



KOREAN SOCIETY FOR INTERNET INFORMATION

The 18th Asia Pacific International Conference on Information Science and Technology (APIC-IST 2023)

June 25-28, 2023, Acros Fukuoka 7F, Fukuoka, Japan
<http://www.apicist.org>

Conference Program

| Organized by |

Korean Society for Internet Information (KSII)

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A Message from Honorary Chair

I express my warm heartfelt welcome to all of attendants of the 18th Asia Pacific International Conference on Information Science and Technology (APIC-IST 2023) that will be held on June 25~28, 2023 in Acros Fukuoka, Fukuoka city, Japan

I deeply appreciate all contributors for submitting papers, chairing sessions, and reviewing papers. And I must thank for the support we received from many companies.



Over the past 23 years, KSII (Korea Society for Internet Information) has increased its academic impact and influence in the area of Information Science, Computer Engineering and Internet Technology both worldwide and nationwide through this international conference and its SCIE-indexed journal, the *KSII Transactions on Internet and Information Systems* (TIIS).

As many of you have witnessed, APIC-IST is one of important International Conferences which KSII have provide annually. The amount of interest towards the internet is never decreasing among both the international academic and practitioners' communities. Topics covered in APIC 2023 truly represent the comprehensiveness of this conference. We are sure that APIC-IST 2023 will provide you with a wealth of information and many opportunities for future discussion.

Many people have worked hard to make APIC 2023 successful. A variety of conference arrangements and special events as well as well organized program have been prepared by the Conference Chair Prof. Jang-Hyun Kim (Sungkyunkwan Univ., ROK), Program Chairs Prof. Ji-Hwan Kim (Sogang Univ., ROK), Prof. Imran Ghani (Virginia Military Institute, USA). I also express my special thanks to the Keynote Speaker Dr. Jim Jansen (PhD) who is Qatar Computing Research Institute (QCRI), Hamad Bin Khalifa University, Doha, Qatar and Editor-in-chief, Information Processing and Management. In addition, my special thanks go to Advisory Board members, Program Committee members, Steering Committee members.

Last but not least, I would like to thank all authors and speakers again for their valuable research papers and efforts to make the 18th APIC-IST 2023 a success! I wish a great success in their future endeavor and look forward to meeting you all again at ICONI 2023 that will be held in December.

Dr. Kwanghoon Pio Kim
Honorary Chair of APIC-IST 2023

A Message from Conference Chair

Welcome to the 18th Asia Pacific International Conference on Information Science and Technology (APIC-IST 2023), which will be held on June 25-28, 2023, at Acros Fukuoka, Fukuoka city, Japan. APIC-IST is an annual conference organized by KSII providing an open forum for researchers, engineers, policy makers, and service providers in the Information Science and Technology.

In this year, we are glad to invite the prospective authors to submit oral & poster papers in the following areas:
Network/Internet of Things/Mobile Computing, Intelligent ICT Convergence/Smart Building, Big data platform /Analysis / Application, Cloud Computing/Digital Twin/Smart Factory, Security System/Information Security, Artificial Intelligence/Time Series Machine Learning, Defense Information Technology/High Performance Computing, Cyber Education/Social Media/Metaverse/UX/SNS, Scientific Public Security / Crime Prevention/Intelligent CCTV Application, Technology Management /e-commerce/Information System/ERP/BPM/DX, Graphics/Image Processing/Video Deep Learning/Video Control, Software High Growth Club, KETI Workshop and KDSA- Special Session.

As time goes on, annual APIC-IST conference becomes more qualified conference in which many honorable researchers participate to share their valuable research results. APIC-IST 2023 offer 1 invited talk, 19 sessions and a special workshop that present the latest results in various research fields of ICT (Information Communication Technology).

I must thank to all the authors and speakers for the research papers on their precious achievements. Fukuoka city is one of most popular tourist destinations in Japan. It is known as a beautiful and historical place in the world. I hope all participants of APIC-IST take this opportunity to explore and experience encounter beautiful nature simultaneously while staying in Fukuoka, Japan.



Dr. Jang-Hyun Kim
Sungkyunkwan
Univ., ROK

Dr. Jang-Hyun Kim
Conference Chair of APIC-IST 2023

A Message from Program Chairs

It is a pleasure to welcome you to the 18th Asia Pacific International Conference on Information Science and Technology (APIC-IST 2023). The APIC-IST 2023 will be held in Fukuoka, Japan on June 25-28. APIC-IST is one of the premier conferences in the Asia Pacific region. The hosting organization (KSII) is one of the largest ICT related academic societies in Korea.

Over the past 18 years, APIC-IST has grown to be one of the major international conferences in Information Science and Technology area.

APIC-IST aims to provide a high-quality forum for researchers and practitioners to share research findings, practices and ideas on key issues in ICT related technologies, services, and administrations. The APIC-IST 2023 Program Committee organizes 15 tracks and presentations of completed research papers as well as research-in-progress papers, panel discussion, and posters.

We very appreciate the talents, dedication and time of many reviewers from USA, Singapore, Canada, Vietnam, Pakistan, China and Republic of Korea. We would like to express special gratitude and appreciation to Dr. Kwanghoon Pio Kim, Dr. Jang-Hyun Kim and session chairs.

All submitted papers have gone through a fair paper review process and excellent 101 papers will be presented at APIC-IST 2023. We would like to thank to all the authors and speakers for submitting and presenting their valuable research works at APIC-IST 2023.



Dr. Ji-Hwan Kim
Sogang Univ., ROK



Dr. Imran Ghani
Virginia Military
Institute, USA

Dr. Ji-Hwan Kim & Dr. Imran Ghani
Program Chairs of APIC-IST 2023

Keynote Speaker

Keynote Speaker Dr. Jim Jansen (PhD)

Principal Scientist

Qatar Computing Research Institute (QCRI), Hamad Bin Khalifa University
Doha, Qatar

Editor-in-chief
Information Processing and Management



Title: Understanding Audiences, Customers, and Users via Analytics

Abstract of the talk:

Using digital analytics from the laboratory, social media platforms, and the Web is an industry-standard approach for understanding audiences, customers, and users. The people that assume these roles of audiences, customers, and users often have complex behaviors and motivations that are challenging to understand. The use of analytics can aid in this understanding. After conceptualizing the analytics process, this presentation will skim analytics foundations, including strategies, data-gathering approaches, and validation methods. We will also discuss specific methods, including Eye Tracking, Mouse Tracking, Social Media APIs, Search Logs, and Analytics Triangulation both in and outside the lab. We will also discuss the validity of online analytics. The presentation aims to offer a primer on contemporary lab, Web, and social media analytics topics.

