



ICONI



KOREAN SOCIETY FOR INTERNET INFORMATION

The 13th International Conference on Internet (ICONI 2021)

Dec. 12-14, 2021, Maison Glad Jeju, Korea

<http://www.iconi.org>

Conference Program

| Organized by |

Korean Society for Internet Information (KSII)

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Message from Honorary Chair

We express our warm welcome to all of attendants of the 13th International Conference on Internet (ICONI) that will be held from December 12~14, 2021, in the Masion Glad Jeju, Jeju Island, Korea.

Over the past 13 years, ICONI has increased its academic impact and influence in the area of Information Science, Computer Engineering and Internet Technology by bringing together international researchers from academia, industry, and government to exchange novel ideas, explore enabling technologies, discuss innovative designs, and share field trial experiences and lessons learned.

This year, ICONI 2021 again covers broad range of topics which are related with Internet technologies and applications such as Multimedia /Image Processing /HCI / Intelligent Systems & Database / Data Mining / Big Data / Mobile Object & IoT (Internet of Things) / Security & Privacy in Internet and mobile computing, Internet of Things, wireless communications.

It is firmly believed that each paper to be presented will be a basis for further constructive discussion.

We would like to express our heartfelt gratitude to everyone who makes this conference successful. First of all, we are so grateful to all contributors who submit their valuable papers, review the papers, and chair the sessions. We also thank many sponsors for their enormous support. Our special thanks must go to the Keynote Speakers Dr. Cornelius Hellge from Fraunhofer Heinrich Hertz Institute, Germany and Dr. Jongwook Woo from California State University, LosAngeles, USA

Last, but not least, we deeply appreciate limitless devotion of Organizing Committee members. Without their contribution, this conference would not be realized.

We truly welcome you all to this beautiful Island and wish you pleasant and joyous stay in Jeju Island!



Dr. Jaehyoun Kim
Sungkyunkwan
University, Rep. of
Korea

Dr. Jaehyoun Kim
Honorary Chair of ICONI 2021

Message from Conference Chair

On behalf of the organizing committee of ICONI 2021 as well as on my own behalf, I welcome you to the 13th International Conference on Internet (ICONI). In particular, I sincerely thank you for participating in this international conference to present and discuss valuable research results even in the midst of the pandemic.

As you all know, COVID-19 has brought about many changes and challenges. Academic conferences seem to be no exception, as we are forced to hold conferences in a contactless environment. Despite these difficulties, we have been able to successfully plan for ICONI 2021, prioritizing safety measures. More than 157 papers have been submitted in 21 Internet-related fields, including mobile Internet computing, Internet security, Internet of Things (IoT), wireless and sensor networks and multimedia, image processing and Internet application management. Of these, more than 150 papers will be presented both online and offline. Moving forward, ICONI 2021 will be a leading example for Hybrid conferences.

I owe a great amount of gratitude to the organizing committee members and all contributors for the extraordinary work they have done in organizing this conference. Without their dedicated support, this event would never have been possible.

I wish you all a very pleasant time here in Jeju Island and a productive and successful conference.



Dr. Myung-Mook Han
Gachon Univ.,
Rep. of Korea

Dr. Myung-Mook Han
Conference Chair of ICONI 2021

Message from Program Chairs

It is a pleasure to welcome you to the 13th International Conference on Internet, 2021 (ICONI 2021) to be held in the Grand Ballroom, Masion Glad Jeju, Korea

Over the past 13 years, ICONI has grown to be the major international conference in Internet Technology area. The conference is organized as a set of 21 tracks in the Internet Technology area. ICONI continues the endeavor of high-quality, broad international participation in all areas of Internet Technology.

This year, 157 papers were accepted from 6 countries for consideration to the program committee. As a result, the selection process was highly competitive, and the result is a program of high-quality papers. All paper was assessed in a blind review, and each received at least two or three reviews.

The successful organization of ICONI has required the talents, dedication and time of many volunteers from Malaysia, USA, China, Pakistan, Vietnam and Rep. of Korea. Special gratitude and appreciation go to all of organizing committee members as they are primarily responsible for the conference.

We hope that you will find the conference both enjoyable and valuable, and also enjoy the architectural, cultural and natural beauty of Jeju island.

Jeju Island is one of the most popular tourist destinations in Korea and well situated for welcoming the ICONI 2021 participants from around the world.



