

The 6th International Conference on Artificial Intelligence in Information and Communication



IEEE ICAIIC 2024

IEEE ComSoc
IEEE Communications Society

February 19 (Mon.) ~ 23 (Thur.), 2024

Osaka University Nakanoshima Center, Osaka, Japan & Virtual Conference

<http://icaaic.org>



Final Program

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Message from Organizing Chairs

Welcome to ICAIIIC 2024, the Sixth International Conference on Artificial Intelligence in Information and Communication, organized by the Korean Institute of Communications and Information Sciences (KICS) and Graduate School of Information Science and Technology of Osaka University and technically cosponsored by IEEE Communications Society (ComSoC), IEICE-CS, and IEICE NOLTA Society. It has been a real honor and privilege to serve as the General Chairs. The ICAIIIC conference is pursuing a premier international forum to provide a great opportunity for exchanging the state-of-the-art research advances in artificial intelligence in information and communication and future ICT convergence technologies and expanding the research community.

We would like to welcome you to Osaka! Osaka was established as one of Japan's very first capitals in the 7th century and evolved into the central port city. Osaka is the third-most populous city in Japan. Since 1980, Osaka has been the second largest city in Japan. Osaka was traditionally considered Japan's economic hub. Osaka is a major financial center of Japan, and it is recognized as one of the most multicultural and cosmopolitan cities in Japan. Famous landmarks in the city include Osaka Castle, Shinsekai, Umeda Sky Building, Tsutenkaku, Dōtonbori, Universal Studios Japan, and Shitennoji temple, one of the oldest Buddhist temples in Japan. And with popular destinations such as Kyoto, Nara, and Kobe just next door, the region is overflowing with captivating sites and attractions to explore.

We have prepared an exciting program for you in ICAIIIC 2024. The safety and well-being of all conference participants is our priority. The conference will be a combination of online and offline events. We would like to express our sincere gratitude to all committee members and referees who made tremendous contributions to this event. On behalf of the ICAIIIC steering committee and on behalf of all attendees, we thank the President of KICS AI Society, professor Dong Seog Han, for producing such an excellent program. We also thank professor Naoki Wakamiya of Osaka University for helping our conference. Thanks to the tireless efforts of the Technical Program Committee Chairs, Professors Youn-Hee Han, Dongkyun Kim, Mikio Hasegawa, Benaoumeur Senouci, and all TPC members, ICAIIIC 2024 is packed with an excellent mix of technical sessions, tutorial sessions, and keynote speeches.

We do hope that you will take this unique opportunity to attend the technical sessions, meet the authors, and foster greater collaboration with other researchers. The Organizing Committee put a lot of effort into making this conference greatly successful and enjoyable. Last, but certainly not least, Our thanks go to all the authors who submitted papers and all the attendees. We look forward to seeing you in Osaka and online! We also wish your active participation in the future event.



Yeong Min Jang
Kookmin Univ., Korea



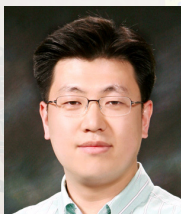
Takeo FUJII
The Univ. of Electro-Comms, Japan

Message from TPC Chairs

It is our great pleasure to welcome all of you to Osaka, Japan, for the 6th International Conference on Artificial Intelligence in Information and Communication (ICAIIIC). ICAIIIC has addressed all aspects of artificial intelligence (AI), computing, networking, communications, and their convergence. This ICAIIIC 2024 will also be a successful conference covering a wide range of topics on various AI technologies and many forms of information and communication systems with AI.

This year, we have received 343 paper submissions electronically from 33 countries in the world. Many of the papers were submitted from the Asia/Pacific region, and also an increasing number of submissions were made from Europe and North America. By a rigorous review process, all papers underwent evaluation by qualified reviewers. Following the reviews and discussions, we selected 154 papers for oral presentations and 16 for poster presentations, making a total of 170 papers. The accepted technical papers were organized into 32 technical oral sessions and 1 technical poster session, which will be held in 4 parallel tracks. The program is designed to provide a broad range of Wireless Communication, Information and Communications Technology, Security, Language, Brain, Image Processing and Multimedia, Medical Diagnosis and eHealth, AI Foundation, Decision and Control, and Applications for Information Systems. The conference will also be highlighted by keynote speeches and tutorials from world-renowned researchers from around the world.

Along with the contributions of prominent authors from around the world, we believe that this year's valuable and interesting program is possible by the commitment of the technical program members. We are indebted to all of the 263 TPC members for their active participation and precious time. We would also like to thank our sponsors, KICS, IEEE Communications Society, and IEICE Communications Society, for their kind support of this successful event. We express our deepest gratitude to the Organizing Committee Chairs, Prof. Yeong Min Jang, Prof. Takeo Fujii, and Prof. Dong Seog Han, for their continued support and guidance. We hope that all of you will enjoy the splendid program of ICAIIIC 2024 as well as the beautiful scenery and charm of Osaka.



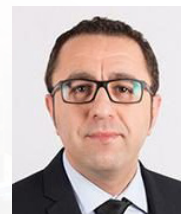
Youn-Hee Han
KOREATECH,
Republic of Korea



Dongkyun Kim
Kyungpook National University,
Republic of Korea



Mikio Hasegawa
Tokyo University of Science,
Japan



M. Benaoumeur Senouci
Southern Denmark University,
Denmark

Program Matrix for ICAIIIC 2024

Feb. 19 (Monday)						
Start	End	Duration	Room A	Room B	Room C	Room D
12:30	13:00	0:30	Registration			
13:00	15:00	2:00	Oral Session - 1A	Oral Session - 1B	Oral Session - 1C	Oral Session - 1D
			Applications for Information Systems - I Chair: Prof. Sungrae Cho (Chung-Ang University, Korea)	Image Processing and Multimedia - I Chair: Dr. Abdul Rehman (Kyungpook National University, Korea)	Medical Diagnosis and eHealth - I Chair: Dr. Alireza Ghasempour (University of Applied Science and Technology)	AI Foundation - I Chair: Dr. Zakriya Qadir (University of New South Wales, Australia)
15:00	15:30	0:30	Coffe Break			
15:30	16:20	0:50	Tutorial I - Prof. Atsushi Uchida (Saitama University) Photonic artificial intelligence: Reservoir computing and decision making based on complex photonics Chair: Prof. Mikio Hasegawa (Tokyo University of Science)			
16:20	17:40	1:20	Oral Session - 2A	Oral Session - 2B	Oral Session - 2C	Oral Session - 2D
			Applications for Information Systems - II Chair: Prof. Hoki Baek (Kyungpook National University, Korea)	Image Processing and Multimedia - II Chair: Dr. Faisal Saeed (Kyungpook National University, Korea)	Medical Diagnosis and eHealth - II Chair: Prof. Rutvij H. Jhaveri (Pandit Deendayal Energy University, India)	Wireless Communication - I Chair: Prof. Dong Seog Han (Kyungpook National University, Korea)

Program Matrix for ICAIC 2024

Feb. 20 (Tuesday)						
Start	End	Duration	Room A	Room B	Room C	Room D
9:00	9:10	0:10	Registration			
9:10	10:30	1:20	Oral Session - 3A	Oral Session - 3B	Oral Session - 3C	Oral Session - 3D
			<div>Applications for Information Systems - III</div> <div>Chair: Dr. Vrajesh Sharma, Panjab University SSG Regional Centre, Hoshiarpur, Punjab, INDIA</div>	<div>Image Processing and Multimedia - III</div> <div>Chair: Prof. Sandeep Kumar Agrawal (RJIT, BSF ACADEMY, GWALIOR, INDIA)</div>	<div>Medical Diagnosis and eHealth - III</div> <div>Chair: Dr. Sang-Chul Kim (Kookmin University, Korea)</div>	<div>AI Foundation - II</div> <div>Chair: Prof. Atif Shakeel (COMSATS University Islamabad, Pakistan)</div>
10:30	10:50	0:20	Coffe Break			
10:50	11:10	0:20	Chair: Prof. Dong Seog Han (Kyungpook National University)	Opening Address: Yeong Min Jang (OC Chair) Welcome Speech I: Seong-Ho Jeong (President of KICS) Welcome Speech II: Pascal Lorenz (Chair of Satellite & Space Communications Technical Committee, IEEE ComSoC)		
11:10	11:40	0:30		Keynote Speech I - Prof. Shiwen Mao (Auburn University, USA) How to Mitigate the Reliance on Data in Data-driven Wireless Research		
11:40	12:10	0:30		Keynote Speech II - Mr. Andrew Yongjoon Kong (Cloud Technical Director, Kakao) Evolving Next-Generation ITDS Frameworks Through Generative AI in the Computeless Era		
12:10	14:00	1:50	Lunch Break			
14:00	15:20	1:20	Oral Session - 4A	Oral Session - 4B	Oral Session - 4C	Oral Session - 4D
			<div>Applications for Information Systems - IV</div> <div>Chair: Assist.Prof.Dr. Esraa Saleh Alomari, Wasit University, IRAQ</div>	<div>Information and Communications Technology - I</div> <div>Chair: Prof. Jung Hoon Lee (Hankuk University of Foreign Studies, Korea)</div>	<div>Image Processing and Multimedia - IV</div> <div>Chair: Dr. Murad Khan (Kuwait College of Science and Technology, Kuwait)</div>	<div>Decision and Control - I</div> <div>Chair: Prof. Min Young Kim (Kyungpook National University, Korea)</div>
15:20	15:40	0:20	Coffe Break			
15:40	17:40	2:00	Poster Session			
			<div>AI Applications in Information and Communication Technologies</div> <div>Chair: Assist. Prof. Jin Nakazato (Tokyo University)</div>			
17:40	18:00	0:20	Break			
18:00	20:00	2:00	Banquet			

