. He has been the distinguished lecturer of IEEE SMCS since 2018 and delivers two DL lectures yearly to promote IEEE SMC society and cutting-edge cybernetics technology. He also frequently delivers Keynote speeches in IEEE SMCS supported conferences. In 2014, he was elevated to IEEE Fellow for his contributions to optimization techniques in cybernetics and video coding.

Kwong's involvement in the multiple facets of IEEE throughout the years has been extensive and committed. He has served as an Invited Speakers for many different IEEE conferences. With respect to SMCS, he serves IEEE SMCS as Hong Kong SMCS chapter chairman, a Board Member, Conference Coordinator, Membership coordinator and a Member of Long Range Planning and Finance Committee, Vice President of Conferences and Meetings, Vice President of Cybernetics. He led the IEEE SMC Hong Kong Chapter to win the Best Chapter Award in 2011 and awarded Outstanding Contribution Awards for his contributions to SMC 2015. Currently, he is the president-elect of IEEE Systems, Man and Cybernetics Society.

KEYNOTE SPEECH 2

AIoT Systems and their Applications in Industry and Healthcare

Abstract:

Through several waves of ups and downs in the past decades, artificial intelligence (AI) has evolved into a must-have new technology or tool in various domains. Furthermore, with the advent of powerful GPU, AI-related research or AI-based applications have sprouted in every corner of the world. Originating from pure network connectivity, the Internet of Things (IoT) has become a structure that can collect every piece of data from physical devices, daily activities, images, or videos into a data reservoir. As a result, tons of data are automatically generated into an enterprise database in a single day. This creates research opportunities on integrating AI, IoT, big data, and cloud or edge computing, to improve the quality of industrial production or medical service. Applications of AI algorithms, models, or techniques play important roles and can be found everywhere, including widespread usage in industry and medical systems for tasks such as locating and detecting scratches or defects in product surface, printed circuit board manufacturing, monitoring rehabilitation progress for patients with Parkinson's disease or stroke, autonomous moving and planning of service robots in healthcare, and short-term or long-term prediction of air quality in certain areas. Furthermore, AI can be integrated with other techniques, such as Internet of things, big data, cloud computing, and edge computing to become powerful tools for industry and medicine domains. This talk will address from the AI and IoT, big data mining and system engineering perspective for systems developed to resolve the sensing, networking and applications faced in industry and healthcare.

Speaker:



Professor Yo-Ping Huang

President
National Penghu University of Science and Technology
Penghu, Taiwan 88046
IEEE SMCS Board of Governors
Chair, The TC on Intelligent Transportation Systems, IEEE SMCS
Email: yphuang@gms.npu.edu.tw

Yo-Ping Huang received the Ph.D. degree in electrical engineering from Texas Tech University, Lubbock, TX, USA. He is currently the President of National Penghu University of Science and Technology, Penghu, Taiwan, and Chair Professor in the Department of Electrical Engineering and Director of AIOT R&D Center, National Taipei University of Technology, Taipei, Taiwan, where he served as the Secretary General. He was a Professor and the Dean of Research and Development, the Dean of the College of Electrical Engineering and Computer Science, and the Department Chair with Tatung University, Taipei. His current research interests include AIoT systems, deep learning, intelligent control, data mining, and rehabilitation systems design.

Prof. Huang serves as the IEEE SMCS BoG, Chair of the IEEE SMCS Technical Committee on Intelligent Transportation Systems, and the Chair of the Taiwan SIGSPATIAL ACM Chapter. He was the President of the Taiwan Association of Systems Science and Engineering, the Chair of IEEE SMCS Taipei Chapter, the Chair of the IEEE CIS Taipei Chapter, and the CEO of the Joint Commission of Technological and Vocational College Admission Committee, Taiwan. He received the Most Active TC Award, the Outstanding Chapter Award from IEEE SMCS, and Outstanding Chapter Award from IEEE Taipei Section. He is an IEEE Fellow, IET Fellow, CACS Fellow, and an International Association of Grey System and Uncertain Analysis Fellow.

KEYNOTE SPEECH 3

An Overview of the Collective Intelligence Research Area and Its Computational Aspects

Abstract:

Collective Intelligence as a general concept has long functioned outside the computer science field, and may be best known by the popular idea of “Wisdom of the Crowds”. Yet it is only with application of mathematics and, especially, computer science methods, that the advantages and limitations of Collective Intelligence become clear. Researchers often associate it with research on general collaboration and group decision making topics, artificial and swarm intelligence, social networks and crowdsourcing, as well as different knowledge management aspects. In this talk, more details will be given to the consensus-derived approach to group decision making, as a major part of Computational Collective Intelligence. The underlying principle in the computational aspect of this research area is using formal models to explain real-world events, and in turn, to build practical applications with more realistic behavior. The roots to computer science methods to determine consensus may be found in works dealing with reconciling divergent cladistic trees in biology. Nowadays these are the methods to deal with inconsistent knowledge, often in cases of determining group opinions or decisions. With theoretical principles established two decades ago, modern research is focused on faster algorithms and applications. Ontology alignment is one of the areas, where Computational Collective Intelligence can be applied, first by determining properties of source ontologies, including semantics, then by algorithmically putting them together. Finally, the potential increase of knowledge from the alignment can be estimated. Similarly, the increase of collective knowledge may be estimated in situations such as group decision making, federated data warehouse integration, or in determining the list of experts to review a scientific paper. Computational Collective Intelligence methods may even be applied to model single agents in a social network, to model them in terms of sociological theories on social influence.

Speakers:



Dr. Marcin Maleszka

Assistant Professor of Wroclaw University of Science and Technology, Poland
Department of Information Systems
Member of IEEE SMC Technical Committee on Computational Collective Intelligence
Email: marcin.maleszka@pwr.edu.pl

Marcin Maleszka is an Assistant Professor of Wroclaw University of Science and Technology, where he works in the Information Systems Department in the Faculty of Computer Science and Management. His scientific interests consist of collective intelligence, knowledge engineering, social influence modelling, and multi-agent systems. He is an author or co-author of more than 40 journal and conference papers, and an editor of a book compiling works on information and database systems. He served in Program Chair and Technical Chair roles in almost 20 international conferences, and annually organizes Special Session for the IEEE SMC Technical Committee on Computational Collective Intelligence during SMC and ICCS conference series. He has given invited lectures in Artificial Intelligence and Collective Intelligence postgraduate workshop in Quang Binh University, Vietnam in 2017, and actively cooperated with High Schools to bring top students into research projects.