Dr. Kim, Soo Kyun
Jeju National Univ., Rep.
of Korea



Dr. Imran Ghani
Virginia Military Institute,
USA

Dr. Kim, Soo Kyun Dr. Imran Ghani
Program Chairs of ICONI 2021

Keynote Speakers

Keynote Speaker Dr. Cornelius Hellge

**Head of Multimedia Communications Group,
Fraunhofer Heinrich Hertz Institute, Germany**

Title: Interactive Volumetric Video Streaming over 5G



Abstract of the talk

Rendering high-quality volumetric video for mixed reality services on head-mounted displays is challenging due to the limited battery capacity of mobile devices. This becomes even more challenging when the volumetric elements can interact with the user and have to be animated to do so. Remote rendering moves the computational load to an edge cloud, but requires an extremely low latency streaming system to be transparent to the user. This talk will provide an overview of the components of a remote rendering streaming system, with a focus on the recently completed MPEG gLTF extension for animatable volumetric video, user prediction for latency reduction below 40ms latency and ECN-based congestion control over 5G.



Keynote Speaker Dr. Jongwook Woo

**Department of Information Systems
California State University, Los Angeles, USA (CalStateLA)**

Title: Scalable ML DL Computing with Multiple GPUs

Organizing Committee

| Honorary Chair |

Jaehyoun Kim, Sungkyunkwan University, Rep. of Korea

| Conference Chair |

Myung-Mook Han, Gachon University, Rep. of Korea

| Program Chairs |

Imran Ghani, Virginia Military Institute, USA

Soo Kyun Kim, Jeju National University, Rep. of Korea

| Steering Chairs |

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Dayang Norhayati Abang Jawawi, Universiti Teknologi Malaysia, Malaysia

Seung Ryul Jeong, Kookmin University, Rep. of Korea

Mingoo Kang, Hanshin University, Rep. of Korea

| Publication Chairs |

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Ziyang Liu, Kyonggi University, Rep. of Korea

Jongho Paik, Seoul Women's University, Rep. of Korea

| Workshop Chairs |

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Kwanghoon Pio Kim, Kyonggi University, Rep. of Korea

Kiwon Kwon, Korea Electronics Technology Institute, Rep. of Korea

Xiaoli Li, Beijing Univ. of Technology, China

Radziah Mohamad, Universiti Teknologi Malaysia

In Seop Na, Chosun University, Rep. of Korea

Organizing Committee

| Financial Chairs |

Min Hong, Soonchunhyang University, Rep. of Korea

Xibin Jia, Beijing university of technology, China **Sangmin Lee**, CHA Univ., Korea

| International Program Committee |

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Massila Binti Kamalrudin, Universiti Teknikal Malaysia Melaka, Malaysia

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Seokhoon Kim, Soonchunhyang University, Rep. of Korea

Jaewan Lee, Kunsan National University, Rep. of Korea **Ali Safaa Sadiq**, Univ. of Wolverhampton, UK

Zulkefli bin Mansor, Universiti Kebangsaan Malaysia, Malaysia

Roy Morien, Naresuan Univ., Thailand **Namgi Kim**, Kyonggi University, Rep. of Korea

Seok-Pil Lee, Sangmyung University, Rep. of Korea **Hyounkyu Song**, Sejong University, Rep. of Korea

Mazni Binti Omar, Universiti Utara Malaysia, Malaysia **Deepanjal Shrestha**, Pokhara Univ., Nepal

SeokWoo Song, Weber State University, USA **Wangcheol Song**, Jeju National University, Rep. of Korea

Isma Farah Siddiqui, Mehran Univ. of Engineering & Technology, Pakistan

Nawab Muhammad Faseeh Qureshi, Sungkyunkwan University, Rep. of Korea

Soon Ja Yeom, Univ. of Tasmania, Australia **Moonseong Kim**, Seoul Theological Univ., ROK

Conference Program

Sun / Dec. 12, 2021	Room 1
16:00-18:00	VIP Reception & Greetings

Mon / Dec. 13, 2021	Room 1 (Crystal)	Room 2 (Sapphire)	Room 3 (Amethyst)
08:30-	Registration (2F)		
09:00-10:30	Session 1	Session 2	Session 3
10:40-11:20	Opening Ceremony & Keynote Speech / Crystal Hall A		
11:30-12:30	Session 4	Session 5	Session 6
12:30-13:30	Lunch (11:30-13:30) / Crystal Hall B		
14:00-15:30	Session 7	Session 8	Session 9
15:40-17:10	Session 10	Session 11	Session 12
18:00-19:30	Award Ceremony & Keynote Speech & Banquet Crystal Hall A & B		

Conference Program

Tue / Dec. 14, 2021	Room 1 (Crystal)	Room 2 (Sapphire)	Room 3 (Amethyst)
08:30-	Registration (2F)		
09:00-10:30	Session 13	Session 14	Session 15
10:40-12:10	Session 16	Session 17	Session 18
12:20-13:30	Lunch (12:00-14:00) / 1F Samdajeong		
14:00-15:30	Session 19	Session 20	XR Flagship Project
15:40-17:10	Session 21		XR Flagship Project