Program Matrix for ICAIIC 2024

Feb. 21 (Wednesday)						
Start	End	Duration	Room A	Room B	Room C	Room D
9:00	9:10	0:10	Registration			
9:10	10:30	1:20	Oral Session - 5A	Oral Session - 5B	Oral Session - 5C	Oral Session - 5D
			Information and Communications Technology - II Chair: Dr. Vrajesh Sharma, Panjab University SSG Regional Centre, Hoshiarpur, Punjab, INDIA	Wireless Communication - II Chair: Dr. Anal Paul (National Sun Yat-Sen University, Taiwan)	Security - I Chair: Dr. Foo Yee Loo (Multimedia University, Malaysia)	Applications for Information Systems - V Chair: Prof. Hirotada Honda (Toyo University, Japan)
10:30	10:50	0:20	Coffe Break			
10:50	11:40	0:50	Tutorial II - Prof. Sungtek Kahng (Incheon Nat'l Univ., Republic of Korea) Automated solution finding approaches Based on stochastic optimization methods in the A.I.-inundated society Chair: Prof. Youn-Hee Han (Korea University of Technology and Education)			
11:40	13:30	1:50	Lunch Break			
13:30	15:30	2:00	Oral Session - 6A	Oral Session - 6B	Oral Session - 6C	Oral Session - 6D
			Information and Communications Technology - III Chair: Prof. Adeel Iqbal (COMSATS University Islamabad, Pakistan)	Wireless Communication - III Chair: Prof. Seokjoo Shin (Chosun University, Korea)	Security - II Chair: Prof. Bakhtair Ali (COMSATS University Islamabad, Pakistan)	Decision and Control - II Chair: Dr. Khizar
15:30	15:50	0:20	Coffe Break			
15:50	17:50	2:00	Oral Session - 7A	Oral Session - 7B	Oral Session - 7C	Oral Session - 7D
			Applications for Information Systems - VI Chair: Dr. Muhammad Azfar Yaqub (Free University of Bozen-Bolzano, Italy)	Brain + AI Chair: Dr. Muhammad Toaha Raza Khan (Middle East Technical University, Cyprus Campus, Turkey)	AI Foundation - III Chair: Prof. Insoo Sohn (Dongguk University, Korea)	Information and Communications Technology - IV Chair: Dr. Junaid Akram (The University of Sydney, Australia)

Program Matrix for ICAIC 2024

Feb. 22 (Thursday)						
Start	End	Duration	Room A	Room B	Room C	Room D
9:20	9:30	0:10	Registration			
9:30	11:30	2:00	Oral Session - 8A	Oral Session - 8B	Oral Session - 8C	Oral Session - 8D
			Applications for Information Systems - VII Chair: Dr. Huey-Ing Liu (Fu Jen Catholic University, Taiwan)	Language + AI Chair: Dr. Devarani Devi Ningombam (National Institute of Technology Patna, India)	Information and Communications Technology - V Chair: Dr. Vrajesh Sharma, Panjab University SSG Regional Centre, Hoshiarpur, Punjab, INDIA	Applications for Information Systems - VIII Chair: Prof. Ghufuran Shafiq (COMSATS University Islamabad, Pakistan)
11:30	13:00	1:30	Lunch Break			
13:00	16:00	3:00	PhD Students' Open Research Meeting			

Keynote Speech

11:10 ~ 11:40, February 20, 2024 (Tuesday)

Keynote Speech I (Prof. Shiwen Mao (Auburn University, USA))

How to Mitigate the Reliance on Data in Data-driven Wireless Research

Abstract

Deep learning has shown great promise in solving many open challenges in wireless networking research, while intelligence has been recognized as a defining feature of the next generation wireless networks. However, deep learning is data hungry, and one of the critical obstacles towards fulfilling its promise is facilitating the acquisition of sufficient amounts of data to train and validate deep learning models. In this talk, we examine the challenges in collecting high quality wireless data, as well as reviewing various approaches that enable wireless researchers and practitioners to acquire data more efficiently at reduced cost and to utilize existing data more effectively. In particular, we will review several effective approaches to reduce the reliance on data in deep learning-based wireless research, such as data imputation and augmentation methods with case studies. These approaches are quite effective and general, and should be helpful to researchers in this exciting field to tackle other data-driven wireless problems. We conclude this talk by introducing our recent work on Artificial Intelligence Generated Content (AIGC) for wireless data, including both generative adversarial network (GAN)-based and diffusion-based approaches.



Biography

SHIWEN MAO is a Professor and Earle C. Williams Eminent Scholar, and Director of the Wireless Engineering Research and Education Center at Auburn University. Dr. Mao's research interest includes wireless networks, multimedia communications, and smart grid. He is a Distinguished Lecturer of IEEE Communications Society and IEEE Council of RFID, and the editor-in-chief of IEEE Transactions on Cognitive Communications and Networking. He was the General Chair of IEEE INFOCOM 2022, a TPC Chair of IEEE INFOCOM 2018, and a TPC Vice-Chair of IEEE GLOBECOM

2022. He received the IEEE ComSoc MMTC Outstanding Researcher Award in 2023, the SEC (Southeastern Conference) 2023 Faculty Achievement Award for Auburn, the IEEE ComSoc TC-CSR Distinguished Technical Achievement Award in 2019, the Auburn University Creative Research & Scholarship Award in 2018, and the NSF CAREER Award in 2010, and several service awards from the IEEE. He is a co-recipient of the 2022 Best Journal Paper Award of IEEE ComSoc eHealth Technical Committee, the 2021 Best Paper Award of Elsevier/KeAi Digital Communications and Networks Journal, the 2021 IEEE Internet of Things Journal Best Paper Award, the 2021 IEEE Communications Society Outstanding Paper Award, the IEEE Vehicular Technology Society 2020 Jack Neubauer Memorial Award, the 2018 Best Journal Paper Award and the 2017 Best Conference Paper Award from IEEE ComSoc MMTC, and the 2004 IEEE Communications Society Leonard G. Abraham Prize in the Field of Communications Systems. He is a co-recipient of the Best Paper Awards from IEEE GLOBECOM 2023 (two), 2019, 2016, and 2015, IEEE ICC 2022 and 2013, and IEEE WCNC 2015, and the Best Demo Awards from IEEE INFOCOM 2022 and IEEE SECON 2017. He is a fellow of the IEEE and IET.

Keynote Speech

11:40 ~ 12:10, February 20, 2024 (Tuesday)

Keynote Speech II (Mr. Andrew Yongjoon Kong (Cloud Technical Director, Kakao))

Evolving Next-Generation ITDS Frameworks Through Generative AI in the Computeless Era

Abstract

As we transition into the computeless era, characterized by distributed computing, edge computing, and decentralized architectures, the landscape of Information Technology Develop and Sustain (ITDS) frameworks is undergoing profound transformation. In this paradigm shift, the role of Generative AI emerges as a cornerstone in evolving ITDS frameworks to meet the demands of a computeless environment.

This presentation explores the pivotal role of Generative AI in shaping the next generation of ITDS frameworks amidst the computeless era. Generative AI techniques offer innovative solutions to address the challenges posed by distributed and decentralized computing environments. By harnessing the power of Generative AI, organizations can unlock new capabilities and functionalities within their ITDS frameworks, enabling adaptive decision-making processes that are tailored to the dynamic nature of computeless architectures.



Biography

Andrew Kong is the head of cloud computing technology at Kakao. He is researching, developing, and applying AI/machine learning platform development, data center automation, private/public cloud services, and the technologies required for them to actual services. In 2015, he presented his new network model "SDN without SDN" at the OpenStack Summit for the first time. In 2016, he also presented on cloud and networking at the Netdev Conference. He received a master's degree in combustion analysis and is

studying neuroscience at medical school. He is also a member of the Korea Information Society Development Institute's Small and Medium Enterprise Technology Advisory Committee and the Korea Database Promotion Institute's Advisory Committee. His major works include "Developer Principles" (Golden Rabbit, 2022), "The Real Story of Cloud Transition" (Aeon, 2020), "Kafka: The Strongest in Data Platform" (Bookman, 2018), and "Big Data Analysis Using Cloud API" (Aeon, 2015).

Tutorial

15:30 ~ 16:20, February 19, 2024 (Monday)

Tutorial I (Prof. Atsushi Uchida (Saitama University, Japan))

Photonic artificial intelligence: Reservoir computing and decision making based on complex photonics

Abstract

We overview recent technologies of photonic artificial intelligence using reservoir computing and decision making. We propose photonic integrated circuits for reservoir computing using semiconductor lasers with optical feedback, and construct multiple reservoirs for performance improvement of chaotic-time series prediction. We also demonstrate several decision-making schemes for solving the multi-armed bandit problem using optical spatio-temporal dynamics and mode competition dynamics of semiconductor lasers.

Biography



Biography

Prof. Atsushi Uchida received the Ph.D. degrees in electrical engineering from Keio University, Japan, in 2000. He was a JSPS Postdoctoral Fellow with the University of Maryland, College Park, USA, from 2002 to 2004. He was an Associate Professor with the Department of Information and Computer Sciences, Saitama University, Saitama, Japan, from 2008 to 2015. Since 2015, he has been a Professor with the Department of Information and Computer Sciences, Saitama University, Saitama, Japan.

He is currently working on synchronization of chaotic lasers and its applications for optical secure communications, secure key generation using chaotic lasers for cryptography, fast physical random number generation using chaotic lasers, reservoir computing using complex photonics, photonic decision making, and consistency in nonlinear dynamical systems.

Tutorial

10:40 ~ 11:30, February 21, 2024 (Wednesday)

Tutorial II (Prof. Sungtek Kahng (Incheon Nat'l Univ., Republic of Korea))

Automated solution finding approaches based on stochastic optimization methods in the A.I.-inundated society

Abstract

This tutorial deals with stochastic automatic optimization methods known as programming-based optimization approaches such as Evolutionary Strategy, Genetic Algorithm, Particle Swarm Optimization whose relatives are Marine Predator Algorithm and Weed Colonization from the standpoints of principles and the applications to Engineering problems. These methods will be mentioned by being compared to ANN, Machine Learning, and their up-to-date optimization techniques.