Short Bio :

Dr. Jim Jansen is a Principal Scientist in the Social Computing Group of the Qatar Computing Research Institute leading a research team working on the automatic generation of personas (see <https://persona.qcri.org/>). He is a graduate of West Point and has a Ph.D. in computer science from Texas A&M University. Professor Jansen is editor-in-chief of the journal, Information Processing & Management (Elsevier), a member of the editorial boards of seven international journals, and former editor-in-chief of the journal, Internet Research (Emerald). He has received several awards and honors, including an ACM Research Award, six application development awards, and a university-level teaching award, along with other writing, publishing, research, teaching, and leadership honors. Dr. Jansen has authored or co-authored 350 or so research publications, with articles appearing in a multi-disciplinary range of journals and conferences. He is the author of the book, Understanding Sponsored Search: A Coverage of the Core Elements of Keyword Advertising (Cambridge University Press).

Organizing Committee

| Honorary Chair |

Kwanghoon Pio Kim, Kyonggi University, ROK

| Conference Chair |

Jang-Hyun Kim, Sungkyunkwan University, ROK

| Program Chairs |

Ji-Hwan Kim, Sogang University, ROK

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| Workshop Chair |

Kiwon Kwon, KETI, ROK

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Organizing Committee

| Program Committee |

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DongKyoo Shin, Sejong Univ., ROK

Hangbae Chang, Chung-Ang University, ROK

Hoill Jung, Daelim College, ROK

Jieun Han, Hanyang University, ROK

Kyung Han You, Jeonbuk National University, ROK

Sangmin Lee, CHA University, ROK

Woochun Jun, Seoul National University of Education, ROK

Yong-Suk Park, Korea Electronics Technology Institute, ROK

Yongwon Kim, Korea Expressway Corporation Research Institute, ROK

Younkyu Lee, Hongik University, ROK

Yoosi Kim, Airdeep Ltd., ROK

Jisu Kim, Singapore Institute of Technology, Singapore

Ogan Gurel, L'Institut des Sciences et Arts, Canada

Conference Program

Sun / Jun. 25, 2023	Room 1			
17:00-19:00	VIP Reception & Greetings			
Mon / Jun. 26, 2023	Room 1	Room 2	Room 3	Room 4
08:30-	Registration			
09:00-10:30	Session 1	Session 2	Session 3	Session 4
10:40-11:10	Opening Ceremony & Keynote Speech			
11:20-12:20		Session 5	Session 6	Session 7
12:20-14:00	Lunch (12:20-14:00)			
14:10-15:40	Session 8	Session 9	Session 10	Session 11
18:00-19:30	Award Ceremony & Banquet (The Luigans Spa and Resort)			
Tue / Jun. 27, 2023	Room 1	Room 2	Room 3	Room 4
09:00-10:30	Session 12	Session 13	Session 14	Session 15
10:40-12:10	Session 16	Session 17	Session 18	Session 19
12:10-14:00	Lunch (12:10-14:00)			
14:10-15:00	Panel Discussion : Collaborative Research			
Wen / Jun. 28, 2023				
10:00-13:00	Conference Special Program "teamLap Forest Fukuoka" / paypaydom			

Conference Program

Sun, June 25, 2023

17:00-19:00	VIP Reception & Greetings
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Mon, June 26, 2023

09:00-10:30	Session 1: Interactive Presentation Session I
	Session 2: Network/Internet of Things/Mobile Computing
	Session 3 : Artificial Intelligence/Time Series Machine Learning
	Session 4 : Security system/information security
10:40-11:10	Opening Ceremony & Keynote Speech "Understanding Audiences, Customers, and Users via Analytics" / Dr. Jim Jansen
11:20-12:20	Session 5: Intelligent ICT Convergence/Smart Building & Cloud Computing/Digital Twin/Smart Factory
	Session 6: Technology management/e-commerce /information system/ERP/BPM/DX
	Session 7: Future Information Security

Conference Program

Mon, June 26, 2023

12:20-14:00	Lunch (12:20-14:00)
14:10-15:40	Session 8: KETI Workshop I
	Session 9: Cyber Education/Social Media/Metaverse /UX/SNS
	Session 10: Scientific public security/crime prevention/intelligent CCTV application
	Session 11: Big data platform/analysis/application
18:00-19:30	Award Ceremony & Banquet (The Luigans Spa and Resort)

Tue, June 27, 2023

09:00-10:30	Session 12: Interactive Presentation Session II
	Session 13: KETI Workshop II
	Session 14: KDSA-Huple Special Session
	Session 15: KDSA-Advanced Institute of Convergence Technology Special Session

Conference Program

Tue, June 27, 2023

10:40-12:10	Session 16: Interactive Presentation Session III
	Session 17: Artificial Intelligence/Time Series Machine Learning
	Session 18: KDSA-The IMC TEXTOM Workshop Special Session
	Session 19: KDSA-Human AI Interaction BK21 Education Research Group Special Session
12:10-14:00	Lunch (12:10-14:00)
14:10-15:00	Panel Discussion : Collaborative Research

Wed, June 28, 2023

10:00-13:00	Conference Special Program "teamLap Forest Fukuoka" / paypaydom
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*** Presentation Time**

- Oral Session: 10 minutes Presentation / 5 minutes Q&A

Conference Program

| 09:00-10:30, Mon, June 26, 2023 |

Session 1: Interactive Presentation Session I (Room 1)

09:00-10:30, Mon, June 26, 2023

Chair: Dr. Junho Ahn
(Kyonggi Univ., ROK)