and



Professor Nguyen Ngoc Thanh

Full Professor of Wroclaw University of Science and Technology
Head of Department of Information Systems
Chair of IEEE SMC Technical Committee on Computational Collective Intelligence
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Nguyen Ngoc Thanh is a state professor of Poland and Vietnam, and a full professor of Wroclaw University of Science and Technology, and the Head of Information Systems Department in the Faculty of Computer Science and Management. His scientific interests consist of collective intelligence, knowledge engineering, inconsistent knowledge processing, and multi-agent systems. He has edited more than 30 special issues in international journals, 52 books and more than 50 conference proceedings. He is an author or co-author of 5 monographs, more than 400 journal and conference papers and 2 patents. Prof. Nguyen serves as Editor-in-Chief of International Journal of Information and Telecommunication (Taylor&Francis), Transactions on Computational Collective Intelligence (Springer), Vietnam Journal of Computer Science (World Scientific) and International Journal of Intelligent Information and Database Systems (Inderscience). He is also an Associate Editor-in-Chief of Applied Intelligence (Springer) and Associate Editor of several prestigious international journals. He was a General Chair or Program Chair of more than 40 international conferences. He serves as an expert of National Center of Research and Development and European Commission in evaluating research projects in several programs like Marie Sklodowska-Curie Individual Fellowships, FET and EUREKA. He has given 20 plenary and keynote speeches for international conferences, and more than 40 invited lectures in many countries. In 2009 prof. Nguyen was granted of title Distinguished Scientist of ACM. He was also a Distinguished Visitor of IEEE and a Distinguished Speaker of ACM. He serves as the Chair of IEEE SMC Technical Committee on Computational Collective Intelligence. Prof. Nguyen is a member of The Committee on Informatics of the Polish Academy of Sciences and The Council of Scientific Excellence of Poland. His homepage: <http://staff-ksi.pwr.edu.pl/nguyen/>

CONFERENCE GUIDELINE

ICSSE 2021 will be hosted online via ZOOM platform!

1. Preparation

Participants are highly suggested to satisfy the following requirements.

1.1 Equipment requirements

- 1) A computer connected to internet (wired connection recommended for the best quality)
- 2) A USB plug-in headset with a microphone (recommended for optimal audio quality)
- 3) A built-in or USB plug-in Webcam

1.2 Environment requirements

- 1) A quiet location/room
- 2) A stable internet connection
- 3) Proper lighting

2. How to use Zoom

Step 1: Download Zoom from the link: <https://zoom.us/download>

Step 2: Sign up for an account

ATTENTION PLEASE! In order for the session chairman and audience to better recognize who you are, it is requested that you create your account name in the following format:

Your Paper ID _ Your Full name

(Example: 123_James Smith)

Step 3: Set up the language(s) and do basic tests

For more operating skills, please watch video tutorials at

<https://support.zoom.us/hc/en-us/articles/206618765-Zoom-Video-Tutorials>

Step 4: How to join the conference online

- 1) Open the provided Conference program, search by your paper ID to find your presentation session. There will be a meeting link and the ID/password of your session.
- 2) Click the meeting link to open ZOOM, click Join, enter the meeting ID and the password, then you will be in the conference.

Step 5: Get familiar with the basic functions: Chat; Raise hands; Screen share; etc. The most important function is Screen share, because you will have to use it at your turn of online presentation on either August 27 or August 28.

3. Pre-conference Zoom connection testing

The online meeting link of each session will be opened on August 26, a day before the Main conference, for testing. We kindly request that you please access the link of your session to master all of the above-mentioned operating functions on Zoom. The detailed testing schedule is available on the conference website: <http://icsse2021.hcmute.edu.vn>

4. Important notes

Please read carefully the followings:

4.1. Your presentation time limit

Due to the extremely tight Agenda of ICSSE 2021, each presentation lasts in 20 minutes within which your live/video presentation should not exceed 15 minutes and then be succeeded by a 5-minute Q&A.

4.2. Your presentation format

You must prepare your presentation in order to deliver in either of the following forms:

- a LIVE presentation, or
- a Pre-recorded presentation video

(This is also a safe back-up solution in case of unstable internet connection)

To deliver your presentation, you should open it in a window before logging into your session.

Video Instructions

To effectively control the time and avoid unexpected delays, it is highly recommended that you record your presentation in advance as a back-up and send this video to us at least 1 week before the conference days. In case of internet connection failure, late arrival/log-in or other technical problems, we could play the video when it is your turn for presentation.

To make this video:

- a) You record a video of yourself speaking in front of the camera, self-introducing your name, affiliation, brief description of scope of your work. Then you go through your slides to present the key points of your research.
- b) You name your video/presentation file and the pre-recorded back-up presentation video with your paper ID and upload them together to <https://driveuploader.com/upload/VPKZsAipT2/> no later than August 19, 2021.

Please be very well-noted that even in the case you have a well-prepared video presentation, you must still be present and ready for the live Q&A within your assigned time slot.

4.3. Recorded ICSSE 2021 Conference

The ICSSE 2021 conference will be FULLY recorded. Thus, we very much appreciate your proper behaviors. And live presentations are highly preferable.

4.4. Local Time Reminder

The time shown in the Conference Program is Coordinated Universal Time (UTC+7) – Vietnam Local Time. You are requested to carefully check for your own assigned presentation time and convert to your local time zone properly.

TIME ZONES

UTC (GMT): Portugal, UK

UTC (GMT) + 1: Poland, Croatia, Czech Republic, Denmark, France, Germany, Hungary, Spain

UTC (GMT) + 2: Romania

UTC (GMT) + 6: Bangladesh, Kazakhstan

UTC (GMT) + 7: Vietnam, Thailand, Indonesia (Jakarta)

UTC (GMT) + 8: Malaysia, Philippines, Singapore, Taiwan

UTC (GMT) + 9: Japan, South Korea

UTC (GMT) + 11: Australia (Melbourne, Sydney)

UTC (GMT) + 13: New Zealand

PROGRAM OUTLINE

TECHNICAL TESTING DAY		
Thursday, 26 August 2021		
UTC + 7	UTC + 8	
08:00 - 17:00 (Vietnam)	09:00 - 18:00 (Taiwan)	Technical Testing and Supports Link: https://zoom.us/j/96073314456?pwd=Z2Jhc3VuaDJ5ZjFlaUtpbWpUjUtdDdz09 Zoom ID: 960 7331 4456 Password: icsse2021