Biography

Prof. Sungtek Kahng received his Ph.D. degree from Hanyang University, Korea in 2000, with a specialty in Radio Science and Engineering. From 2000 to 2004, he worked for the Electronics and Telecommunication Research Institute(briefly, ETRI), and developed Satellite Payloads of GEOs, Computational EM methods and Electromagnetic Field Measurement Techniques. Currently, in Dept. of Info. & Telecomm. Eng. of Incheon National University, he works on WPT devices, PD sensors, EMI/EMC, RF components for UAMs,

Radars and satellites, smart antennas for 5G/B5G/IoT networking. He in the committee evaluating Korean Satellite Development Programs appointed by NRF has cooperated mainly with LGE, LIGNEX1, ETRI, KARI, ADD, CAMM, Corning(USA), Samsung, AceTechnology, Hyundai, LG Innotek, Amotech, Innertron, and NISSHA(Japan) where he holds a fellow position. Along with roles of IEEE APS STC judge, IEEE APS TC Antenna Measurements, ISAP, APMC, KICS executive director, KIEE journal editor, etc., he served as the ICCR 2022 TPC Chair, Chair of LOC for ICEE 2026 and General Chair for IEEE APCAP 2019. Recently, he was invited to give keynote speeches at several conferences including IEICE 2021 General Conference, JC-SAT 2023 and International Symposium on Antennas and Propagation 2023 under the themes on RIS technologies, LEO Satellite communication with 5G ground networks in the era of 6G mobile services, and technical details of ITRC funded by the Korean Ministry of Science and ICT and his task as the center director.

Oral Sessions

Oral Session - 1A: Applications for Information Systems - I

Chair: Prof. Sungrae Cho (Chung-Ang University, Korea)

Feb. 19 (Mon.), 13:00~15:00

- 1A-1 **Social Media Analytic-based Corporate Credit Rating Forecasting**
Yuh-Jen Chen, Ling-Han Hong and Yu-Chen Chen (National Kaohsiung University of Science and Technology, Taiwan)
- 1A-2 **Concept of Joint Fast Beam Search and Synchronization Scheme using Fast Beam Steering**
Hideya So (Shonan Institute of Technology, Japan); Kazuki Maruta (Tokyo University of Science, Japan); Takana Kaho (Shonan Institute of Technology, Japan)
- 1A-3 **Simplified Experimental Evaluation of Radio Emitter Localization Using UAV-based Sensors**
Gia Khanh Tran and Kohei Tsuchiya (Tokyo Institute of Technology, Japan)
- 1A-4 **A Fuzzy Logic-Based Opinion Update Model for Online Social Networks with Influential Social Bots**
Rashmi Ranjan Rout, Sudipta Sahana and Priyanka Parimi (National Institute of Technology Warangal, India)
- 1A-5 **Monitoring Sleep Posture based on Temperature and Humidity Sensor**
Hyung-Ju Kim (Korea (South)); Youn-Sik Hong (Incheon National University, Korea (South)); Won-Ho Jun and Woo-Chul Shin (Incheon Nation University, Korea (South))
- 1A-6 **TLFed: Federated Learning-based 1D-CNN-LSTM Transmission Line Fault Location and Classification in Smart Grids**
Paul Michael Custodio (Kumoh National Institute of Technology, Korea (South)); Made Adi Paramartha Putra (Kumoh National Institute of Technology, Korea (South) & Primakara University, Indonesia); Jae-Min Lee and Dong Seong Kim (Kumoh National Institute of Technology, Korea (South))

Oral Session - 1B: Image Processing and Multimedia - I

Chair: Dr. Abdul Rehman (Kyungpook National University, Korea)

Feb. 19 (Mon.), 13:00~15:00

- 1B-1 **Brands Logo Recognition with Semi-Supervised Learning using a Robust YOLOv8 Detection Model**
Usman Ali (Chonnam National University, Gwangju, South Korea, Korea (South)); Seungmin Oh and Junghoon Lee (Chonnam National University, Korea (South)); Jinsul Kim (Korea Nazarene University, Korea (South))
- 1B-2 **Classification of Cervical Intraepithelial Neoplasia Based on Combination of GLCM and $L^*a^*b^*$ on Colposcopy Image Using Machine Learning**
Zendi Zakaria Raga Permana and Agung W. Setiawan (Institut Teknologi Bandung, Indonesia)
- 1B-3 **Auto Annotation using Object Tracking with Multiple in-vehicle Cameras for Federated Learning**
Yuuki Nakahama (The University of Electro-Communications, Japan); Satoshi Ohzahata (The University of Electro-Communications & Graduate School of Information Systems, Japan); Ryo Yamamoto (The University of Electro-Communications, Japan)

Oral Sessions

- 1B-4 Deep Learning-based SBOM Defect Detection for Medical Devices
Heeyeon Kim and Ki-Hyung Kim (Ajou University, Korea (South))
- 1B-5 Optimizing QoE in IoT-based Video Streaming through Deep Learning Algorithms
Mahmoud Darwich (University of Mount Union, USA); Kasem Khalil (University of Mississippi, USA); Magdy Bayoumi (University of Louisiana Lafayette, USA)

Oral Session - 1C: Medical Diagnosis and eHealth - I

Chair: Dr. Alireza Ghasempour (University of Applied Science and Technology) Feb. 19 (Mon.), 13:00~15:00

- 1C-1 Federated learning - A novel approach for predicting diseases in unprecedented areas
Shafaq Khan, Lavanya Shanmugapuram Palanisamy and Manish Raghuraman (University of Windsor, Canada)
- 1C-2 A Hybrid Method for Clinical Text Classification Based on Confident Predictions and Regular Expressions
Christopher A. Flores and Rodrigo Verschae (Universidad de O'Higgins, Chile)
- 1C-3 Binary Count Ratio for Lung Cancer Classification in Computerized Tomography Scan Images
Sittisak Saechueng (Burapha University, Thailand); Ungsumalee Suttapakti (Burapha University & Faculty of Informatics, Thailand)
- 1C-4 Hybrid Deep Learning Architectures for Histological Image Segmentation
Md Jahid Hasan, Wan Siti Halimatul Munirah Wan Ahmad and Mohammad Faizal Ahmad Fauzi (Multimedia University, Malaysia); Fazly Abas (MMU, Malaysia)

Oral Session - 1D: AI Foundation - I

Chair: Dr. Zakriya Qadir (University of New South Wales, Australia) Feb. 19 (Mon.), 13:00~15:00

- 1D-1 Generative Artificial Intelligence for Industry: Opportunities, Challenges, and Impact
Barun Kumar Saha (Hitachi Energy, India)
- 1D-2 Improved Adaptive Integer form of Population-Based Incremental Learning and Reactive Tabu Search for an Integrated Energy Supply and Demand Optimization Framework in Factories
Shuhei Kawaguchi and Yoshikazu Fukuyama (Meiji University, Japan)
- 1D-3 Impact of Source Coding on Downstream AI Applications
Nazmul Islam and Seokjoo Shin (Chosun University, Korea (South))
- 1D-4 Key Vertex Pairs Extraction for Graph Classification based on Probability Distribution Learning
Jianming Huang and Hiroyuki Kasai (WASEDA University, Japan)
- 1D-5 Signed Graph Laplacian for Semi-Supervised Anomaly Detection
Jihong Bae, Hyeongcheol Park, Minsoo Chung (STraffic Co., Ltd., Korea (South)); Muhammad Toaha Raza Khan (Middle East Technical University, Cyprus); Kyungchul Lee (STraffic Co., Ltd., Korea (South))

Oral Sessions

Oral Session - 2A: Applications for Information Systems - II

Chair: Prof. Hoki Baek (Kyungpook National University, Korea)

Feb. 19 (Mon.), 16:20~17:40

- 2A-1 **Intuitive, Interactive Training System for the Sense of Sound Using Portable Theremin Device**
Tsen-Fang Lin and Chun-Hung Yang (Southern Taiwan University of Science and Technology, Taiwan)
- 2A-2 **LSTM based Analysis of Sequential Usage Pattern for Electrical Appliance**
Joa Hyoung Lee, Yoonmee Doh and Tae-Wook Heo (ETRI, Korea (South))
- 2A-3 **Ultrasonic Based Outdoor Localization Using Threshold Crossing**
JaeJun Lim, Jaehan Joo and Suk Chan Kim (Pusan National University, Korea (South))
- 2A-4 **Data Aided Sensing with Variational Autoencoder**
Muhammad Awais (Kyung Hee University, Korea (South)); Jinho Choi and Jihong Park (Deakin University, Australia); Yun Hee Kim (Kyung Hee University, Korea (South))

Oral Session - 2B: Image Processing and Multimedia - II

Chair: Dr. Faisal Saeed (Kyungpook National University, Korea)

Feb. 19 (Mon.), 16:20~17:40

- 2B-1 **PoolImagen: Text-to-Image Diffusion Models with An Efficient Transformer without Attention**
Hyeun Ku, Kanghyeok Ko, Sun Jae Baek and Minhyeok Lee (Chung-Ang University, Korea (South))
- 2B-2 **Improving Performance of Yolov5n v6.0 for Face Mask Detection**
Muna AL-Shamdeen and Fawziya Ramo (University of Mosul, Iraq)
- 2B-3 **An Empirical Study on the Psychological Improvement Effects and Satisfaction of Korean Traditional Painting Generative AI**
Sujin Bae, Ohbyung Kwon, Kyungwha Hwang, Ryunhee Choi, Seongjun Kwon and Taeyoung Kim (Kyung Hee University, Korea (South)); Dongjae Lee and Kyuho Lee (ALLBIGDAT Inc., Korea (South))
- 2B-4 **Structure-Texture-Noise Decomposition for Noisy Images with Two-Stage Network**
Takamichi Miyata (Chiba Institute of Technology, Japan)

Oral Sessions

Oral Session - 2C: Medical Diagnosis and eHealth - II

Chair: Prof. Rutvij H. Jhaveri (Pandit Deendayal Energy University, India)

Feb. 19 (Mon.), 16:20~17:40

- 2C-1 **Enhanced Kidney Tumor Segmentation in CT Scans Using a Simplified UNETR with Organ Information**
Sanghyuk R Choi, Kanghyeok Ko, Sun Jae Baek, Soyeon Lee, Jungro Lee and Minhyeok Lee (Chung-Ang University, Korea (South))

- 2C-2 **Optimal Sensor Placement for Lower Limb Exoskeleton Design: A Study on Estimating Center of Pressure Using Multi-Objective PSO**
Ha-Yoon Song, Hyun-Joon Chung, Kwang Woo Jeon, Tae-Hwan Kim and Junyoung Kim (Korea Institute of Robotics and Technology Convergence, Korea (South)); Jin-Yeol Yoo and Jae-Kwan Ryu (LIG Nex1, Korea (South))