1-1	Proposal of a Hardware-in-the-Loop Simulation System for Automatic Charging Systems for Battery Electric Buses
	Koog-Hwan Oh, Hyun-Chang Cho (Korea Electronics Technology Institute, ROK)
1-2	Antibiotic Risk Assessment System in Korean Agricultural Environment based on Monte Carlo Simulation
	Han Jong Gil, Il Ryong Kweon, Min Ho Son (PODO Inc, ROK)
1-3	A Haptic Data Glove for VR Interactions
	Sang-Woo Seo (Electronics and Telecommunications Research Institute, ROK), Yejin Kim (Hongik Univ., ROK)
1-4	An Off-Chain Methodological Approach for Ensuring Authenticity of Non-Fungible Tokens
	Heesang Kim, Jaewook Koo, Dohoon Kim (Kyonggi Univ., ROK)
1-5	Automated Dysarthria Severity Classification Using Diadochokinetic test and Speech Intelligibility Based on LightGBM
	MinSeo Kim, Junseok Oh, Ji-Hwan Kim (Sogang Univ., ROK)
1-6	UdiOlle: An Olle Trail Course Recommendation Mobile Application Reflecting User Preferences
	Nayoung Kim, Dongho Yang (Jeju National Univ., ROK)

Continue next page (session 1)

Conference Program

| 09:00-10:30, Mon, June 26, 2023 |

Session 1: Interactive Presentation Session I (Room 1)

09:00-10:30, Mon, June 26, 2023

Chair: Dr. Junho Ahn
(Kyonggi Univ., ROK)

1-7

An Algorithm based on Infant Abnormal Posture Detection through AI Pose Estimation

Jeonghyo Kim, Seungha Noh, Sunwoo Pi, Wonbeen Im, Chanui Hong, Sangjin Kim (Kyonggi Univ., ROK)

1-8

Privacy-Preserving DTx with Differential Privacy

Geehee Yun, Kyoungjin Kim (Sungshin Women's Univ., ROK)

1-9

A Research on the Highway New Business Models Corresponding to Changes in Future Transportation Environment

Yong-won Kim (Korea Expressway Corporation Research Institute, ROK)

Conference Program

| 09:00-10:30, Mon, June 26, 2023 |

Session 2: Network/Internet of Things/Mobile Computing (Room 2)

Chair: Dr. Ji-Hwan Kim

09:00-10:30, Mon, June 26, 2023

(Sogang Univ., ROK)

2-1	Shipboard Indoor Positioning: A Controllable Feature Selection for IQ Fingerprint Map of Bluetooth 5.1
	Qianfeng Lin, Jooyoung Son (Korea Maritime and Ocean Univ., ROK)
2-2	A Visualization Method of Abnormal Sound Using Acoustic Measurement System Based on Socket Network Communication for Web Client Users
	Jiin Shin, Suyoung Kim, Jaehyun Lee, Jongho Paik (Seoul Women's Univ., ROK)
2-3	A Study on Vulnerability Analysis and Memory Forensics of ESP32
	Jiyeon Baek, Jiwon Jang, Seongmin Kim (Sungshin Women's Univ., ROK)
2-4	Generating multicast routing trees method in SDN using Pearl
	Heechan Kim, Janggun Jeon, Yejin Lee, Namgi Kim (Kyonggi Univ., ROK)
2-5	Implementation of Graph Neural Network for Link Prediction in Software-Defined Networks
	Syed M. A. H. Bukhari, Afaq Muhammad, Wang-Cheol Song (Jeju National Univ., ROK)

Conference Program

| 09:00-10:30, Mon, June 26, 2023 |

Session 3: Artificial Intelligence/Time Series Machine Learning (Room 3)

Chair: Dr. Dinh-Lam Pham

09:00-10:30, Mon, June 26, 2023

(Vietnam National Univ., Vietnam)

3-1 Road Hazardous Object Recognition System for the Visually Impaired

Sung-Hyun Kang, Yong-Jin Joo, Ji-Min Son, Yoon-Jung Yu, Sang-Jin Lee, Jun-ho Ahn (Kyonggi Univ., ROK)

3-2 Enhancing Additive Manufacturing Processes with Machine Learning Algorithms: Challenges and Opportunities

Oakyoung Han (Sungkyunkwan Univ., ROK)

3-3 Mutually Exclusive Decision-Making Learning of AI based on Contexts

Hyun Jung Lee (Goyang Research Institute, ROK)

3-4 Retrieval-based Question-Answer Generation

Seonmin Koo, Jungwoo Lim, Suhyune Son, Yuna Hur, Heuseok Lim (Korea Univ., ROK)

3-5 Performance Analysis of Mixed Vibration Using RNN Models

Ju-Hyung Lee, Jun-Ki Hong (Kongju National Univ., ROK)

Conference Program

| 09:00-10:30, Mon, June 26, 2023 |

Session 4: Security system/information security (Room 4)

Chair: Dr. Dohoon Kim
(Kyonggi Univ., ROK)

09:00-10:30, Mon, June 26, 2023

4-1	Convergence of Blockchain and Artificial Intelligence: New Opportunities for Secure and Reliable Systems Nakhon Choi, Heeyoul Kim (Kyonggi Univ., ROK)
4-2	Design of Insider Technology Leakage Sign Management System using Blockchain Giwan Hong, Yuna Han, Woojoo Kwon, Hangbae Chang (Chung-Ang Univ., ROK)
4-3	An Approach to Detect SMS Spam Using ChatGPT Sooyon Seo (Sungkyunkwan Univ., ROK), Jaeho Hwang (Yonsei Univ., ROK), Moohong Min (Sungkyunkwan Univ., ROK)
4-4	Nurturing Personal Information Protection Specialists: An Integrated Approach to Curriculum Development Yeji Choi, Juno Lee, Hangbae Chang (Chung-Ang Univ., ROK)
4-5	Cybersecurity Challenges in Blockchain-based Social Media Networks: A Review Muhammad Hasnain (Lahore Leads Univ., Pakistan), Imran Ghani, David Smith (Virginia Military Institute, USA), Akbar Hussain (Lahore Leads Univ., Pakistan), Ali Daud (Abu Dhabi School of Management, United Arab Emirates), Sardar Usman (Grand Asian Univ., Sialkot, Pakistan), Seung Ryul Jeong (Kookmin Univ., ROK)
4-6	Proposing Controls for a Secure M&A of National Core Technology with Smart Contract Yurim Choi, Hangbae Chang (Chung-Ang Univ., ROK)
4-7	A Study on Factors Derivation of Influencing Security R&D Programs for Economic Research Performance Jawon Kim, Hangbae Chang (Chung-Ang Univ., ROK)