CONFERENCE DAY 1		
Friday, 27 August 2021		
UTC + 7	UTC + 8	
08:00 - 17:00 (Vietnam)	09:00 - 18:00 (Taiwan)	Help Desk Link: https://zoom.us/j/97098410974?pwd=cndOcGY5TUg4SERWZ2x4aSt4TmNFdz09 Zoom ID: 970 9841 0974 Password: icsse2021
08:30 - 09:00 (Vietnam)	09:30 - 10:00 (Taiwan)	Opening Ceremony Assoc. Prof. Dr. Ngo Van Thuyen, University Council Chairman, HCMUTE, Vietnam Prof. Dr. Yo-Ping Huang, President of National Penghu University of Science and Technology, Penghu, Taiwan Dr. Quach Hoai Nam, Vice President, NTU, Vietnam Dr. Tran Nam Tu, Deputy Director General of Science, Technology and Environment Department, MOET, Vietnam Link: https://zoom.us/j/94868278911?pwd=L2xRUTQ0YytlRUdMSzlgWUhrOVJaQT09 Zoom ID: 948 6827 8911 Password: icsse2021
09:00 - 09:45 (Vietnam)	10:00 - 10:45 (Taiwan)	Keynote Speech 1 Speaker: Prof. Dr. Sam Tak Wu Kwong, Department of Computer Science, City University of Hong Kong Topic: Learning Based Video Coding by Data-driven Techniques and Advanced Models Link: https://zoom.us/j/94868278911?pwd=L2xRUTQ0YytlRUdMSzlgWUhrOVJaQT09 Zoom ID: 948 6827 8911 Password: icsse2021
09:45 - 10:30 (Vietnam)	10:45 - 11:30 (Taiwan)	Keynote Speech 2 Speaker: Prof. Dr. Yo-Ping Huang, President of National Penghu University of Science and Technology, Penghu, Taiwan Topic: AIoT Systems and their Applications in Industry and Healthcare Link: https://zoom.us/j/94868278911?pwd=L2xRUTQ0YytlRUdMSzlgWUhrOVJaQT09 Zoom ID: 948 6827 8911 Password: icsse2021
10:30 - 10:40 (Vietnam)	11:30 - 11:40 (Taiwan)	Break Time
10:40 - 11:25 (Vietnam)	05:40 - 06:25 (Poland)	Keynote Speech 3 Speakers: Dr. Marcin Maleszka and Prof. Dr. Nguyen Ngoc Thanh, Wroclaw University of Science and Technology, Poland Topic: An Overview of the Collective Intelligence Research Area and Its Computational Aspects Link: https://zoom.us/j/94868278911?pwd=L2xRUTQ0YytlRUdMSzlgWUhrOVJaQT09 Zoom ID: 948 6827 8911 Password: icsse2021

13:00 - 15:00 (Vietnam)	14:00 - 16:00 (Taiwan)	Parallel session No. 1A (PS-1A) Topic: Artificial Intelligence and Machine Learning Chair: Prof. Dr. Gwo-Ruey Yu, Taiwan Assoc. Prof. Dr. Nguyen Minh Tam, Vietnam Link: https://zoom.us/j/93329010315?pwd=WGdVRXVacW5NYzdSczdPREIVTW5zZz09 Zoom ID: 933 2901 0315 Password: icsse2021
15:00 - 17:00 (Vietnam)	16:00 - 18:00 (Taiwan)	Parallel session No. 1B (PS-1B) Topic: Artificial Intelligence and Machine Learning Chair: Prof. Dr. Pei-Jun Lee, Taiwan Assoc. Prof. Dr. Truong Ngoc Son, Vietnam Link: https://zoom.us/j/93329010315?pwd=WGdVRXVacW5NYzdSczdPREIVTW5zZz09 Zoom ID: 933 2901 0315 Password: icsse2021
13:00 - 15:00 (Vietnam)	14:00 - 16:00 (Taiwan)	Parallel session No. 2A (PS-2A) Topic: Computational Intelligence Systems and Applications Chair: Prof. Dr. Yen-Lin Chen, Taiwan Assoc. Prof. Dr. Phan Van Ca, Vietnam Link: https://zoom.us/j/96414364263?pwd=YIRUOEF6S1NQeXBVTmhZU1YUDNwdz09 Zoom ID: 964 1436 4263 Password: icsse2021
15:00 - 16:40 (Vietnam)	16:00 - 17:40 (Taiwan)	Parallel session No. 2B (PS-2B) Topic: Computational Intelligence Systems and Applications Chair: Prof. Dr. Mei-Yung Chen, Taiwan Assoc. Prof. Dr. Hoang Van Dung, Vietnam Link: https://zoom.us/j/96414364263?pwd=YIRUOEF6S1NQeXBVTmhZU1YUDNwdz09 Zoom ID: 964 1436 4263 Password: icsse2021
13:00 - 15:00 (Vietnam)	14:00 - 16:00 (Taiwan)	Parallel session No. 3A (PS-3A) Topic: Energy Management and Control Systems Chair: Assoc. Prof. Dr. Le Chi Kien, Vietnam Dr. Patricia Josepha Pritadewi, Indonesia Link: https://zoom.us/j/92699879432?pwd=dENWSDJVNEFSbHRSWUVNK0xuMEFIQT09 Zoom ID: 926 9987 9432 Password: icsse2021
13:00 - 15:00 (Vietnam)	14:00 - 16:00 (Taiwan)	Parallel session No. 4A (PS-4A) Topic: Healthcare and Medical Systems Chair: Prof. Dr. Ching-Chih Tsai, Taiwan Assoc. Prof. Dr. Nguyen Thanh Hai, Vietnam Link: https://zoom.us/j/96495901074?pwd=bC9tQ3l3aGhsaERzK1dBRElvbyswZz09 Zoom ID: 964 9590 1074 Password: icsse2021
15:00 - 16:00 (Vietnam)	16:00 - 17:00 (Taiwan)	Parallel session No. 4B (PS-4B) Topic: Healthcare and Medical Systems Chair: Prof. Dr. Feng Hsuan-Ming, Taiwan Dr. Tran Thi Thao, Vietnam Link: https://zoom.us/j/96495901074?pwd=bC9tQ3l3aGhsaERzK1dBRElvbyswZz09 Zoom ID: 964 9590 1074 Password: icsse2021

13:00 - 15:00 (Vietnam)	14:00 - 16:00 (Taiwan)	Parallel session No. 5 (PS-5) Topic: IoT and Its Application Chair: Prof. Dr. Yue-Shan Chang, Taiwan Dr. Pham Ngoc Son, Vietnam Link: https://zoom.us/j/91025197613?pwd=b3dndkEzV3FDeVJsMFM1Z2hCMHJBUT09 Zoom ID: 910 2519 7613 Password: icsse2021
13:00 - 15:00 (Vietnam)	14:00 - 16:00 (Taiwan)	Parallel session No. 6A (PS-6A) Topic: Robotic Vision and Its Application Chair: Prof. Dr. Hsiang-Chieh Chen, Taiwan Dr. Dang Xuan Ba, Vietnam Link: https://zoom.us/j/91719856443?pwd=RWd5SnA2b0xyNXlyd2xPeVFUJWF6Zz09 Zoom ID: 917 1985 6443 Password: icsse2021
15:00 - 16:20 (Vietnam)	16:00 - 17:20 (Taiwan)	Parallel session No. 6B (PS-6B) Topic: Robotic Vision and Its Application Chair: Prof. Dr. Cheng-Ming Huang, Taiwan Assoc. Prof. Dr. Le My Ha, Vietnam Link: https://zoom.us/j/91719856443?pwd=RWd5SnA2b0xyNXlyd2xPeVFUJWF6Zz09 Zoom ID: 917 1985 6443 Password: icsse2021
13:00 - 15:00 (Vietnam)	14:00 - 16:00 (Taiwan)	Parallel session No. 7A (PS-7A) Topic: System Development and Optimization Chair: Dr. Nopadon Maneetien, Thailand Dr. Vu Van Phong, Vietnam Link: https://zoom.us/j/92125793707?pwd=cW45SU9qUzFnSDhtWklyNXJ4cE5adz09 Zoom ID: 921 2579 3707 Password: icsse2021
15:00 - 17:00 (Vietnam)	16:00 - 18:00 (Taiwan)	Parallel session No. 7B (PS-7B) Topic: System Development and Optimization Chair: Prof. Dr. Shyh-Leh Chen, Taiwan Dr. Tran Vi Do, Vietnam Link: https://zoom.us/j/92125793707?pwd=cW45SU9qUzFnSDhtWklyNXJ4cE5adz09 Zoom ID: 921 2579 3707 Password: icsse2021