- 2C-3 **A Study on TVAE-based Data Augmentation and Verification to Predict Physiologically Active Ingredients of Medicine Plants According to Climate Change**
Hyunjo Lee and Cheol-Joo Chae (Korea National University of Agriculture and Fisheries, Korea (South))

- 2C-4 **Optimizing Healthcare Accessibility: An Integration of GIS and Machine Learning for Strategic Hospital Facility Location Planning**
Elmer C Peramo (Advanced Science and Technology Institute & Department of Science and Technology, Philippines); Kahlil Sebastian G Ramos (Department of Science and Technology, Philippines)

Oral Session - 2D: Wireless Communication - I

Chair: Prof. Dong Seog Han (Kyungpook National University, Korea)

Feb. 19 (Mon.), 16:20~17:40

- 2D-1 **Channel Selection Using Machine Learning**
Shrutika Sinha (Kookmin University, Seoul, South Korea, Korea (South)); Pradeep Reddy Gogulamudi and Soo-Hyun Park (Kookmin University, Korea (South))

- 2D-2 **Design and Evaluation of OTSM(Orthogonal Time Sequency Multiplexing) Communication System in Rayleigh Fading Channel**
Kirill Y. Vanin and Heung-Gyoon Ryu (Chungbuk National University, Korea (South))

- 2D-3 **Performance on Autoencoder-Based MIMO Quantize-Forward Relay System for Various Learning Parameters**
Ju-in Shin, Yifan Yao and Xianglan Jin (Jeonbuk National University, Korea (South))

- 2D-4 **Neural Networks for Predicting the Optimal Beamforming Angles for Maximized Overall Wireless Network Capacity**
Parmida Geranmayeh (Humboldt University of Berlin, Berlin, Germany); Eckhard Grass (IHP & Humboldt-University Berlin, Germany)

Oral Sessions

Oral Session - 3A: Applications for Information Systems - III

Chair: Dr. Vrajesh Sharma, Panjab University SSG Regional Centre, Hoshiarpur, Punjab, INDIA

Feb. 20 (Tue.), 9:10~10:30

- 3A-1 **A Dynamic Machine Learning Model for Accelerated Oil Spill Remediation**
Sathvik Chemudupati (University of Texas at Austin, USA)
- 3A-2 **Customers First vs Employees First: Effective Organizational Culture Contributing to Empathy**
Takumi Kato (Meiji University, Japan); Masaki Koizumi (NEC Corporation, Japan)
- 3A-3 **Advancing AI Voice Synthesis: Integrating Emotional Expression in Multi-Speaker Voice Generation**
Shivani Sanjay Kolekar, David J. Richter, Md ilias Bappi and Kyungbaek Kim (Chonnam National University, Korea (South))
- 3A-4 **DM-YOLOv8: Improved Cucumber Disease and Insect Detection Model Based on YOLOV8**
Jiyuan Ding (Kyungnam University, Korea (South)); Wangsu Jeon (Kyugnam University, Korea (South)); Sangyong Rhee (Kyungnam University, Korea (South))

Oral Session - 3B: Image Processing and Multimedia - III

Chair: Prof. Sandeep Kumar Agrawal (RJIT, BSF ACADEMY, GWALIOR, INDIA)

Feb. 20 (Tue.), 9:10~10:30

- 3B-1 **CNN-based Aerosol Particle Classification Using 2D Representations of Single-Particle Mass Spectrometer Data**
Guanzhong Wang (University of the Bundeswehr Munich, Germany); Heinrich Ruser (Bundeswehr University Munich, Germany); Julian Schade (University of the Bundeswehr Munich, Germany); Johannes Passig and Ralf Zimmermann (University of Rostock, Germany); Günther Dollinger and Thomas Adam (University of the Bundeswehr Munich, Germany)
- 3B-2 **Deep Learning-based Image Quality Assessment Metric for Quantifying Perceptual Distortions in Transmitted Images**
Ijaz Ahmad and Seokjoo Shin (Chosun University, Korea (South))
- 3B-3 **A Novel Approach Combining Optical Camera Communication and RADAR in Distance Estimation for Dynamic Communication**
Ones Sanjerico Sitanggang, Herfandi Herfandi and Muhammad Rangga Aziz Nasution (Kookmin University, Korea (South)); ByungDeok Chung (ENS. Co. Ltd., Korea (South)); Yeong Min Jang (Kookmin University, Korea (South))
- 3B-4 **A Study on Solving the Data Imbalance Problem for Detecting Heunginjimun Roof Tilt Using Transfer Learning Algorithms**
Sang-Yun Lee (Electronics and Telecommunication Institute, Korea (South)); Seok-Ju Kang (Chungnam National University, Korea (South))

Oral Sessions

Oral Session - 3C: Medical Diagnosis and eHealth - III

Chair: Dr. Sang-Chul Kim (Kookmin University, Korea)

Feb. 20 (Tue.), 9:10~10:30

- 3C-1 **Examining the Efficacy of Transformer Models in Radiology Report Labeling within a Thai Hospital**
Worranittha Larpiattaworn (King Mongkuts University of Technology Thonburi, Thailand); Tretap Promwiset and Isarun Chamveha (Perceptra Co Ltd, Thailand); Warasinee Chaisangmongkon (King Mongkuts University of Technology Thonburi, Thailand)
- 3C-2 **A Comparative Study of Noisy Label Detection Techniques in a Thai Hospital's Chest X-ray Database**
Sorasit Tatitaisakul (King Mongkuts University of Technology Thonburi, Thailand); Suesarn Wilainuch and Isarun Chamveha (Perceptra Co Ltd, Thailand); Warasinee Chaisangmongkon (King Mongkuts University of Technology Thonburi, Thailand)
- 3C-3 **Transformers effectiveness in medical image segmentation: A comparative analysis of UNet-based architectures**
Tagne Poupi Theodore Armand, Subrata Bhattacharjee, Heung-Kook Choi and Hee-Cheol Kim (Inje University, Korea (South))
- 3C-4 **Optimizing longevity: Integrating smart nutrition and digital technologies for personalized anti-aging healthcare**
Tagne Poupi Theodore Armand, Opeyemi Deji-Oloruntoba, Subrata Bhattacharjee, Kintoh Allen Nfor and Hee-Cheol Kim (Inje University, Korea (South))

Oral Session - 3D: AI Foundation - II

"Chair: Prof. Atif Shakeel (COMSATS University Islamabad, Pakistan) (Online)"

Feb. 20 (Tue.), 9:10~10:30

- 3D-1 **Energy Minimization for Participatory Federated Learning in IoT Analyzed via Game Theory**
Alessandro Buratto (Università Degli Studi di Padova, Italy); Elia Guerra (CTTC, Spain); Marco Miozzo (CTTC/CERCA, Spain); Paolo Dini (Centre Tecnològic de Telecomunicacions de Catalunya (CTTC), Spain); Leonardo Badia (Università degli Studi di Padova, Italy)
- 3D-2 **Outlier Detect Using Vector Cosine Similarity by Adding a Dimension**
Zhongyang Shen (China Mobile, China)
- 3D-3 **Efficient Few-Shot Classification using Self-Supervised Learning and Class Factor Analysis**
Youngjae Lee and Hyeyoung Park (Kyungpook National University, Korea (South))
- 3D-4 **Prediction Accuracy and Adversarial Robustness of Error-Based Input Perturbation Learning**
Soha Lee, Heesung Yang and Hyeyoung Park (Kyungpook National University, Korea (South))

Oral Sessions

Oral Session - 4A: Applications for Information Systems - IV

Chair: Assist.Prof.Dr. Esraa Saleh Alomari, Wasit University, IRAQ

Feb. 20 (Tue.), 14:00~15:20

- 4A-1 **An Approach on Improving the Recommender System: Predicting Movie Genres Based on Plot Summaries**
Gun Il Kim, Jae Heon Kim, Minkyung Kim, Taekyoung Kwon and Beakcheol Jang (Yonsei University, Korea (South))
- 4A-2 **Automated Classification of Myocardial Infarction Based on Auscultation Position Using Random Forest**
Ira Puspasari (Institut Teknologi Bandung & Universitas Dinamika, Indonesia); Tati Erawati Rajab and Agung W. Setiawan (Institut Teknologi Bandung, Indonesia); Trio Adiono (STEI ITB, Indonesia); Miftah Pramudyo (Padjajaran University, Indonesia)
- 4A-3 **Revolutionizing Surveillance: A Brief Survey of Edge AI Terminals in Road Infrastructure**
Muhammad Ashar Tariq, Mahnoor Ajmal, Euri Jo, Malik Saad and Seri Park (Kyungpook National University, Korea (South)); Jinhong Kim (ETRI, Korea (South)); Dongkyun Kim (Kyungpook National University, Korea (South))
- 4A-4 **Fault Diagnosis of High-Speed Railway Track Grinding Motor Using Convolutional Neural Network**
Xiaoyong Zhong (Tongji University, China)

Oral Session - 4B: Information and Communications Technology - I

Chair: Prof. Jung Hoon Lee (Hankuk University of Foreign Studies, Korea)

Feb. 20 (Tue.), 14:00~15:20

- 4B-1 **Cost Sharing Method for a Mobile Tethering with a Coalitional Game Theory**
Sumiko Miyata (Shibaura Institute of Technology, Japan)
- 4B-2 **Characterization of Discrimination of Number of Signal Collision Sensors Using Spectral Fluctuation Caused by Frequency Offset in Physical Wireless Parameter Conversion Sensor Networks**
Toshi Ito and Osamu Takyu (Shinshu University, Japan); Mai Ohta (Fukuoka University, Japan); Takeo Fujii and Koichi Adachi (The University of Electro-Communications, Japan)
- 4B-3 **Deep Learning-Based QoS Prediction for Optimization of Robotic Communication**
Tae Hyun Kim (Kyungpook National University, Korea (South)); Jong Hyuk Lee (Kyunpook National University, Korea (South)); Jinhyuk Lee and Min Young Kim (Kyungpook National University, Korea (South))
- 4B-4 **DSP R-CNN: Direct Set Prediction Region with CNN features**
Kwan-Yong Park and Jun-Geol Baek (Korea University, Korea (South))