Conference Program

| 11:20-12:20, Mon, June 26, 2023 |

Session 5: Intelligent ICT Convergence/Smart Building & Cloud Computing/Digital Twin/Smart Factory (Room 2)

11:20-12:20, Mon, June 26, 2023

Chair: Dr. Namgi Kim
(Kyonggi Univ., ROK)

5-1	Development and Application of Computer Science Textbooks: Focusing on Digital Therapeutics
	Eunsun Choi, Namje Park (Jeju National Univ., ROK)
5-2	Next Activity Prediction and Analysis Based Process Mining
	Jin-Hyeong Lee, Eunbi Cho, Tsagaantsooj Batzaya, So-hyang Bak, Thanh-hai Nguyen, Kwanghoon Pio Kim (Kyonggi Univ., ROK)
5-3	Similarity estimation between distributed inference environments using vision transformer embedding vectors
	Jongbin Park (KETI, ROK)
5-4	A framework to Support the Development of Safety Guidelines in the Manufacturing fields using Ontolog
	Taehoon Kim, Jinmyeong Lee, Jungmin Yun, Jungnyun Lee (Korea Institute of Industrial Technology, ROK)
5-5	Implementation of a Mixed Reality Service with Real-time Interaction of Virtual and Real Worlds
	Jong-gak Choe, Yongjin Kwon (Korea Aerospace Univ., ROK)

Conference Program

| 11:20-12:20, Mon, June 26, 2023 |

Session 6: Technology management/e-commerce/information system/ ERP/BPM/DX (Room 3)

Chair: Dr. Sangmin Lee
(CHA Univ., ROK)

11:20-12:20, Mon, June 26, 2023

6-1 An Analysis on the Impact of Consumer Needs on Consumer Behavior: A Case Study based on Design of a Smart Wearable Product under E-Commerce

Jialei Ye, Xiaoyou He (Nanjing Univ. of the Arts, China),
Ziyang Liu (Kyonggi Univ., ROK)

6-2 Theorizing User's Attitudes Towards AI-Based Systems by Using Philosophical Reasonings

Jongyoon Won, KC Lee (Sungkyunkwan Univ., ROK)

6-3 A Web-based Business Process Discovery System

Thanh-Hai Nguyen, Sohyang Bak, Kyoung-Sook Kim (Kyonggi Univ., ROK),
Dinh-Lam Pham (Vietnam National Univ., Vietnam), Kwanghoon Pio Kim
(Kyonggi Univ., ROK)

Conference Program

| 11:20-12:20, Mon, June 26, 2023 |

Session 7: Graphics/image processing/video deep learning/video control (Room 4)

11:20-12:20, Mon, June 26, 2023

Chair: Dr. Junchul Chun
(Kyonggi Univ., ROK)

7-1	Pine Wilt Disease Detection using Synthetic Data and Object Detection Techniques
	Yonghoon Jung, Wonseop Shin, Sanghyun Seo (Chung-Ang Univ., ROK)
7-2	Automatic 3d Mesh Deformation Using Anime Character Image Information
	Sanghyun Byun, Bumsoo Kim, Sanghyun Seo (Chung-Ang Univ., ROK)
7-3	An Interdisciplinary Study on the Acoustic Perception Characteristics of TV Speakers: OLED Flat Panel Speaker and Dynamic Speaker Acoustic Focus
	Kundong Choi, Sangwoo Hahm (Semyung Univ., ROK), Hyungwoo Park (Dong-Seoul Univ., ROK)
7-4	Anomaly Detection from X-ray Images based on Region-Specific and Global PatchCore
	Hyunbin Kim, Junchul Chun (Kyonggi Univ., ROK)

Conference Program

| 14:10-15:40, Mon, June 26, 2023 |

Session 8: KETI Workshop I (Room 1)

Chair: Dr. Kiwon Kwon

14:10-15:40, Mon, June 26, 2023

(KETI, ROK)

8-1	Comprehensive Statistical Data Analysis for Production Decision in Aquaculture
	Juhyoung Sung, Kyungwon Park, Byoungchul Song, Kiwon Kwon, Sungyoon Cho (Korea Electronics Technology Institute, ROK)
8-2	Data communication dualization system between drone and GCS using RF and LTE
	Wonseok Jung, Jong-Hong Park, Il-Yeop Ahn (Korea Electronics Technology Institute, ROK)
8-3	Integrated Data Control Platform for Building a National Park Drone Sky Road
	Jong-Hong Park, Wonseok Jung, Il-Yeop Ahn (Korea Electronics Technology Institute, ROK)
8-4	Implementation of Centimeter-level Maritime Precise PNT Service Platform
	Junsu Kim, Juhyoung Sung, Wongi Jeon, Kyungwon Park (Korea Electronics Technology Institute, ROK)
8-5	Improvement of Ion Mobility Spectrometry System Performance through Structural Design Change of Drift Tube
	Gi-Seop Im, Won-Young Lee, Sun-Nam Hwang (NewOne S&T Ltd, ROK)
8-6	AI-enabled AGV service management with AIoT platform
	SeungMyeong Jeong, Dae-Geun Heo, ChungJae Choe (Korea Technology Institute, ROK)
8-7	Development of a drone-based low-light environment real-time crack detection system
	Sung-Chan Choi, Jong-Hong Park and Sung-Wook Jung, Il-Yeop Ahn (Korea Electronics Technology Institute, ROK)