CONFERENCE DAY 2

Saturday, 28 August 2021

UTC + 7	UTC + 8	
08:00 - 11:30 (Vietnam)	09:30 - 12:30 (Taiwan)	Help Desk Link: https://zoom.us/j/97098410974?pwd=cndOcGY5TUg4SERWZ2x4aSt4TmNFdz09 Zoom ID: 970 9841 0974 Password: icsse2021
08:30 - 11:30 (Vietnam)	09:30 - 12:30 (Taiwan)	Parallel session No. 1C (PS-1C) Topic: Artificial Intelligence and Machine Learning Chair: Prof. Dr. Guo-Shing Huang, Taiwan Dr. Tran Vu Hoang, Vietnam Link: https://zoom.us/j/97263615928?pwd=WV11ZnpQY2ZzaEtEcW1NW1QRzR4Zz09 Zoom ID: 972 6361 5928 Password: icsse2021

08:30 - 11:10 (Vietnam)	09:30 - 12:10 (Taiwan)	Parallel session No. 2C (PS-2C) Topic: Computational Intelligence Systems and Applications Chair: Prof. Dr. Wen June Wang, Taiwan Dr. Vu Van Phong, Vietnam Link: https://zoom.us/j/94334834354?pwd=YVJjcXhXbUJNMFV4N0Z3K0VEOE1sQT09 Zoom ID: 943 3483 4354 Password: icsse2021
08:30 - 10:30 (Vietnam)	09:30 - 11:30 (Taiwan)	Parallel session No. 3B (PS-3B) Topic: Energy Management and Control Systems Chair: Dr. Le Thanh Phuc, Vietnam Dr. Nguyen Xuan Vien, Vietnam Link: https://zoom.us/j/96730144672?pwd=QUtiMmtmenNkU0FDa2pYL1dqN0xFdz09 Zoom ID: 967 3014 4672 Password: icsse2021
08:30 - 10:30 (Vietnam)	09:30 - 11:30 (Taiwan)	Parallel session No. 7C (PS-7C) Topic: System Development and Optimization Chair: Prof. Dr. Cheng-Yuan Chang, Taiwan Assoc. Prof. Dr. Truong Dinh Nhon, Vietnam Link: https://zoom.us/j/91872832872?pwd=amJXcmhuNXhvS29scWpLZ3U0SVIYZz09 Zoom ID: 918 7283 2872 Password: icsse2021
11:30 - 11:40 (Vietnam)	12:30 - 12:40 (Taiwan)	Closing Ceremony Invitation to the next ICSSE2022 Prof. Dr. Yo-Ping Huang, President of National Penghu University of Science and Technology, Penghu, Taiwan Link: https://zoom.us/j/94868278911?pwd=L2xRUTQ0YytIRUdMSzIqWUhrOVJaQT09 Zoom ID: 948 6827 8911 Password: icsse2021

DETAILED PROGRAM OF PARALLEL SESSIONS

CONFERENCE DAY 1 Friday, 27 August 2021		
UTC + 7	UTC + 8	
PS-1A Artificial Intelligence and Machine Learning		Chair: Prof. Dr. Gwo-Ruey Yu, Taiwan Assoc. Prof. Dr. Nguyen Minh Tam, Vietnam Link: https://zoom.us/j/93329010315?pwd=WGdVRXVAcW5NYzdSczdPREIVTW5zZz09 Zoom ID: 933 2901 0315 Password: icsse2021
13:00 - 14:00 (Vietnam)	14:00 - 15:00 (Taiwan)	3 - Impact of Covid-19 And SLP-SVR Algorithms on Short-Term Load Forecast, Case Study: EVNHCMC <i>Nguyen Tuan Dung, Nguyen Thanh Phuong and Nguyen Huu Vinh</i> 10 - Steering Angle Estimation for Self-driving Car Based on Enhanced Semantic Segmentation <i>Thanh-Danh Phan, Hoang-Hai-Nam Nguyen, Ngoc-Hien-Duc Le, Thanh-Sang Nguyen, Minh-Thien Duong and My-Ha Le</i> 22 - A Deep Reinforcement Learning Model using Long Contexts for Chatbots <i>Quoc-Dai Luong Tran and Anh-Cuong Le</i>
14:00 - 15:00 (Vietnam)	15:00 - 16:00 (Taiwan)	23 - Multi-view Transformation in Recommender Systems <i>Thi-Linh Ho and Anh-Cuong Le</i> 29 - A High-Performance Speech-Recognition Method Based on a Nonlinear Neural Network <i>Phung Hung Binh, Pham Viet Hoang and Dang Xuan Ba</i> 32 - An Efficient Data Collecting Method for Enhanced Real-Time Drowsiness Detection Systems <i>Minh-Thien Duong, Truong-Dong Do, Manh Cuong Le, Van-Binh Nguyen and My-Ha Le</i>
PS-1B Artificial Intelligence and Machine Learning		Chair: Prof. Dr. Pei-Jun Lee, Taiwan Assoc. Prof. Dr. Truong Ngoc Son, Vietnam Link: https://zoom.us/j/93329010315?pwd=WGdVRXVAcW5NYzdSczdPREIVTW5zZz09 Zoom ID: 933 2901 0315 Password: icsse2021
15:00 - 16:00 (Vietnam)	16:00 - 17:00 (Taiwan)	37 - Clustering based Ship Classification using radar signal and Neuron Network <i>Duc-Dat Ngo, Manh-Hung Nguyen, Quang-Thai-Dan Nguyen and My-Ha Le</i> 39 - Efficient 3D Face Reconstruction Model Based on Dense Mesh Solution using Rendering and Partial Search <i>Tran Duc Long and Ngo Hai Linh</i> 60 - MiniRos: an Autonomous UGV Robot for Education and Research <i>Tri Bien Minh, Hua Thanh Luan, Do Xuan Phu, Tran Quang Nhu and Bui Minh Duong</i>
16:00 - 17:00 (Vietnam)	17:00 - 18:00 (Taiwan)	74 - Robust System for Counting Movement-Specific Vehicle at Crowded Intersections in HCM City <i>Le-Hoai-Hieu Dang, Van-Tin Luu, Vu-Hoang Tran and Ton-Nghia Huynh</i> 77 - Evaluating AI Chatbot Platforms by a Fuzzy AHP Approach <i>Phan-Anh-Huy Nguyen</i> 139 - Indirect Learning for Deep Reinforcement Learning <i>Haobin Shi, JinHui Zhu and Kao-Shing Hwang</i>