Oral Sessions

Oral Session - 4C: Image Processing and Multimedia - IV

Chair: Dr. Murad Khan (Kuwait College of Science and Technology, Kuwait)

Feb. 20 (Tue.), 14:00~15:20

- 4C-1 **Image Translation of Vehicle Front Camera Frame Failures based on CycleGAN**
Dian Ning and Dong Seog Han (Kyungpook National University, Korea (South))
- 4C-2 **Eye Movement Tracking for Computer Vision Syndrome using Deep Learning Techniques**
Chittaranjan Hota (Birla Institute of Technology & Science, Pilani, Hyderabad Campus, India); Manan Popat, Divyan Goyal, Vibhum Raj Tripathi and Nirmal Jayabalan (BITS Pilani Hyderabad Campus, India)
- 4C-3 **Validating Time Serial Images for Emotion Recognition**
Jung Hwan Kim (KyungPook National University, Korea (South)); Dong Seog Han (Kyungpook National University, Korea (South))
- 4C-4 **A New JPEG Compression Algorithm for Transmission, Processing and Storage of Health Data**
Yilmaz Aydın (Firat University, Turkey); Fatih Özkaynak (Firat University, Turkey)

Oral Session - 4D: Decision and Control - I

Chair: Prof. Min Young Kim (Kyungpook National University, Korea)

Feb. 20 (Tue.), 14:00~15:20

- 4D-1 **Towards adapting human behavior in packing logistics through Imitation Learning**
Hermann Foot (Fraunhofer Institute for Material Flow and Logistics, Germany)
- 4D-2 **Graph-powered Reinforcement Learning for Intelligent Task Offloading in Vehicular Networks**
Ihsan Ullah (Korea University of Technology and Education, Korea (South)); Hyun-Kyo Lim (Korea Institute of Science and Technology Information, Korea (South)); Yeong-Jun Seok (Korea University of Technology and Education, Korea (South)); Naeem Ul Islam (Yuan Ze University, Taiwan); Youn-Hee Han and Chang-Hun Ji (Korea University of Technology and Education, Korea (South))
- 4D-3 **Reinforcement Learning for Time Series Data with Partially Labeled Anomalies**
Kio Yun and Jun-Geol Baek (Korea University, Korea (South))
- 4D-4 **Scalable and Efficient URLLC Resource Allocation Based on Offline Graph Reinforcement Learning**
Ren Jiaqi, Wenpeng Jing and Xiangming Wen (Beijing University of Posts and Telecommunications, China); Zhaoming Lu (BUPT, China); Shuyue Zhao (Beijing University of Posts and Telecommunications, China)

Oral Sessions

Oral Session - 5A: Information and Communications Technology - II

Chair: Dr. Vrajesh Sharma, Panjab University SSG Regional Centre, Hoshiarpur, Punjab, INDIA

Feb. 21 (Wed.), 9:10~10:30

- 5A-1 **Network Slice Traffic Demand Prediction for Slice Mobility Management**
Muhammad Ashar Tariq, Malik Saad, Mahnoor Ajmal, Ayesha Siddiqua and Dongkyun Kim (Kyungpook National University, Korea (South))
- 5A-2 **Exploiting Secure Multi-Hop Transmissions with NOMA Networks: Performance Analysis**
Yushintia Pramitarini and Ridho Hendra Yoga Perdana (Hongik University, Korea (South)); Kyusung Shim (Hankyong National University, Korea (South)); Beongku An (Hongik University, Korea (South))
- 5A-3 **Deep learning-based no-reference video streaming QoE estimation using WebRTC statistics**
Keisuke Sakakibara (The University of Electro-Communications, Japan); Satoshi Ohzahata (The University of Electro-Communications & Graduate School of Information Systems, Japan); Ryo Yamamoto (The University of Electro-Communications, Japan)
- 5A-4 **Machine Learning Based 5G Network Slicing Management and Classification**
Zong-Xun Wu (National Central Univ, Taiwan); Yun-Zhe You, Chien-Chang Liu and Li-Der Chou (National Central University, Taiwan)

Oral Session - 5B: Wireless Communication - II

Chair: Dr. Anal Paul (National Sun Yat-Sen University, Taiwan)

Feb. 21 (Wed.), 9:10~10:30

- 5B-1 **Praetorian: Probabilistic Planning for Radio Access Network Slice Assurance**
Ajay Kattepur and Swarup Kumar Mohalik (Ericsson Research, India); Ian Burdick (Ericsson Inc., USA)
- 5B-2 **Deep Learning-Based Energy Efficiency Maximization in Massive MIMO-NOMA Networks With Multiple RISs**
Ridho Hendra Yoga Perdana (Hongik University, Korea (South)); Toan-Van Nguyen (San Diego State University, USA); Yushintia Pramitarini and Beongku An (Hongik University, Korea (South))
- 5B-3 **Millimeter-Wave Fast Beam Tracking Enabled by RAN/V2X Cooperation**
Kazuki Maruta (Tokyo University of Science, Japan); Jin Nakazato, Kengo Suzuki, Dou Hu and Ryo Iwaki (The University of Tokyo, Japan); Sojin Ozawa and Yuki Sasaki (Tokyo University of Science, Japan); Hideya So (Shonan Institute of Technology, Japan); Manabu Tsukada (The University of Tokyo, Japan)
- 5B-4 **A Nature-Inspired Optimization Technique for Shaping the Metal Pattern of the Planar Antenna for 5G mm-Wave Systems**
Sungtek Kahng, Hongsik Park, Seonguk Kim, Jaewon Koh and Seongbu Seo (Incheon National University, Korea (South)); Yejune Seo (Inchoen National University, Korea (South))

Oral Sessions

Oral Session - 5C: Security - I

Chair: Dr. Foo Yee Loo (Multimedia University, Malaysia)

Feb. 21 (Wed.), 9:10~10:30

- 5C-1 **Defense Method Challenges Against Backdoor Attacks in Neural Networks**
Samaneh Shamshiri and Insoo Sohn (Dongguk University, Korea (South))
- 5C-2 **Deep learning based detection of anti-reflective obstacles in VLC systems**
Marina E. Plissiti, Christoforos Papaioannou, Yiorgos Sfikas, Georgios Papatheodorou, Simon-Ilias Poulis, Aristides Efthymiou and Yiorgos Tsiatouhas (University of Ioannina, Greece)
- 5C-3 **A Systematic Literature Review on Cybersecurity Risk Management in Smart Cities**
Jawaher Alshehri, Almaha Alhamed and M M Hafizur Rahman (King Faisal University, Saudi Arabia)
- 5C-4 **Empirical Investigation of Adversarial Attacks for Semi-Supervised Object Detection**
Junhyung Jo and Joongsu Kim (Pohang University of Science and Technology, Korea (South)); Young-Joo Suh (Pohang University of Science and Technology (POSTECH), Korea (South))

Oral Session - 5D: Applications for Information Systems - V

Chair: Prof. Hirotada Honda (Toyo University, Japan)

Feb. 21 (Wed.), 9:10~10:30

- 5D-1 **HabagatPlus: Providing Recommendations for Localized Class Suspension in Schools During Inclement Weather Conditions Using Naive Bayes Classifier**
Michael Junice M. Salvilla and Aleta Fabregas (Polytechnic University of the Philippines, Philippines)
- 5D-2 **An Enhanced RT-DETR with Dual Convolutional Kernels for SAR Ship Detection**
Chushi Yu (University of Soongsil, Korea (South)); Yoan Shin (Soongsil University, Korea (South))
- 5D-3 **Modeling Energy-Related CO2 Emissions with Backpropagation and Metaheuristics**
Gawalee Phatai and Tidarat Luangrungruang (Sakon Nakhon Rajabhat University, Thailand)
- 5D-4 **Investigating the Suitability of Time Series Classification Algorithms for Embedded Systems: A Case Study on Bicycle Pedaling Detection**
Michael Oberle (Fraunhofer Institute for Manufacturing Engineering and Automation, Germany); Sascha Gärtner (Fraunhofer IPA, Germany); Florian A Maier (Fraunhofer Institute for Manufacturing Engineering and Automation IPA, Germany)

Oral Session - 6A: Information and Communications Technology - III

Chair: Prof. Adeel Iqbal (COMSATS University Islamabad, Pakistan)

Feb. 21 (Wed.), 13:30~15:30

- 6A-1 **Enhancing GAN-Based Motion Data Augmentation through Dynamic Time Warping Distance Filtering**
Junwon Yoon (Korea Institute of Robotics and Technology Convergence); Hyun-Joon Chung, Jeon-Seong Kang, Jung-Jun Kim, Kwang Woo Jeon and SeungWoo Kim (Korea Institute of Robotics and Technology Convergence, Korea (South)); Myoungsoon Shim and Jae-Kwan Ryu (LIG Nex1, Korea (South))

Oral Sessions

- 6A-2 **The Task Collaborative Migration Method for Marine IoT based on Edge Computing-RESTful Architecture**
Yifan Hu (Qingdao University of Technology, China); Fuqiang Wang (Shandong Computer Science Center; China)
- 6A-3 **LSTM based Proactive Access Point Selection and Mobility Load Balancing for Ultra-Dense Networks**
Munazza Shabbir (RMIT Australia, Australia); Sithamparanathan Kandeepan, Akram Al-Hourani and Wayne Rowe (RMIT University, Australia)
- 6A-4 **Machine Learning for Internet of Things: Applications and Discussions**
Heejae Park, SeungYeop Song, Tri-Hai Nguyen and Laihyuk Park (Seoul National University of Science and Technology, Korea (South))
- 6A-5 **MAC Protocol Adaptation Method in Coordination with Application**
Koshiro Aruga and Takeo Fujii (The University of Electro-Communications, Japan)
- 6A-6 **Predicting Estimated Time of Arrival Using Boosting Models**
Say Hong Kam and Yung-Wey Chong (Universiti Sains Malaysia, Malaysia); Noor Farizah Ibrahim (USM, Malaysia); Sye Loong Keoh (University of Glasgow, United Kingdom (Great Britain)); Sharul Kamal Abdul Rahim (Universiti Teknologi Malaysia, Malaysia); Somnuk Phon-Amnuaisuk (Universiti Teknologi Brunei, Brunei Darussalam)