Conference Program

| 14:10-15:40, Mon, June 26, 2023 |

Session 9: Cyber Education/Social Media/Metaverse/UX/SNS (Room 2)

14:10-15:40, Mon, June 26, 2023

Chair: Dr. Kyung Han You
(Jeonbuk National, ROK)

9-1	Structural relationships of various factors on the intention to use a mobile anger management training application: focusing on the mediating effect of anger management utility
	Kyunghan You, Minhee Lee (Jeonbuk National Univ., ROK), Jaehee Cho (Sogang Univ., ROK), Sehwan Kim (Dankuk Univ., ROK)
9-2	Investigation of Potential Relationships between Actual Behaviors of Using Smartphone Applications and Trait Anger
	Jaehee Cho (Sogang Univ., ROK), Kyung Han You (Jeonbuk National Univ., ROK), Sewhwan Kim (Dankook Univ., ROK), Jin Xianmei (Sogang Univ., ROK), Dongbin Kim (Dankook Univ., ROK)
9-3	Comparative Study on the Advertising Effectiveness of Real and Virtual Influencers on Healthcare Products : An Eye-Tracking Approach
	Mengqi Du, Kyunghan Ryu (Jeonbuk National Univ., ROK)
9-4	Design of Location-based Traveler-tailored Crime Information Fusion Application
	Youjin Seo, Junho Ahn (Kyonggi Univ., ROK)
9-5	Exploring the Relationship between Metaverse Usage Patterns and Cultural Tastes: A Study of Avatar Formation among Generation Z
	Hyun-Ah Park, Kyung Han You (Jeonbuk National Univ., ROK)

Conference Program

| 14:10-15:40, Mon, June 26, 2023 |

Session 10: Scientific public security/crime prevention/intelligent CCTV application (Room 3)

14:10-15:40, Mon, June 26, 2023

Chair: Dr. Jang Hyun Kim
(Sungkyunkwan Univ., ROK)

10-1	Multi Object Action Classification using Vision Transformer-based YOLO
	Seo-El Lee, So-Hyun Park, Joo-Chang Kim, Sangeun Ahn, Kyungyong Chung, Hyun Yoo (Kyonggi Univ., ROK)
10-2	An Architecture for Content Search in Video Retrieval System
	Dinh-Lam Pham, Sang-eun Ahn, Kyunghee Sun, Kyong-Sook Kim, Kwanghoon Pio Kim (Kyonggi Univ., ROK)
10-3	The Mediating Effect of Fear of Crime on Korean Women's Defensive Behaviors: The Necessity of CCTV
	Sooyun Lee, Hyewon Jeon, Song Kang, Euigab Hwang (Kyonggi Univ., ROK)
10-4	Measurement of Social Disorder based on Distance Between Objects in CCTV Video
	Eunbi Cho, Thanh-Hai Nguyen, Jeong-Hyeon Chang, Tsagaantsooj Batzaya, Kwanghoon Pio Kim (Kyonggi Univ., ROK)
10-5	Continual Learning Algorithms for Enhanced CCTV Effectiveness
	YaeEun Lee, Hyunki Lim, JeongHyeon Chang (Kyonggi Univ., ROK)
10-6	Action Classification using SlowFast and Automated Machine Learning
	Gyu-Il Kim, Seong-Un Cho, Jeong-Hyeon Chang, Kyungyong Chung, Hyun Yoo (Kyonggi Univ., ROK)

Conference Program

| 14:10-15:40, Mon, June 26, 2023 |

Session 11: Big data platform/analysis/application (Room 4)

Chair: Dr. Kyungyong Chung

14:10-15:40, Mon, June 26, 2023

(Kyonggi Univ., ROK)

11-1	Machine Learning vs. Deep Learning on a Tabular Traffic Dataset in Big Data
	Dalyapraz Manatova (Indiana Univ., USA), Jongwook Woo (California State Univ., Los Angeles, USA)
11-2	Occlusion Object Model using PVT based Mask-RCNN
	Ji-Won Baek, Ye Yeon Kang, Geon Park, Kyungyong Chung (Kyonggi Univ., ROK)
11-3	Design and implementation of user participated SNS through voting function
	JiHoon Lee, MoonSung Kim, Jinju Jeong, HeeYeon Cho, Sieun Park, Sangin Kim (Kyonggi Univ., ROK)
11-4	Customer phase identification based on sequential permutation search with voltage time series similarity
	Ji-Hyun Choi (Hanshin Univ., ROK), Haesung Lee, Han-Min Lim, Byungsung Lee (Korea Electric Power Research Institute, ROK), Hyun Ahn (Hanshin Univ., ROK)
11-5	Blockchain-Based Platform for Secure and Patient-Centric Personal Health Record Management
	Sangmin Lee (CHA Univ., ROK)
11-6	Intermedia Network Agenda Setting of Environmental News in Korea and China: Focusing on The Relationship Between Media and Public Agenda
	Yifan Wang, Kyung Han You (Jeonbuk National Univ., ROK)

Conference Program

| 09:00-10:30, Tue, June 27, 2023 |

Session 12: Interactive Presentation Session II (Room 1)

09:00-10:30, Tue, June 27, 2023 Chair: Dr. Namgi Kim
(Kyonggi Univ., ROK)

12-1	Development of comprehensive information service on plant viruses in domestic and international areas
	Minho Son, Ilryong Kweon (PODO inc. ROK)
12-2	Improving Blockchain Security with T-OTP-Based Node Access Control
	Sungbeen Kim, Inwuk Yeo, Dohoon Kim (Kyonggi Univ., ROK)
12-3	Web-based 3D Genome Visualization System for Whole Genome Alignments
	Min Jae Kang, Hwan Gue Cho (Pusan National Univ., ROK)
12-4	The Use of Grammar Transducer in Korean End-to-end Automatic Speech Recognition Models
	Eunsoo Cho, Hosung Park, Hayoung Kim, Ji-Hwan Kim (Sogang Univ., ROK)
12-5	Improving Conformer-CTC based Korean ASR Performance with Data Augmentation and Language Model
	Yoonseo Chung, Hosung Park, Eunsoo Cho, Ji-Hwan Kim (Sogang Univ., ROK)
12-6	Predicting Winding Machine Quality based on Deep Time-Series Data Analysis
	Seung-Joon Lee (Korea Institute of Industrial Technology, ROK)
12-7	A Study on Playbook Automatic Generation Method for Threat Analysis Automation
	Seul-Ki Choi, Taeun Kim, Kijong Son, Saewoom Lee, Taehyeon Kim (Korea Internet & Security Agency, ROK)
12-8	Wearables for Physical Activity Verification
	Ye Won Park, Yubin Yun, Hyoseok Yoon (Hanshin Univ., ROK)