PS-2A Computational Intelligence Systems and Applications		Chair: Prof. Dr. Yen-Lin Chen, Taiwan Assoc. Prof. Dr. Phan Van Ca, Vietnam Link: https://zoom.us/j/96414364263?pwd=YIRUOEF6S1NQeXBVTmhZU1YUDNwdz09 Zoom ID: 964 1436 4263 Password: icsse2021
13:00 - 14:00 (Vietnam)	14:00 - 15:00 (Taiwan)	4 - Research on Cooperative Adaptive Cruise Control System for Autonomous Vehicles based on Distributed Model Predictive Control <i>Duc Lich Luu, Huu Truyen Pham, Ciprian Lupu, Thanh Binh Nguyen and Sang Truong Ha</i> 5 - A LQR-based Neural-network Controller for Fast Stabilizing Rotary Inverted Pendulum <i>Huynh Vinh Nghi, Dinh Phuoc Nhien, Nguyen Tran Minh Nguyet, Nguyen Tu Duc, Nguyen Phong Luu, Phung Son Thanh, Le Thi Hong Lam and Dang Xuan Ba</i> 8 - STM32F407 Implementation of Unipolar SPWM for Three-phase 3 Level Inverter <i>Hung Nguyen Tan, Hoan Phan Van, Thao Nguyen Duy and Tri Do Duc</i>
14:00 - 15:00 (Vietnam)	15:00 - 16:00 (Taiwan)	21 - Research the Anti-dazzle Headlight System by Leds Matrix with Image Processing Method <i>Nguyen Van Long Giang and Nguyen Thien Dinh</i> 31 - Multi-Oriented License Plate Detection Based On Convolutional Neural Networks <i>Lam Mai, Xiu-Zhi Chen and Yen-Lin Chen</i> 35 - An Intelligent Control Method for Redundant Robotic Manipulators with Output Constraints <i>Dinh Manh Hung, Dao Tung Linh and Dang Xuan Ba</i>
PS-2B Computational Intelligence Systems and Applications		Chair: Prof. Dr. Mei-Yung Chen, Taiwan Assoc. Prof. Dr. Hoang Van Dung, Vietnam Link: https://zoom.us/j/96414364263?pwd=YIRUOEF6S1NQeXBVTmhZU1YUDNwdz09 Zoom ID: 964 1436 4263 Password: icsse2021
15:00 - 16:00 (Vietnam)	16:00 - 17:00 (Taiwan)	59 - Adaptive Optimal Control of Four-Wheel Omni Robot using Reinforcement Learning <i>Tuan Nguyen Khac, Nguyen Thai Huu, Minh Nguyen Van and Tuyen Bui Trung</i> 67 - Developing a Tool for Symmetrical and Unsymmetrical Faults Analysis in Power System <i>Dung Vo Tien and Radomir Gono</i> 78 - Design of Delta Robot Using Image Processing for Product Sorting Process <i>Tran Vi Do, Nguyen Quoc Nam, Dang Duc Vinh, Nguyen Quoc Viet, Pham Nguyen Dat and Tran Van Hung</i>
16:00 - 16:40 (Vietnam)	17:00 - 17:40 (Taiwan)	107 - Restoring Force Model of a Pneumatic Artificial Muscle Actuator <i>V.N. Ho, V.V.Hoang and T.D.Le</i> 116 - A Novel Intelligent Control System Design for Aircraft Flight Dynamics <i>Vi H. Nguyen and Thanh T. Tran</i>
PS-3A Energy Management and Control Systems		Chair: Assoc. Prof. Dr. Le Chi Kien, Vietnam Dr. Patricia Josepha Pritadewi, Indonesia Link: https://zoom.us/j/92699879432?pwd=dENWSDJVNEFSbHRSWUVNK0xuMEFIQT09 Zoom ID: 926 9987 9432 Password: icsse2021

15:00 - 16:00 (Vietnam)	16:00 - 17:00 (Taiwan)	<p>2 - Application Firefly Algorithm for Improvement STATCOM Controller to Enhance the Stability in a Grid Connected to Wind Power <i>Huu-Vinh Nguyen, Hung Nguyen, Kim-Hung Le, Minh-Tien Cao, Qui-Thoi Le and Ngoc-Tuan Tran</i></p> <p>20 - An Advanced Fuzzy Control for Maximum Power Point Tracking PV System Optimized with Modified MDE Algorithm <i>Tran Thai Thong, Tran Thien Huan, Cao Van Kien and Ho Pham Huy Anh</i></p> <p>62 - Applying Dynamic Voltage Restorer to Mitigate the Voltage Sag in the Grid Connected Solar PV System <i>Dinh-Nhon Truong, Mi-Sa Nguyen Thi, Van-Thuyen Ngo, Van-Phuong Ta, Van-Tri Bui and Huu-Vinh Nguyen</i></p>
16:00 - 17:00 (Vietnam)	17:00 - 18:00 (Taiwan)	<p>63 - Applying IoT Platform to Design a Data Collection System for Hybrid Power System <i>Van-Thuyen Ngo, Mi-Sa Nguyen Thi, Dinh-Nhon Truong, An-Quoc Hoang, Phuong-Nam Tran and Ngoc-An Bui</i></p> <p>82 - Control and Monitor of Single-Stage Single-Phase T-type Grid-connected Inverter based on IoT <i>Le Quang Huy, Nguyen Duc Hung, Truong Phuoc Hoa and Nguyen Dinh Tuyen</i></p> <p>142 - Harmonic Distortion Reduction in High Power Systems Supplying AC Electric Railway using SVC <i>Tien Trung Vo and Minh Thu Nguyen</i></p>
<p>PS-4A Healthcare and Medical Systems</p>		<p>Chair: Prof. Dr. Ching-Chih Tsai, Taiwan Assoc. Prof. Dr. Nguyen Thanh Hai, Vietnam Link: https://zoom.us/j/96495901074?pwd=bC9tQ3l3aGhsaERzK1dBRlVbyswZz09 Zoom ID: 964 9590 1074 Password: icsse2021</p>
13:00 - 14:00 (Vietnam)	14:00 - 15:00 (Taiwan)	<p>12 - Structure Preserving in X-ray Image Enhancement <i>Kim Hoanh-Ly, Thi Quynh Nhu-Tran, Ngoc Tham-Vo and Manh-Hung Nguyen</i></p> <p>33 - The novel method of pedestrian fall detection based on PSO and RF using accelerometer data <i>Hong-Lam Le, Duc-Nhan Nguyen and Ha-Nam Nguyen</i></p> <p>70 - Stroke-Gait Detection by DNN Models Employing Gait Data from Different Sensor Systems <i>Chih-Jen Shih, Tien-Yun Kuo, You-Chi Li, Szu-Fu Chen, Chin-Hsien Lin and Fu-Cheng Wang</i></p>
14:00 - 15:00 (Vietnam)	15:00 - 16:00 (Taiwan)	<p>94 - Control of a Smart Electric Wheelchair Based on EEG Signal and Graphical User Interface for Disabled People <i>Ba-Viet Ngo, Thanh-Hai Nguyen, Dang-Khoa Tran and Duc-Dung Vo</i></p> <p>97 - Amplitude Thresholding of EEG Signals For Eye Blink and Saccade Detection <i>Dang-Khoa Tran, Thanh-Hai Nguyen and Ba-Viet Ngo</i></p> <p>98 - A Remote Diagnostic System using Deep Learning Network for Heart Disease Detection <i>Thanh-Nghia Nguyen, Thanh-Hai Nguyen and Thanh-Tam Nguyen</i></p>
<p>PS-4B Healthcare and Medical Systems</p>		<p>Chair: Prof. Dr. Feng Hsuan-Ming, Taiwan Dr. Tran Thi Thao, Vietnam Link: https://zoom.us/j/96495901074?pwd=bC9tQ3l3aGhsaERzK1dBRlVbyswZz09 Zoom ID: 964 9590 1074 Password: icsse2021</p>