Oral Session - 6B: Wireless Communication - III

Chair: Prof. Seokjoo Shin (Chosun University, Korea)

Feb. 21 (Wed.), 13:30~15:30

- 6B-1 **Outage Analysis for Active Reconfigurable Intelligent Surface-Enhanced Wireless Powered Communication Networks**
Waqas Khalid (Korea University & Sejong, South Korea, Korea (South)); Heejeung Yu (Korea University, Korea (South)); Alexandros Apostolos A. Boulogeorgos (University of Western Macedonia, Greece)
- 6B-2 **Shared Decision Making Using Distribution Estimation of Same Frequency Interference in 5G**
Taiga Kawaguchi and Osamu Takyu (Shinshu University, Japan)
- 6B-3 **End-to-End MIMO Systems With Conditional Generative Adversarial Networks**
Yifan Yao, Ju-in Shin and Xianglan Jin (Jeonbuk National University, Korea (South))
- 6B-4 **Two-dimensional Beam Selection for Multi-user Massive MIMO System Based on Multi-armed Bandit Algorithm**
Maki Arai and Mikio Hasegawa (Tokyo University of Science, Japan)
- 6B-5 **Random Access Sliced 5G-Advanced network for Machine Type Communication**
Paul Orim and Joyce Mwangama (University of Cape Town, South Africa)
- 6B-6 **Delay in Underwater Acoustic CSMA Networks**
Andrej Stefanov (IBU Skopje, Macedonia, the former Yugoslav Republic of)

Oral Sessions

Oral Session - 6C: Security - II

Chair: Prof. Bakhtair Ali (COMSATS University Islamabad, Pakistan)

Feb. 21 (Wed.), 13:30~15:30

- 6C-1 **A Time-Stamp Attack on Digital Twin-Based Lithium-ion Battery Monitoring for Electric Vehicles**
Mitra Pooyandeh (Dongguk University, Iran); Insoo Sohn (Dongguk University, Korea (South))
- 6C-2 **Federated Learning with Privacy-preserving Active Learning: A Min-Max Mutual Information Approach**
Zahir Alsulaimawi (Oregon State University, USA)
- 6C-3 **Secure and Fast Remote Application-Based Authentication Dragonfly using an LED Algorithm in Smart Buildings**
Batool Mohammed Radhi, Mohammed Abdulridha Hussain and Zaid Ameen Abduljabbar (University of Basrah, Iraq); Vincent O. Nyangaresi (Jaramogi Oginga Odinga University of Science & Technology, Kenya)
- 6C-4 **Privacy Leakage of DNS over QUIC: Analysis and Countermeasure**
Guannan Hu (The Graduate University for Advanced Studies, Japan); Kensuke Fukuda (National Institute of Informatics, Japan)
- 6C-5 **Dynamic Federated Learning Aggregation for Enhanced Intrusion Detection in IoT Attacks**
Muhammad Umair, Wooi Haw Tan and Yee Loo Foo (Multimedia University, Malaysia)

Oral Session - 6D: Decision and Control - II

Chair: Dr. Khizar

Feb. 21 (Wed.), 13:30~15:30

- 6D-1 **Variable Neighborhood Search based on Reinforcement Learning for Green Vehicle Routing Problem**
Malek Alrashidi and Mansoor Alghamdi (University of Tabuk, Saudi Arabia)
- 6D-2 **Dynamic Resource Allocation Using Deep Reinforcement Learning for 6G Metaverse**
Haesik Kim (VTT Technical Research Centre of Finland, Finland)
- 6D-3 **Anti-Jamming Strategy Based on Reinforcement Learning with Sequence Information**
Myeong ro Lee and Yoan Shin (Soongsil University, Korea (South))
- 6D-4 **Q-learning-based Traffic-aware Parent Selection for Wireless Powered Sensor Networks**
Sol-Bee Lee (Hallym University, Korea (South)); Jung-Hyok Kwon (Hallym University Smart Computing Laboratory, Korea (South)); Eui-Jik Kim (Hallym University, Korea (South))
- 6D-5 **Reward Distribution Using an Anti-duality Game in a Point Cloud Data Trading Model Based on Collected Area**
Jin Watanabe and Sumiko Miyata (Shibaura Institute of Technology, Japan); Kenji Kanai (The University of Tokyo & Waseda University, Japan)
- 6D-6 **Targeted data generation in the continuous production of anode slurries for lithium-ion battery cells**
Sven Oberdiek, Leah Jalowy, Flavio Gonzalez Vazquez, Monika Risling and Katja Wahl (Fraunhofer Institute for Manufacturing Engineering and Automation IPA, Germany)

Oral Sessions

Oral Session - 7A: Applications for Information Systems - VI

Chair: Dr. Muhammad Azfar Yaqub (Free University of Bozen-Bolzano, Italy)

Feb. 21 (Wed.), 15:50~17:50

- 7A-1 **Multi-task Transformer with LSTM Model for Question Set Generation**
Yeoun Chan Kim, Su Bin Jo and Min Ah Kim (TagHive Inc., Korea (South)); Radhika Makharia (TagHive Inc., India); Pankaj Agarwal (Tag-Hive. Inc, Korea (South))
- 7A-2 **Harnessing Generative AI for Manufacturing Innovation: Applications and Opportunities**
Mofeoluwa Jide-Jegede (East Tennessee State University, USA); Tomiwa Omotesho (Bowling Green State University, USA)
- 7A-3 **Distinguish between Obese and Normal Body Types through Gait Analysis using Classification Models**
Jae-sik Yi, Ji Hun Han, Min Jeong Kim and Youn-Sik Hong (Incheon National University, Korea (South))
- 7A-4 **An ANN-based Prediction Model for Public Bus Journey Time**
Yong Ting Lim and Sye Loong Keoh (University of Glasgow, United Kingdom (Great Britain)); Yung-Wey Chong (Universiti Sains Malaysia, Malaysia); Noor Farizah Ibrahim (USM, Malaysia); Sharul Kamal Abdul Rahim (Universiti Teknologi Malaysia, Malaysia)
- 7A-5 **Performance Analysis of Delay and Size-Dependent Scheduling for IoT-based Healthcare Traffic using Heterogeneous Multi-Server Priority Queueing System**
Barbara Kabwiga Asingwire (University of Rwanda & Busitema University, Rwanda); Louis Sibomana (National Council for Science and Technology, Rwanda)
- 7A-6 **Recognize Anomaly Data in IoTs using Blockchain Techniques based on Quality of Experience (QoE)**
Seyed Salar Sefati (Politehnica University of Bucharest, Romania); Ahmed Nor (University Politehnica Bucharest, Romania & Aswan University, Egypt); Octavian Fratu and Simona V. Halunga (University Politehnica of Bucharest, Romania)

Oral Session - 7B: Brain + AI

Chair: Dr. Muhammad Toaha Raza Khan (Middle East Technical University, Cyprus Campus, Turkey)

Feb. 21 (Wed.), 15:50~17:50

- 7B-1 **Comparison experiment of artificial intelligence models based on EEG wave continuity**
Youn-sang Kim (University of Konyang, Korea (South)); Ju-Hyuck Han (Konyang University, Korea (South)); Han-Jo Lee (Safecoms Co., Korea (South)); Woong-Sik Kim (Konyang University, Korea (South))
- 7B-2 **An Improved Transfer Learning-Based Model with Data Augmentation for Brain Tumor Detection**
Rizal Dwi Prayogo, Nur Hamid, and Hidetaka Nambo (Kanazawa University, Japan)
- 7B-3 **Provably Efficient and Fast Technique for Determining the Size of a Brain Tumor in T1 MRI Images**
Ali Hasan Ali (University of Debrecen, Hungary); Hend Muslim Jasim and Zaid Ameen Abduljabbar (University of Basrah, Iraq); Vincent O. Nyangaresi (Jaramogi Oginga Odinga University of Science & Technology, Kenya); Samir M. Umran (Huazhong University of Science and Technology, Iraq & Iraqi Ministry of Industrial and Minerals, Iraq); Junchao Ma (Shenzhen Technology University, China); Dhafer G. Honi (University of Basrah, Iraq)

Oral Sessions

- 7B-4 **SSNet: Synergistic Segmentation of Brain MRI Scans using nnUNetv2 and SAM-track**
Yong Eun Jang (Ajou University, Korea (South)); Kwangju Kim (ETRI, Korea (South)); In-Su Jang (Electronics and Telecommunications Research Institute(ETRI), Korea (South)); Gwang Lee (Ajou University, Korea (South))
- 7B-5 **FTT: Fourier Transform based Transformer for Brain CT Report Generation**
Jieun Kim, Byeong Su Kim and Insung Choi (Yonsei University, Korea (South)); Zepa Yang (Korea University); Beakcheol Jang (Yonsei University, Korea (South))
- 7B-6 **Non-Invasive Blood Glucose Estimation Based on Machine Learning Algorithms Using PPG Signals**
Shama Satter, Tae-Ho Kwon and Ki-Doo Kim (Kookmin University, Korea (South))

Oral Session - 7C: AI Foundation - III

Chair: Prof. Insoo Sohn (Dongguk University, Korea)

Feb. 21 (Wed.), 15:50~17:50

- 7C-1 **Graph Neural Network for Digital Twin Network: A Conceptual Framework**
Abubakar Isah, Ibrahim Aliyu, Rashid Muhammad Sulaiman and Jinsul Kim (Chonnam National University, Korea (South)); Hyeju Shin (Chonnam National University & Chonnam National University in Gwangju, South Korea, Korea (South))
- 7C-2 **An application of a PDE-based neural network with Bayesian optimization to regression**
Hirota Honda (Toyo University, Japan)
- 7C-3 **Patch-based Time-Series Anomaly Detection with Cross-Variable Attention**
Jeena Son, Seunghwan Song and Jun-Geol Baek (Korea University, Korea (South))
- 7C-4 **Genetic Algorithm-Based Pruning for Efficient DenseNet Architectures**
Jingeun Kim (Gachon University, Korea (South)); Yong-Hyuk Kim (University of Kwangwoon, Korea (South)); Yourim Yoon (Gachon University, Korea (South))
- 7C-5 **Univariate Time Series Data Correction Method using LSTM Autoencoder with Temporal Distance**
Sohyeon Yun and Hanjoon Kim (University of Seoul, Korea (South))
- 7C-6 **UMAD-G: Unsupervised Multi-modal time series Anomaly Detection via Graph**
Jinhyeok Lee and Jun-Geol Baek (Korea University, Korea (South))