Conference Program

| 09:00-10:30, Tue, June 27, 2023 |

Session 13: KETI Workshop II (Room 2)

Chair: Dr. Seho Park

09:00-10:30, Tue, June 27, 2023

(KETI, ROK)

13-1	Beamforming with Generalized Power Iteration to Maximize Sum Rate in Maritime Relay Communications System
	Tae-Woo Kim, Kyeongjea Lee(Yonsei Univ., ROK), Sung-yoon Cho, Ki-won Kwon(Korea Electronics Technology Institute, ROK), Dong Ku Kim (Yonsei Univ., ROK)
13-2	Design and implementation of predictive system with AI/ML dataset management supported IoT platform
	Dae-Geun Heo, Seung-Myeong Jeong (Korea Electronics Technology Institute, ROK)
13-3	A study on the risk management plan of domestic coastal fishing vessels using big data
	Hyunjeong Lim (Korea Maritime Transportation Safety Authority, ROK), Sooyeon Kwon (Inha Univ., ROK)
13-4	Data system for Fishing Vessel Design
	Dongheum Ryu, Yongbin Lee, Changhyun Park (PIDOTECH Inc., ROK), Sooyeon Kwon (Korea Maritime Transportation Safety Authority, ROK)
13-5	Aids to Navigation (AtoN) Trend Analysis using LDA Topic Modeling
	Narae Yu, Jooyoung Lee (Korea Science Policy Platform, ROK)
13-6	Expanding Communication Coverage in Maritime Communications: Outage Capacity Analysis of two-Hop Relay and Beamforming
	Kyeongjea Lee, Tae-Woo Kim (Yonsei Univ., ROK), Sung-yoon Cho, Ki-won Kwon (Korea Electronics Technology Institute, ROK), Dong Ku Kim (Yonsei Univ., ROK)

Conference Program

| 09:00-10:30, Tue, June 27, 2023 |

Session 14: KDSA-Huple Special Session (Room 3)

"Theme: Introducing Travel Platform Services and VR-based Solutions for Travel with Disability"

09:00-10:30, Tue, June 27, 2023

14-1	JenTrip: A Travel Platform for Solo Travelers
	Honglae Kim, Seyoung Kim (HUPLE Co., Ltd., ROK)
14-2	Developing Travel Information Systems Using Accessibility Index and VR Technology
	Eugene Choi (Kangnam Univ., ROK)

Session 15: KDSA-Advanced Institute of Convergence Technology Special Session (Room 4)

"Theme: Urban Computing & Innovation" (National R&D Project Workshop)

09:00-10:30, Tue, June 27, 2023

15-1	Rethinking the Locus and Focus of Citizen Participation: Role of UX and UI for Urban Planning Application
	Woomin Nam, DaeHwan Kim, Keon Chul Park (Advanced Institute of Convergence Technology, ROK)
15-2	Where and Why? A Novel Approach for Prioritizing Implementation Points for Public CCTVs using Urban Big Data
	Daehwan Kim, Keon Chul Park (Advanced Institute of Convergence Technology, ROK)

Conference Program

| 10:40-12:10, Tue, June 27, 2023 |

Session 16: Interactive Presentation Session III (Room 1)

Chair: Dr. Yoosin Kim

10:40-12:10, Tue, June 27, 2023

(AirDeep Inc. ROK)

16-1	Leverage time-based data to improve recommendation system accuracy
	Sangmin Lee, Jeon Janggun, Lee Yejin, Namgi Kim (Kyonggi Univ., ROK)
16-2	Speech Intelligibility Prediction of Dysarthria Using Deep Convolutional Networks
	Junseok Oh, Hosung Park, Ji-Hwan Kim (Sogang Univ., ROK)
16-3	Analysis of H.266 Versatile Video Coding Streaming and Decoding on Smartphones
	Youngwook Kim, Jong-Moon Chung (Yonsei Univ., ROK)
16-4	Electroencephalography-based Fatigue Assessment for Internet of Medical Things System
	Jung-Hyok Kwon, Sol-Bee Lee, Eui-Jik Kim (Hallym Univ., ROK)
16-5	A Study on Approach for Automating Field Identification in Heterogeneous Security Events Analysis
	Taehyeon Kim, Kijong Son, Saewoom Lee, Seul-Ki Choi, Taeun Kim (Korea Internet & Security Agency, ROK)
16-6	Cross-Device Extended Reality Experiences
	Sihyeon Paik, Jiseong Park, Seoi Na, Hyoseok Yoon (Hanshin Univ., ROK)
16-7	Air Care IoT Platform for Air Quality and Energy Saving
	Yoosin Kim (AirDeep Inc. ROK)
16-8	Factorized 3D CNNs based Human Action Recognition
	Seho Park, Taehyeon Kim (Korea Electronics Technology Institute, ROK)

Conference Program

| 10:40-12:10, Tue, June 27, 2023 |

Session 17: Artificial Intelligence/Time Series Machine Learning (Room 2)

Chair: Dr. In Seop NA

10:40-12:10, Tue, June 27, 2023

(Chonnam National Univ., ROK)