15:00 - 16:00 (Vietnam)	16:00 - 17:00 (Taiwan)	<p>104 - A GLCM Algorithm for Optimal Features of Mammographic Images for Detection of Breast Cancer <i>Thanh-Tam Nguyen, Thanh-Hai Nguyen and Ba-Viet Ngo</i></p> <p>109 - Design of Compact Upper Exoskeleton: A New View of Variable Stiffness Mechanism <i>Phan Huu Thanh Tu, Do Xuan Phu and Le Van Chi</i></p> <p>137 - Design and Implementation of Platform for Collecting Physiological and Psychological Data for Mood Status Inference <i>Wei-Ting Yen, Kuo-Hsuan Chung, Linen Lin and Yue-Shan Chang</i></p>
<p>PS-5 IoT and Its Application</p>		<p>Chair: Prof. Dr. Yue-Shan Chang, Taiwan Dr. Pham Ngoc Son, Vietnam</p> <p>Link: https://zoom.us/j/91025197613?pwd=b3dndkEzV3FDeVJsMFM1Z2hCMHJBUT09</p> <p>Zoom ID: 910 2519 7613 Password: icsse2021</p>
13:00 - 14:00 (Vietnam)	14:00 - 15:00 (Taiwan)	<p>38 - A Scalable Virtual Try-on System based on Cloud Computing <i>Duong Van Ngoc and Cao Xuan Canh</i></p> <p>114 - An Adaptive Thresholding Based Method to Locate and Segment Defects on LCD Panels <i>Kanika Bhalla and Yo-Ping Huang</i></p> <p>115 - Assessment of Mel-Filter Bank Features on Sound Classifications Using Deep Convolutional Neural Network <i>Richard Mushi and Yo-Ping Huang</i></p>
14:00 - 15:00 (Vietnam)	15:00 - 16:00 (Taiwan)	<p>120 - Internet of Things Applied to Bicycle Power Generation System <i>Wen-Hau Jian, Guo-Wei Gao, Meng-Chien Wu and Chen Mei-Yung</i></p> <p>140 - Building a Support System for Time Study to Calculate The Standard Time at Production Line <i>Minh-Tai Le and Duc-Thang Nguyen</i></p> <p>149 - Highly Sensitive Optical Sensor Based on Resonance Shift Mechanism for Seawater Salinity Sensing integrated with Wireless Sensor Networks <i>Tuan Anh Nguyen, Duy Tien Le and Trung Thanh Le</i></p>
<p>PS-6A Robotic Vision and Its Application</p>		<p>Chair: Prof. Dr. Hsiang-Chieh Chen, Taiwan Dr. Dang Xuan Ba, Vietnam</p> <p>Link: https://zoom.us/j/91719856443?pwd=RWd5SnA2b0xyNXlyd2xPeVFUJWF6Zz09</p> <p>Zoom ID: 917 1985 6443 Password: icsse2021</p>
13:00 - 14:00 (Vietnam)	14:00 - 15:00 (Taiwan)	<p>11 - Synchronization Sliding Mode Control with Time-Delay Estimation for a 2-DOF Closed-Kinematic Chain Robot Manipulator <i>Tu T. C. Duong, Tran Duc Thien, Nguyen Tran Tri, Duong Vinh Nghi</i></p> <p>18 - Autonomous Landing of a Quadcopter on a Stationary Platform <i>Ngoc-Hien-Duc Le, Thuy-Huynh Duong, Huy-Phuong Le, Tran-Nhat-Minh Ta and My-Ha Le</i></p> <p>58 - Enhancement of Robustness in Object Detection Module for Advanced Driver Assistance Systems <i>Le-Anh Tran, Truong-Dong Do, Dong-Chul Park and My-Ha Le</i></p>
14:00 - 15:00 (Vietnam)	15:00 - 16:00 (Taiwan)	<p>81 - Using Deep Learning in The Development of A Welding Practice Training Support System <i>Pham-Tuan-Anh Phung, Ngoc-Thien Tran, Vu-Hoang Tran and Ton-Nghia Huynh</i></p> <p>99 - The Practice of Mapping-based Navigation System for Indoor Robot with RPLIDAR and Raspberry Pi</p>

		<p><i>Dang Thai Son, Mai The Anh, Duong Dinh Tu, Le Van Chuong, Ta Hung Cuong and Ho Sy Phuong</i></p> <p>103 - A Computer Vision System for Power Transmission Line Inspection Robot <i>Huu Tho Tran, Minh Quan Tran, Quang Huy Chan and Viet Cuong Pham</i></p>
<p>PS-6B Robotic Vision and Its Application</p>		<p>Chair: Prof. Dr. Cheng-Ming Huang, Taiwan Assoc. Prof. Dr. Le My Ha, Vietnam Link: https://zoom.us/j/91719856443?pwd=RWd5SnA2b0xyNXlyd2xPeVFUJWF6Zz09 Zoom ID: 917 1985 6443 Password: icsse2021</p>
<p>15:00 - 16:20 (Vietnam)</p>	<p>16:00 - 17:20 (Taiwan)</p>	<p>123 - Visual Hull Refinement with Hierarchical Clustering Deformation for 3-D Reconstruction <i>Yung-Yang Chiang, Huei-Yung Lin and Min-Liang Wang</i></p> <p>125 - Combination of Two Visual Servoing Techniques in Contour Following Task <i>Vo Duy Cong and Le Duc Hanh</i></p> <p>131 - A Study on the Application of Industrial Robot Based on the Integration of Speech Recognition and Image Processing <i>Jia-Xing Chen, Guo-Shing Huang and Meng-Hua Yen</i></p> <p>135 - Completing a Six-sided 3D Puzzle using SCARA <i>Hsiang-Chieh Chen, Chun-Ting Tsai and Chen-Yu Lin</i></p>
<p>PS-7A System Development and Optimization</p>		<p>Chair: Dr. Nopadon Maneetien, Thailand Dr. Vu Van Phong, Vietnam Link: https://zoom.us/j/92125793707?pwd=cW45SU9qUzFnSDhtWklyNXJ4cE5adz09 Zoom ID: 921 2579 3707 Password: icsse2021</p>
<p>13:00 - 14:00 (Vietnam)</p>	<p>14:00 - 15:00 (Taiwan)</p>	<p>17 - An Anti-disturbance Backstepping Control for A Two-axis Gimbal System with Euler Angle Feedback and Delayed Inputs <i>Thinh Huynh, Minh Thien Tran and Young-Bok Kim</i></p> <p>19 - Robust Biped Walking Pattern Generation Using Hybrid Nonlinear Autoregressive eXogenous and Multi-Layer Perceptron Neural Networks Optimized by Improved Differential Evolution Algorithm <i>Tran Thien Huan, Le Vinh Thinh, Cao Van Kien and Ho Pham Huy Anh</i></p> <p>26 - A Smart Direct Controller for a 3-DOF Robot <i>Pham Tan Phat, Bui Manh Huy and Dang Xuan Ba</i></p>
<p>14:00 - 15:00 (Vietnam)</p>	<p>15:00 - 16:00 (Taiwan)</p>	<p>41 - Kinematics, dynamics, and control design for a 4-DOF robotic manipulator <i>Thien-Quang Nguyen, Van-Truong Phan, Duy-Thien Vo, Van-Hoang Trinh, Hoang-Viet Nguyen, Manh-Son Tran and Duc-Thien Tran</i></p> <p>42 - A Shortest Smooth-path Motion Planning for a Mobile Robot with Nonholonomic Constraints <i>Hung Hoang, Anh Khoa Tran, Lam Nhat Thai Tran, My-Ha Le and Duc-Thien Tran</i></p> <p>43 - Kinematics and Dynamics for a 4-DOF Parallel Robot <i>Kien Cuong Dinh, Ngoc Sang Dao, Hai Dang Le, Hoang Lam Le, Tu Duong Thi Cam and Duc Thien Tran</i></p>
<p>PS-7B System Development and Optimization</p>		<p>Chair: Prof. Dr. Shyh-Leh Chen, Taiwan Dr. Tran Vi Do, Vietnam Link: https://zoom.us/j/92125793707?pwd=cW45SU9qUzFnSDhtWklyNXJ4cE5adz09 Zoom ID: 921 2579 3707 Password: icsse2021</p>