Oral Session - 7D: Information and Communications Technology - IV

Chair: Dr. Junaid Akram (The University of Sydney, Australia)

Feb. 21 (Wed.), 15:50~17:50

- 7D-1 **A Study on Estimation Method of Interference State during Frequency Sharing in 5G Cellular Systems**
Taiga Kawaguchi and Osamu Takyu (Shinshu University, Japan); Takeo Fujii (The University of Electro-Communications, Japan)

Oral Sessions

- 7D-2 **Neural Networks Based Behavioral Modeling of Dual-Band RF Power Amplifiers using Augmented BiLSTM Structures**
Majid Ahmed, Ahmad Dalbah and Oualid Hammi (American University of Sharjah, United Arab Emirates); Fadhel Ghannouchi (University of Calgary, Canada)
- 7D-3 **Evaluation of XAI algorithms in IoT Traffic Anomaly Detection**
Uyen Do (University of Information Technology - VNU HCM, Vietnam); Laura Lahesoo (Technische Universität München, Germany); Rodrigo Matos Carnier and Kensuke Fukuda (National Institute of Informatics, Japan)
- 7D-4 **Simpler Machine Learning Methods Outperform Deep Learning in Motor Fault Detection**
Antonio C. Briza (Advanced Science and Technology Institute, Department of Science and Technology (DOST-ASTI), Philippines & Asian Institute of Management, Philippines); Eduardo Jr Piedad (Advanced Science and Technology Institute & Universitat Polytechnica de Catalunya, Philippines); Elmer C Peramo (Advanced Science and Technology Institute & Department of Science and Technology, Philippines)
- 7D-5 **Applying GNN Models for Diverse Disaster Detection using Temporal Knowledge Graphs**
Seonhyeong Kim and Young-Woo Kwon (Kyungpook National University, Korea (South))
- 7D-6 **A Two-phase Multi-class Botnet Labeling Approach for Real-world Traffic**
Ta Chun Lo and Shan-Hong Yang (National Cheng Kung University, Taiwan); Jyh-Biau Chang (Lunghwa University of Science and Technology, Taiwan); Chung-Ho Chen (National Cheng-Kung University, Taiwan); Ce-Kuen Shieh (National Cheng Kung University, Taiwan)

Oral Session - 8A: Applications for Information Systems - VII

Chair: Dr. Huey-Ing Liu (Fu Jen Catholic University, Taiwan)

Feb. 22 (Thur.), 9:30~11:30

- 8A-1 **Smart Process Failure Analysis based on Bayesian Networks and Knowledge Graphs**
Aleksandra Mueller (WZL of the RWTH Aachen University & Chair of Machine Tools, Germany)
- 8A-2 **Elevator Breakdown Prediction using LSTM Analysis of Monitoring Data**
Gabriele Iuculano and Muhammad Zeeshan Babar (University of Leeds, Switzerland)
- 8A-3 **An Optimization Tool for Local Customized Object Detector in Edge Devices**
Jang Woon Baek (ETRI, Korea (South))
- 8A-4 **Forecasting Daily Power Generation of a PV Power Plant based on Deep Learning**
Ida Bagus Krishna Yoga Utama (Kookmin University, Korea (South)); ByungDeok Chung (ENS. Co. Ltd., Korea (South)); Yeong Min Jang (Kookmin University, Korea (South))
- 8A-5 **Automated Fact Checking Using A Knowledge Graph-based Model**
Arghya Kundu and Uyen Trang Nguyen (York University, Canada)

Oral Sessions

Oral Session - 8B: Language + AI

Chair: Dr. Devarani Devi Ningombam (National Institute of Technology Patna, India)

Feb. 22 (Thur.), 9:30~11:30

- 8B-1** **TatarTTS: An Open-Source Text-to-Speech Synthesis Dataset for the Tatar Language**
Daniil Orel and Askat Kuzdeuov (Nazarbayev University, Kazakhstan); Rinat Gilmullin (Institute of Applied Semiotics of Tatarstan Academy of Sciences, Russia); Bulat Khakimov (Institute of Applied Semiotics of Tatarstan Academy of Sciences & Kazan Federal University, Russia); Huseyin Atakan Varol (Nazarbayev University, Kazakhstan)
- 8B-2** **ChatGPT for Visually Impaired and Blind**
Askat Kuzdeuov, Olzhas Mukayev, Shakhizat Nurgaliyev, Alisher Kunbolsyn and Huseyin Atakan Varol (Nazarbayev University, Kazakhstan)
- 8B-3** **Developing a ChatGPT-based text extraction model to analyze effective communication elements in pandemic-related Social Q&A responses**
Hyunwoo Moon (Sungkyunkwan University, Korea (South)); Beom Jun Bae (Georgia Southern University, Korea (South)); Sangwon Bae (University of Georgia, Korea (South))
- 8B-4** **Noise-Robust Multilingual Speech Recognition and the Tatar Speech Corpus**
Saida Mussakhoyayeva (Nazarbayev University, Kazakhstan); Rinat Gilmullin (Institute of Applied Semiotics of Tatarstan Academy of Sciences, Russia); Bulat Khakimov (Institute of Applied Semiotics of Tatarstan Academy of Sciences & Kazan Federal University, Russia); Mansur Galimov (Institute of Applied Semiotics of Tatarstan Academy of Sciences, Russia); Daniil Orel, Adal Adilbekov and Huseyin Atakan Varol (Nazarbayev University, Kazakhstan)
- 8B-5** **Using StarGANv2 Voice Conversion to Enhance the Quality of Dysarthric Speech**
Hadil Mehrez (National Institute of Applied Science and Technology); Mounira Chaiani (Université de Moncton, Canada); Sid-Ahmed Selouani (Université de Moncton, Campus de Shippagan, Canada)
- 8B-6** **KeyBERTScore: Evaluation Metric for BERT-based Text Summarization**
YoungRok Kim and Sang-Chul Kim (Kookmin University, Korea (South))

Oral Sessions

Oral Session - 8C: Information and Communications Technology - V

Chair: Dr. Vrajesh Sharma, Panjab University SSG Regional Centre, Hoshiarpur, Punjab, INDIA

Feb. 22 (Thur.), 9:30~11:30

- 8C-1 **Designing Data Pipeline for Network Data Management in Digital Twin Network Environment**
Hyeju Shin (Chonnam National University & Chonnam National University in Gwangju, South Korea, Korea (South)); Seungmin Oh, Jihoon Lee, Kwang-moo Chung and Jinsul Kim (Chonnam National University, Korea (South))
- 8C-2 **An Efficient Approach for Maintaining and Mining Frequent Episodes**
Show-Jane Yen and Yue-Shi Lee (Ming Chuan University, Taiwan)
- 8C-3 **Static vs. Dynamic Databases for Indoor Localization based on Wi-Fi Fingerprinting: A Discussion from a Data Perspective**
Zhe Tang (University of Liverpool, China); Ruocheng Gu (Xi'an Jiaotong-Liverpool University, China); Sihao Li (University of Liverpool, China & Xi'an Jiaotong Liverpool University, China); Kyeong Soo Kim (Xi'an Jiaotong-Liverpool University, China); Jeremy Smith (University of Liverpool, United Kingdom (Great Britain))
- 8C-4 **An Evaluation of CNN using Deep Residual Learning for Modulation, 5G, LTE, and WLAN System Classification**
Teruji Ide and Tadatomo Sato (National Institute of Technology, Kagoshima College, Japan); Rozeha A. Rashid and Leon Chin (Universiti Teknologi Malaysia, Malaysia); Mohd Adib Sarijari (Universiti of Teknologi Malaysia, Malaysia); Rubita Sudirman (Universiti Teknologi Malaysia, Malaysia)
- 8C-5 **Local 5G Received Signal Power Measurement in Presence of Building**
Ryuya Sembo (Kagawa University, Japan); Junji Terai (STNet, Incorporated, Japan); Nobuhiko Miki (Kagawa University, Japan)
- 8C-6 **Design of an Efficient Parallel Random Number Generator using a Single LFSR for Stochastic Computing**
Donghui Lee, Hyojun Seo and Yongtae Kim (Kyungpook National University, Korea (South))

Oral Session - 8D: Applications for Information Systems - VIII

Chair: Prof. Ghufuran Shafiq (COMSATS University Islamabad, Pakistan)

Feb. 22 (Thur.), 9:30~11:30

- 8D-1 **Artificial Intelligence Applications for Resilience in Manufacturing — A Systematic Literature Review**
Florian A Maier and Sivaphani Puppala (Fraunhofer Institute for Manufacturing Engineering and Automation IPA, Germany); Michael Oberle (Fraunhofer Institute for Manufacturing Engineering and Automation, Germany)
- 8D-2 **Leveraging OpenAPI for Microservice Decomposition: A Comparative Study on Features, Encodings and Algorithms on a real MES**
Michael Oberle (Fraunhofer Institute for Manufacturing Engineering and Automation, Germany); Thomas Bauernhansl (Universität Stuttgart, Germany)

Oral Sessions

- 8D-3 **System for Talent Acquisition: Integrating AI, Automation, and Data Analysis in HR**
Gulnara Abitova (State University of New York at Binghamton, USA & Astana IT University, Kazakhstan); Ayanbek Serikov (Astana IT University, Kazakhstan); Vladimir Nikulin (Binghamton University (SUNY), USA); Mira Rakhimzhanova and Gulnur Shuteyeva (Astana IT University, Kazakhstan); Korlan Kulniyazova (L. N. Gumilyov Eurasian National University, Kazakhstan)
- 8D-4 **RISC-V R-Extension: Advancing Efficiency with Rented-Pipeline for Edge DNN Processing**
Won Hyeok Kim, Hyeong Jin Kim and Tae Hee Han (Sungkyunkwan University, Korea (South))
- 8D-5 **The Influence of User Profile and Post Metadata on the Popularity of Image-based Social Media: A Data Perspective**
Shintami Chusnul Hidayati, Muhammad Rizqi Fiqih Thalib and Abdul Munif (Institut Teknologi Sepuluh Nopember, Indonesia)
- 8D-6 **Dilated Causal Convolution Based Human Activity Recognition using Voxelized Point Cloud Radar Data**
Samuel Kakuba and Savina Jassica Colaco (Kyungpook National University, Korea (South)); Jung Hwan Kim (KyungPook National University, Korea (South)); Dong Gyu Lee, Young Jin Yoon and Dong Seog Han (Kyungpook National University, Korea (South))