17-1	The Design of IT Project Community Service Platform for Exploring Human Resources Using Recommendation Algorithm
	Yoonjung Jang, Yumin Jo, Hyebin Lee, Jiyeon Jeong, Jongho Paik, Jun Hwang (Seoul Women's Univ., ROK)
17-2	Avatar-Chatbot Making for High School-College Major Experience Program
	Tai Hoon KIM, In Seop NA (Chonnam National Univ., ROK)
17-3	A Deep Learning Method for IQ Fingerprint Map Based Indoor Positioning using Bluetooth 5.1 Technology in Ship Environments
	Yootae Shin, Jooyoung Son, Qianfeng Lin (Korea Maritime and Ocean Univ., ROK)
17-4	An Empirical Study on the Length Granularity in Long-Form Question Answering
	Hyeonseok Moon, Jinsung Kim, Kinam Park, Jeongbae Park, Heuiseok Lim (Korea Univ., ROK)
17-5	A Vision-based Unmanned Store System Fusing User Behavior Patterns
	Yeongjun Choi, Harin Jo, Jisoo Cheon, Yunkyung Hwang, Junho Ahn (Kyonggi Univ., ROK)
17-6	Solving University Course Scheduling Problems Using Adaptive Parallel Tabu Search and Simulated Annealing
	Xiaorui Shao, Chang Soo Kim (Pukyong National Univ., ROK)

Conference Program

| 10:40-12:10, Tue, June 27, 2023 |

Session 18: KDSA-The IMC TEXTOM Workshop Special Session (Room 3)

10:40-12:10, Tue, June 27, 2023

"Theme : Workshop for Efficient NLP Analysis Using TEXT for Korean, English, & Chinese"

Taehwan Rhee, Chaenam Jun (The IMC),

Session 19: KDSA-Human AI Interaction BK21 Education Research Group Special Session (Room 4)

"Theme : Human-AI Interaction and Data Science"

10:40-12:10, Tue, June 27, 2023

19-1

Revolutionizing ESG Evaluation: A Study on the Potential of Earnings Call Transcript Data

Haein Lee, Hae Sun Jung, Heungju Park, Jan Hyun Kim
(Sungkyunkwan Univ., ROK)

19-2

LSTM-based Prediction of Bitcoin Prices Using Technical Indicators, Sentiment Analysis, and Google Trends

Hae Sun Jung, Haein Lee, Jang Hyun Kim (Sungkyunkwan Univ., ROK)

19-3

Public Opinion Analysis of E-sports in China Based on LDA Model: A Case Study of EDG Winning the Championship

ShaoPeng Che, Kai Kuang (Tsinghua Univ., China)

19-4

Ontological metaphor in human-computer interaction: a study of the user's conceptual perception on machines

Youngsang Kim (Sungkyunkwan Univ., ROK)

19-5

The application of affordance theory in understanding social media users' perception of algorithms

Jisu Kim (Singapore Institute of Technology, Singapore)

19-6

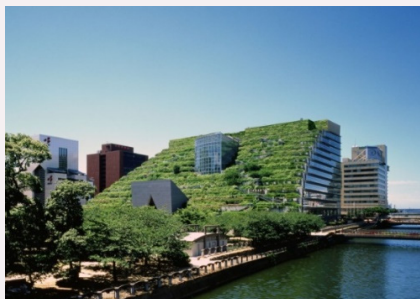
Artificial Intelligence and the Future of Medicine

Ogan Gurel (L'Institut des Sciences et Arts, Canada)

Venue Information

| ACROS Fukuoka level 7, Fukuoka, Japan |

[https:// www.acros.or.jp](https://www.acros.or.jp)



| Conference contact |

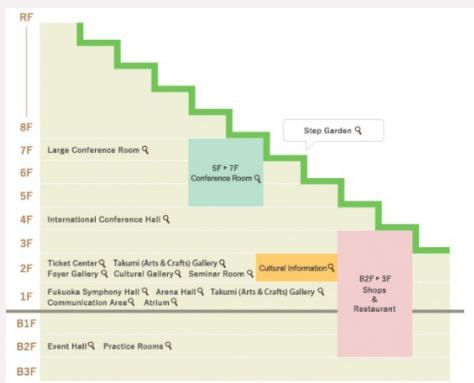
Address : ACROS Fukuoka Foundation 1-1-1 Tenjin, Chuo-ku, Fukuoka City, Japan
810-0001

Venue Information

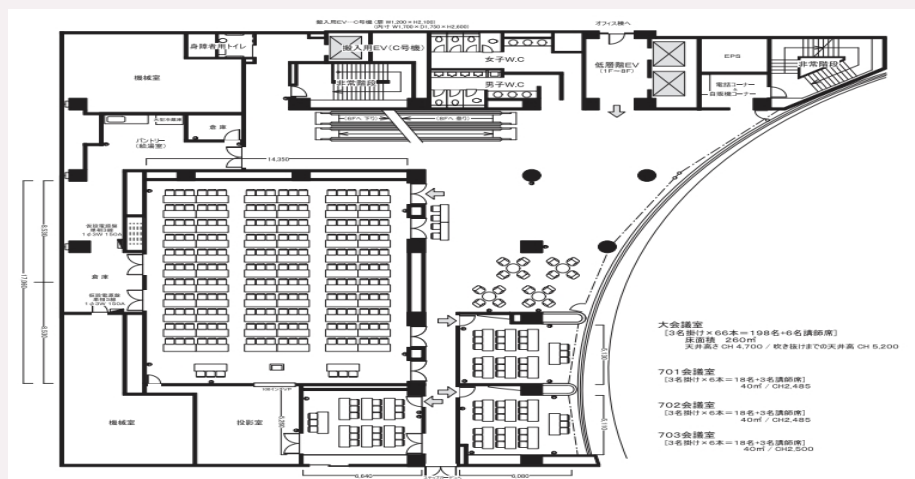
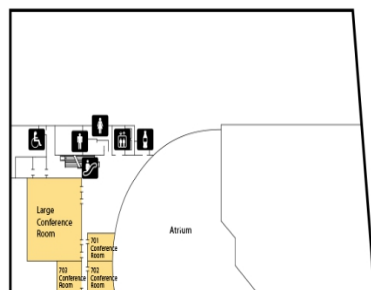
| ACROS Fukuoka level 7, Fukuoka, Japan |

[https:// www.acros.or.jp](https://www.acros.or.jp)

* Building Info. & layout of Level 7



7F



Venue Information

| ACROS Fukuoka level 7, Fukuoka, Japan |

[https:// www.acros.or.jp](https://www.acros.or.jp)



* Access Information transport when visiting ACROS Fukuoka.