15:00 - 16:00 (Vietnam)	16:00 - 17:00 (Taiwan)	<p>65 - Directional Dependency for Feedforward Active Noise Control Systems with In-Ear Headphones <i>Chong-Rui Huang, Cheng-Yuan Chang and Sen M. Kuo</i></p> <p>90 - A Modified Deadbeat Current Controller for Field Oriented Induction Motor Drivers <i>Le Nam Duong, Vu Hoang Phuong, Nguyen Van Lien and Tran Trong Minh</i></p> <p>91 - Voltage Sag Reduction using a Dynamic Voltage Restorer under Different Types of Faults in The Power System <i>Trinh Tran Duy, Tuyen Bui Trung and Dung Vo Tien</i></p>
16:00 - 17:00 (Vietnam)	17:00 - 18:00 (Taiwan)	<p>92 - Research to Evaluate the Regenerative Braking System Effect on Fuel Consumption of Hybrid Vehicle <i>Tuan-Tung Duong, Phuoc-Son Huynh and Quang-Thanh Ngo</i></p> <p>96 - Experimental Research on Driver Behavior Monitoring Device apply to Transportation and Insurance Field <i>Dung Do Van, Vu Nguyen Tien, Tung Duong Tuan, Sang Nguyen Cong</i></p> <p>101 - Performance Parameters Reevaluate and Predict the Fuel Consumption of Cummin Engine Running on CNG-Diesel Dual Fuel by GT-Power Software <i>Nguyen Phu Dong, Nguyen Thanh Tuan and Radek Procházka</i></p>

CONFERENCE DAY 2 Saturday, 28 August 2021

UTC + 7	UTC + 8	
PS-1C Artificial Intelligence and Machine Learning		Chair: Prof. Dr. Guo-Shing Huang, Taiwan Dr. Tran Vu Hoang, Vietnam Link: https://zoom.us/j/97263615928?pwd=WV11ZnpQY2ZzaEtEcW1INW1QRzR4Zz09 Zoom ID: 972 6361 5928 Password: icsse2021
08:30 - 09:30 (Vietnam)	09:30 - 10:30 (Taiwan)	<p>79 - An Analysis of State-of-the-art Activation Functions for Supervised Deep Neural Network <i>Anh Nguyen, Khoa Pham, Dat Ngo, Thanh Ngo and Lam Pham</i></p> <p>80 - Depth Embedded and Dense Dilated Convolutional Network for Crowd Density Estimation <i>Minh-Nghia Nguyen, Vu-Hoang Tran and Ton-Nghia Huynh</i></p> <p>112 - Intelligent Fault Diagnosis Based on Multi-Resolution and One-Dimension Convolutional Neural Networks <i>Po-Yi Liu, Chih-Cheng Chen, Sze-Teng Liong, Ming-Han Tsai, Ping-Cheng Hsieh and Kun-Ching Wang</i></p>
09:30 - 10:30 (Vietnam)	10:30 - 11:30 (Taiwan)	<p>124 - Edge Detection Cascaded with Simplified WDSR of IR Super Resolution <i>Kuan-Min Lee, Pei-Jun Lee and Trong-An Bui</i></p> <p>133 - Federated Learning Architecture for Bearing Fault Diagnosis <i>Guan-Ying Huang and Ching-Hung Lee</i></p> <p>138 - Neuromorphic Character Recognition using The Single Memristor Crossbar Array <i>Minh Le and Son Ngoc Truong</i></p>
10:30 - 11:30 (Vietnam)	11:30 - 12:30 (Taiwan)	<p>141 - Transformer based Refinement Network for Accurate Crack Detection <i>Jing-Ming Guo and Herleeyandi Markoni</i></p> <p>144 - PointCNN-Hand: 3D Hand Joints Estimate by PointCNN from Hand Point Cloud</p>