Poster Session

Poster Session: AI Applications in Information and Communication Technologies

Chair: Assist. Prof. Jin Nakazato (Tokyo University)

Feb. 20 (Tue.), 15:40~17:40

- P-1 **Model Parameter Identification for DC Motor using Rapid Control Prototyping System**
Pyung Soo Kim and Su Min Kim (Tech University of Korea, Korea (South))
- P-2 **Object Classification with YOLOv5 for Electric Power Lines Inspection using UAVs**
Hen-Geul Yeh, Richard Nguyen and Sean (Seok-Chul) Kwon (California State University Long Beach, USA)
- P-3 **Pioneering AI in Chemical Data: New Frontline With GC-MS Generation**
Namkyung Yoon and Hwangnam Kim (Korea University, Korea (South))
- P-4 **Bit-by-Bit: A Quantization-Aware Training Framework with XAI for Robust Metaverse Cybersecurity**
Ebuka Chinaechetam Nkoro, Cosmas Ifeanyi Nwakanma, Jae Min Lee and Dong Seong Kim (Kumoh National Institute of Technology, Korea (South))
- P-5 **Design of crop harvest time prediction system using thermal imaging**
Hyeono Choe (Suncheon National University, Korea (South)); Meong Hun Lee (SunChon National University, Korea (South)); Hyun Yeo (Suncheon national University, Korea (South))
- P-6 **Securing Critical Infrastructure: A Denoising Data-Driven Approach for Intrusion Detection in ICS Network**
Urslla Uchechi Izuazu, Vivian Ukamaka Ihekoronye, Dong Seong Kim and Jae Min Lee (Kumoh National Institute of Technology, Korea (South))
- P-7 **Machine Learning Based Battery Anomaly Detection using Empirical Data**
Md. Shahriar Nazim and Yeong Min Jang (Kookmin University, Korea (South)); ByungDeok Chung (ENS. Co. Ltd., Korea (South))
- P-8 **Proximity-Driven Light Intensity Modulation for Enhanced Bidirectional Optical Camera Communication**
Muhammad Rangga Aziz Nasution, Herfandi Herfandi and Ones Sanjerico Sitanggang (Kookmin University, Korea (South)); ByungDeok Chung (ENS. Co. Ltd., Korea (South)); Yeong Min Jang (Kookmin University, Korea (South))
- P-9 **Feature Selection for Lightweight Deep Learning Based CO2 Level Prediction in Edge Device**
Khairi Hindriyandhito, Radityo Fajar Pamungkas and Ida Bagus Krishna Yoga Utama (Kookmin University, Korea (South)); ByungDeok Chung (ENS. Co. Ltd., Korea (South)); Yeong Min Jang (Kookmin University, Korea (South))
- P-10 **Design and Implementation of Deep Learning-Based MIMO C-OOK Scheme for Optical Camera Communication Considering Mobility Environment**
Huy Nguyen (Kookmin University, Korea (South)); ByungDeok Chung (ENS. Co. Ltd., Korea (South)); Yeong Min Jang (Kookmin University, Korea (South))
- P-11 **Design of Greenhouse automated carbon cycling system for carbon savings**
Kwangho Yang (Suncheon National University, Korea (South)); Hyun Yeo (Suncheon, Korea (South)); Meong Hun Lee (SunChon National University, Korea (South)); Mi Suk Kim (Suncheon National University, Korea (South))

Poster Session

- P-12 **A study on the design of a melon fruit size prediction system using GDD and integrated solar radiation**
Sangmin Lim (Suncheon National University, Korea (South)); Meong Hun Lee (SunChon National University, Korea (South)); Hyun Yeo (Suncheon, Korea (South))
- P-13 **Greenhouse Environment Management System Based on Growth Measurement**
Si Eun Park (Suncheon National University, Korea (South)); Hyun Yeo (Suncheon, Korea (South)); Meong Hun Lee (SunChon National University, Korea (South)); Bichnal Kim (Sunchon National University, Korea (South))
- P-14 **Research on greenhouse switchgear system using RFID chips**
HyeonSeo Kim (South Korea, Korea (South)); Meong Hun Lee (SunChon National University, Korea (South)); Hyun Yeo (Suncheon, Korea (South)); Seol Hee Yoon (Sunchon National University, Korea (South))
- P-15 **Robust EEG-based Motor Imagery Brain-Computer Interface using Lp-norm-based Common Spatial Patterns**
Young-Seok Choi, Ji-Hack Lee and Hyeon Kyu Lee (Kwangwoon University, Korea (South))
- P-16 **Efficient Blood Pressure Estimation Using Seismocardiogram and Electrocardiogram**
Seungju Han, Changhee Kim, Taehwan Kim and Sangmin Lee (Kyunghee University, Korea (South))

Venue

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<https://www.onc.osaka-u.ac.jp/>



Travel Information

Osaka

<https://en.wikipedia.org/wiki/Osaka>

Osaka – Simple English Wikipedia, the free encyclopedia

<https://simple.wikipedia.org/wiki/Osaka>

Osaka Prefecture

https://en.wikipedia.org/wiki/Osaka_Prefecture

Osaka – Travel guide at Wikivoyage

<https://en.wikivoyage.org/wiki/Osaka>

What to do in Osaka City

<https://www.japan-guide.com/e/e2157.html>

Osaka | Kansai | Destinations

<https://osaka-info.jp/en/>

Things to do in Osaka

<https://en.japantravel.com/osaka>

THE 15 BEST Things to Do in Osaka – 2023 (with Photos)

https://www.tripadvisor.com/Attractions-g298566-Activities-Osaka_Osaka_Prefecture_Kinki.html

Inside Osaka – Your Osaka Travel Guide

<https://insideosaka.com/>

Ultimate Osaka Travel Guide 大阪

<https://www.justonecookbook.com/ultimate-travel-guide-to-osaka/>

Osaka Travel Essentials – Useful Information to Help You ...

<https://kr.hotels.com/go/japan/osaka-travel-essentials>

Your Guide to Visiting Osaka in 2023

<https://www.kkday.com/en/blog/49757/asia-japan-osaka-travel-guide>

Visit Osaka: Travel Guide to Japan (2023)

<https://www.willflyforfood.net/the-first-timers-travel-guide-to-osaka-japan/>

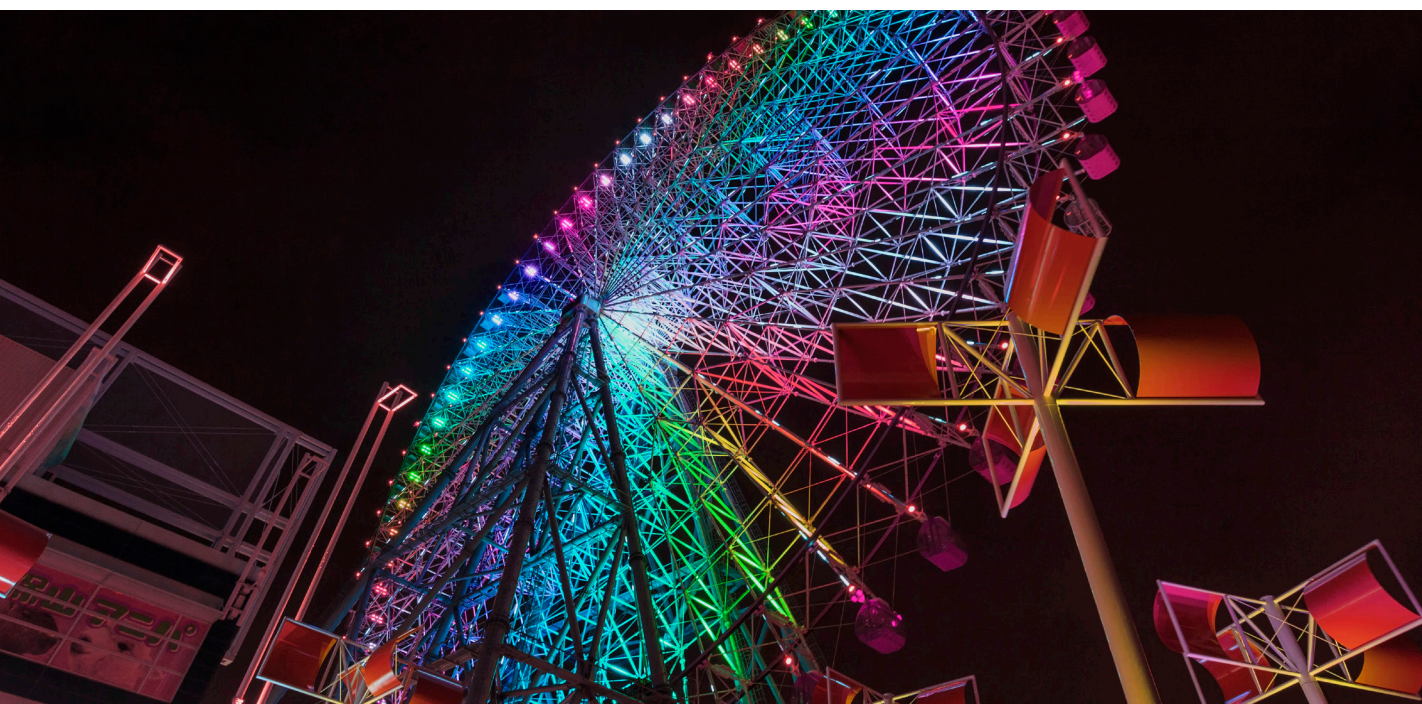
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