- 11 minutes from Fukuoka Airport to Tenjin on the Kuko (Airport) Subway Line.
- 5 minutes from Hakata Station to Tenjin on the Kuko (Airport) Subway Line.
- A 10 minute walk from Nishitetsu Fukuoka Tenjin Station.
- A 5 minute walk from Tenjin Station Higashi (East) Exit on the Subway Kuko (Airport) Line.
- A 7 minute walk from Tenjin Minami Station Exit 5 on the Nanakuma Subway Line.
- Next to the ACROS Fukuoka & Suikyo Tenmangu (shrine)-mae Bus Stop.
- A 3 minute walk from Tenjin 4-chome Bus Stop.
- A 5 minute walk from Tenjin Post Office Bus Stop.

* Direct access to ACROS Fukuoka B2F from Tenjin Station Exit 16 on the Kuko (Airport) Subway Line.

Venue Information (Banquet)

| The Luigans Spa and Resort, Fukuoka, Japan |

[https:// www.luigans.com](https://www.luigans.com)



* Coming by shuttle bus

- In front of Central Park behind ACROS Fukuoka
- Shuttle bus departure time - 4:30 pm



teamLap Forest Fukuoka Information

| teamLap Forest, Fukuoka, Japan |

[https:// www.teamlab.art](https://www.teamlab.art)



* Catching and Collecting Forest APP



teamLap Forest Fukuoka Information

| teamLap Forest, Fukuoka, Japan |

[https:// www.teamlab.art](https://www.teamlab.art)

* BOSS E • ZO FUKUOKA 5F



* Conference Special program Info.

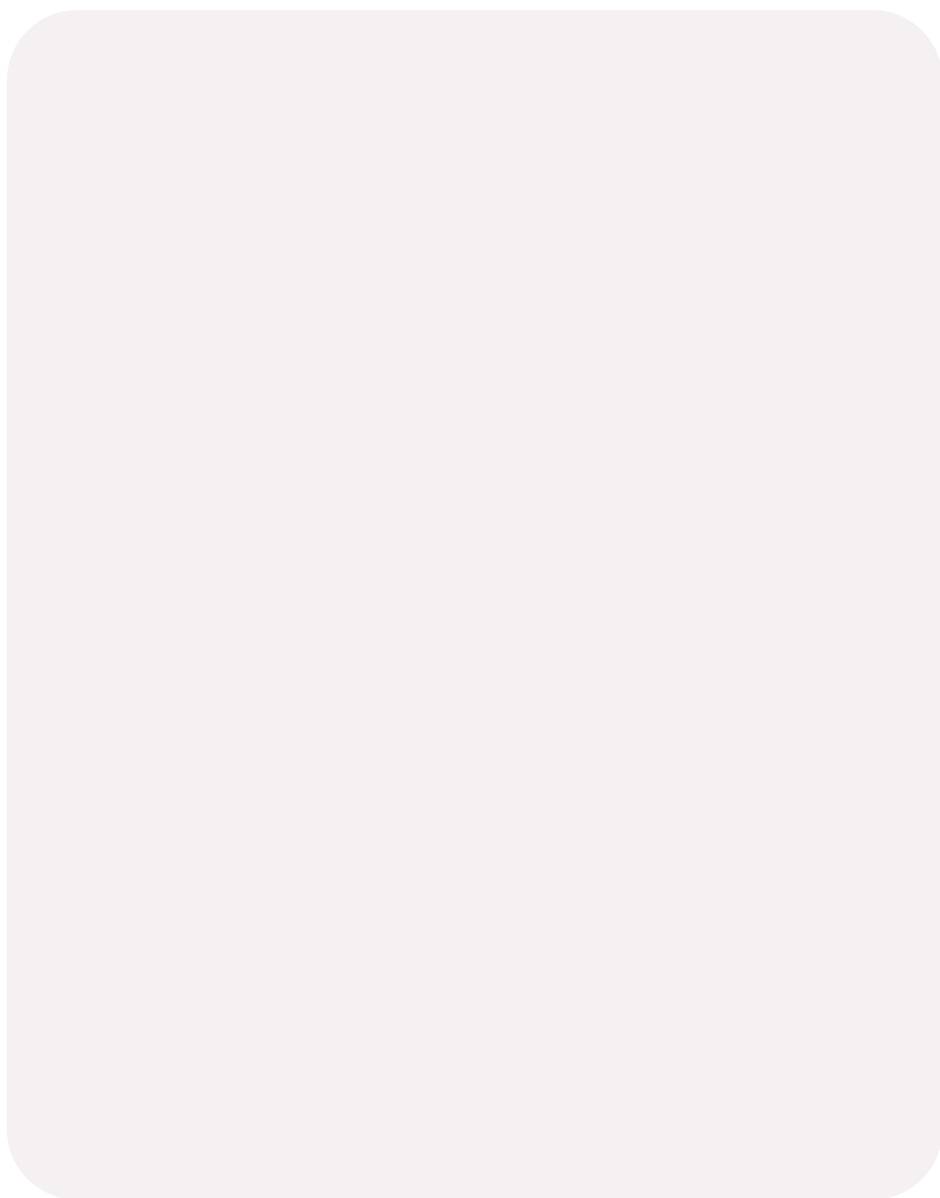
- June 28(Wed), 2023
- Viewing Hours - 11:00 am ~ 13:00pm
- Those who participate(teamlap ticket holders), please come to teamLab on the 5th floor of Boss Ijo Fukuoka by 10:40 am.



* Access Information transport when visiting teamLap Forest Fukuoka.

- A 12-minute walk from Tojinmachi Station on the Fukuoka City Subway
- Get off at Nishitetsu Bus [in front of PayPay Dome] or [Kyushu Medical Center]

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