		<p><i>Jia-Hong Chen and Chen-Chien Hsu</i></p> <p>147 - A Study of Word Presentation in Vietnamese Sentiment Analysis <i>Hoang-Quan Nguyen, Ly Vu and Quang Uy Nguyen</i></p>
<p>PS-2C Computational Intelligence Systems and Applications</p>		<p>Chair: Prof. Dr. Wen June Wang, Taiwan Dr. Vu Van Phong, Vietnam</p> <p>Link: https://zoom.us/j/94334834354?pwd=YVJJcXhXbUJNMfV4N0Z3K0VEOE1sQT09 Zoom ID: 943 3483 4354 Password: icsse2021</p>
<p>08:30 - 09:30 (Vietnam)</p>	<p>09:30 - 10:30 (Taiwan)</p>	<p>118 - Temporal-spatial bitrate-adaptivity for OTT service <i>S.M.Tran, T.H.Tran, H.M.Le, T.B.N.Truong and T.L.Nguyen</i></p> <p>119 - Path Planning and Obstacle Avoidance Based on Reinforcement Learning for UAV Application <i>Guan-Ting Tu and Jih-Gau Juang</i></p> <p>121 - A Method to Ensure Compliance with Attribute and Role Based Access Control Policy for Executing BPMN Models <i>Duc-Hieu Nguyen, Van-Vinh Le, Thi-Hanh Nguyen and Duc-Hanh Dang</i></p>
<p>09:30 - 10:30 (Vietnam)</p>	<p>10:30 - 11:30 (Taiwan)</p>	<p>126 - Fuzzy Logic Based LQG Controller Design for Inverted Pendulum on Cart <i>Anh-Vu Nguyen, Van-Thuyen Ngo, Wen-June Wang, Van-Phong Vu, Thanh-Quyen Ngo and Anh-Tuan Nguyen</i></p> <p>129 - Self-Localization Applications of Soccer Robot through Deep Learning Machine <i>Shih-An Li, Hsuan-Ming Feng, Ching-Chang Wong and Chen-You Chu</i></p> <p>134 - Adaptive Fuzzy Backstepping Control for Ballbot Segway <i>Nguyen Huu Thai, Hai Xuan Le, Dat Xuan Pham, Duc Anh Nguyen, Minh Vo Ngoc Nguyen and Minh Xuan Phan</i></p>
<p>10:30 - 11:10 (Vietnam)</p>	<p>11:30 - 12:10 (Taiwan)</p>	<p>145 - A time-dependent Motion Planning System for Mobile Service Robots in Dynamic Social Environments <i>Van Bay Hoang, Lan Anh Nguyen, Pham Van Nguyen and Xuan-Tung Truong</i></p> <p>148 - Adaptive Nonlinear PID Control Using Output Recurrent Broad Learning System for Discrete-Time Nonlinear Dynamic Systems <i>Guo-Shun Hung and Ching-Chih Tsai</i></p>
<p>PS-3B Energy Management and Control Systems</p>		<p>Chair: Dr. Le Thanh Phuc, Vietnam Dr. Nguyen Xuan Vien, Vietnam</p> <p>Link: https://zoom.us/j/96730144672?pwd=QUtiMmtmenNkU0FDa2pYL1dqN0xFdz09 Zoom ID: 967 3014 4672 Password: icsse2021</p>
<p>08:30 - 09:30 (Vietnam)</p>	<p>09:30 - 10:30 (Taiwan)</p>	<p>6 - Research on Building of Power Characteristics of the Main Diesel Engines under pressure in High-pressure Pipelines and End-of-stroke Compression pressure by Lagrange Interpolation <i>Ho Duc Tuan, Quach Hoai Nam and Mai Duc Nghia</i></p> <p>84 - Numerical Simulation on the Effect of Cooling Channel Design on the Warpage of the Injection Molding Product <i>Tran-Phu Nguyen, Ha-Phuong Vu and Thanh-Long Le</i></p> <p>110 - An Experimental on Subcooling Potential by Geothermal in CO₂ Air Conditioning System <i>Thanhtrung Dang, Vanpha Nguyen, Giahuy Dang, Hoangtuan Nguyen and Jau-Huai Lu</i></p>

<p>09:30 - 10:30 (Vietnam)</p>	<p>10:30 - 11:30 (Taiwan)</p>	<p>113 - An Experimental Investigation on Pressure Drop and Heat Transfer Behaviors of the Microchannel Evaporators Using the Boiler Feed Water <i>Thanhtrung Dang, Huyvu Nguyen, Batan Le and Jyh-Tong Teng</i></p> <p>127 - An Experimental Research The Effect of The Pressure in High-Pressure Pipelines on Exhaust Emissions of The Fishing Vessels' Main Diesel Engines <i>Mai Duc Nghia, Ho Duc Tuan and Quach Hoai Nam</i></p> <p>150 - An Investigation on Power Generation Characteristics of Linear Generator Driven by a Free-piston Engine <i>Nguyen Huynh Thi, Nguyen Van Trang, Huynh Thanh Cong, Dao Huu Huy, Huynh Van Loc, Truong Hoa Hiep and Vo Bao Toan</i></p>
<p>PS-7C System Development and Optimization</p>		<p>Chair: Prof. Dr. Cheng-Yuan Chang, Taiwan Assoc. Prof. Dr. Truong Dinh Nhon, Vietnam Link: https://zoom.us/j/91872832872?pwd=amJXcmhuNXhvS29scWpLZ3U0SVlYZz09 Zoom ID: 918 7283 2872 Password: icsse2021</p>
<p>08:30 - 09:30 (Vietnam)</p>	<p>09:30 - 10:30 (Taiwan)</p>	<p>106 - Identification of Friction Force Model of a Pneumatic Cylinder <i>N.Y.P Vo, M.K Nguyen and T.D. Le</i></p> <p>122 - Online Rotor and Stator Resistance Estimation Using Neural Network for Indirect Vector Controlled Speed Sensorless Induction Motor Drive <i>Tuan Pham Van, Nguyen Thai Huu, Hoa Bui Thanh and Long Nguyen Thanh</i></p> <p>128 - Robust Control of a Magnetic Rotor-Bearing System with Estimation of Uncertainty Bound <i>Ting-Chi Yeh, Shyh-Leh Chen and Chin-Hsiang Lin</i></p>
<p>09:30 - 10:30 (Vietnam)</p>	<p>10:30 - 11:30 (Taiwan)</p>	<p>136 - Optimal Reactive Power Dispatch Using SunFlower Algorithm <i>Van Tuan Duong, Thanh Long Duong, Thuan Thanh Nguyen and Anh-Viet Truong</i></p> <p>143 - PSO-based H_∞ Fuzzy Control of an Underactuated Robot Using Linear Matrix Inequality <i>Gwo-Ruey Yu, H.-T. Hsieh, F.-Y. Wei</i></p> <p>146 - Abnormal Air Quality Change Detection Assisted by Micro-stations <i>Chao-Ting Chen and Yue-Shan Chang</i></p>

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ANNOUNCEMENT

Sponsorship Program for Scientific and Technological Research

I. Scientific and technological research fields

There is no limit but the following fields should be of the highest interests: Mechanical and Automatic Engineering, Electrical – Electronics and Information Technology; Chemistry, Pharmacy and Food Technology; Material Technology; Biotechnology; Urban Development and Management. Among these, priority is given to products, services and solutions that are applied directly to production and bring high socio-economic efficiency with co-investments from other sources.

II. Research categories

1. Ordered research

Educational and Research Institutions have to submit applications according to the List of science and technology tasks which is announced by the Ho Chi Minh City Department of Science and Technology annually.

2. Sponsored research

Educational and Research Institutions may propose their own scientific and technological tasks. The maximum support fund is 1 billion VND for tasks in the fields of natural sciences and engineering sciences; and a maximum of 500 million VND for tasks in the field of social sciences and humanities.

3. Featured product development

Educational and Research Institutions cooperate with industrial enterprises in proposing scientific and technological tasks to form and develop expected products with large market size and high economic value. Contribution from the companies is required no less than 50% of the total cost.

4. Start-up project

Incubation organizations propose innovation projects.
The support budget shall not exceed 2 billion VND/project.

III. General Information

1. Detailed information:

<http://www.dost.hochiminhcity.gov.vn>

For the Start-up project, please visit <http://sihub.vn/speedup2019/>

2. Proposal submission:

Online or by courier or Email.

For the Start-up project, please submit through <http://sihub.vn/speedup2019/>

or through email: speedup@sihub.vn

3. Submission time:

Starting from 01/03/2022

4. Result announcement:

For proposals submitted before 31/03: Consideration and selection in April.

For proposals submitted before 30/06: Consideration and selection in July

For proposals submitted before 30/09: Consideration and selection in October

5. Contact information:

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