* Presentation Time

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

Conference Program

Sun, Dec. 12, 2021

16:00-18:00

VIP Reception & Greetings

Mon, Dec. 13, 2021

09:00-10:30

Session 1: Smart Phone Applications and Service /
Mobile Internet Computing & IoT (Internet of Things)
/ Machine to Machine

Session 2: Multimedia / Image Processing / HCI /
Intelligent Systems I

Session 3: KETI Workshop I

10:40-11:20

Opening Ceremony & Keynote Speech

11:30-12:30

Session 4: AICT Workshop

Session 5: Workshop & SNS & Communications /
Digital media use & effects

Session 6: UI / UX Guideline and Discussion for XR
Contents

12:30-13:30

Lunch (11:30-13:30)

Conference Program

Mon, Dec. 13, 2021

14:00-15:30	Session 7: Smart Phone Applications and Service / Mobile Internet Computing
	Session 8: Software Convergence Technology for Well-Life I
	Session 9: KETI Workshop II
15:40-17:10	Session 10: Multimedia / Image Processing / HCI / Intelligent Systems & Database / Data Mining / Big Data / Mobile Object Database
	Session 11: IoT (Internet of Things) / Machine to Machine
	Session 12: Interactive Presentation Session I
18:00-19:30	Keynote Speech & Award Ceremony & Banquet

Tue, Dec. 14, 2021

09:00-10:30	Session 13: Multimedia / Image Processing / HCI / Intelligent Systems III
	Session 14: Database / Data Mining / Big Data / Mobile Object Database I
	Session 15: Interactive Presentation Session II

Conference Program

Tue, Dec. 14, 2021

10:40-12:10	Session 16: Software Engineering / Architecture / Cloud Computing & Management of Internet Application / E-Business / E-Commerce
	Session 17: Software Convergence Technology for Well-Life II
	Session 18: Interactive Presentation Session III
12:30-13:30	Lunch (12:00-14:00)
14:00-15:30	Session 19: Database / Data Mining / Big Data / Mobile Object Database II
	Session 20: Database / Data Mining / Big Data / Mobile Object Database & Software Engineering / Architecture / Cloud Computing
15:40-17:10	Session 21: Smart Learning / e-Learning / Learning Contents Management Sys. & Future Internet & Industrial Convergence Service
	XR Flagship Project Workshop

*** Presentation Time**

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

Conference Program

| 09:00-10:30, Mon, Dec.13, 2021 |

Session 1: Smart Phone Applications and Service / Mobile Internet Computing & IoT (Internet of Things) / Machine to Machine (Room 1)

09:00-10:30, Mon, Dec. 13, 2021 Chair: Dr. Jang Hyun Kim
(Sungkyunkwan Univ., ROK)

- | | |
|-----|--|
| 1-1 | Design and Implementation of 16-point Radix-2 and Radix-4 Number Theoretic Transform in FPGA
Boon-Chiao Chang (Universiti Tunku Abdul Rahman, Malaysia), Wai-Kong Lee (Gachon Univ., ROK), Bok Min Goi (Universiti Tunku Abdul Rahman, Malaysia), Seong Oun Hwang (Gachon Univ., ROK) |
| 1-2 | Malware analysis in sandbox environment using machine learning
Bilawal Shaikh, Talha Rehman, Isma Farah Siddiqui (Mehran Univ. of Engineering & Technology, Pakistan) |
| 1-3 | Location Detection Scheme based on User Face Recognition using CCTV camera in a Blockchain
Hyeok Kang, Keun-Ho Lee (BaekSeok Univ., ROK) |
| 1-4 | Controlled Data Broadcast Storm in Vehicular Named Data Networking
Inayat Ali (Korea Institute of Science and Technology Information, ROK), Huhnkuk Lim (Hoseo Univ., ROK) |
| 1-5 | A study on autoencoder based discrete wavelet transform for anomaly intrusion detection
Gun-Yoon Shin, Dong-Wook Kim, Sung-Sam Hong, Myung-Mook Han (Gachon Univ., ROK) |
| 1-6 | A Review of Factors Responsible for the Security Issues and Challenges in Internet of Things Environment
Muhammad Liman Gambo (Universiti Teknologi Malaysia, Malaysia) |

Conference Program

| 09:00-10:30, Mon, Dec.13, 2021 |

Session 2: Multimedia / Image Processing / HCI / Intelligent Systems I (Room 2)

09:00-10:30, Mon, Dec. 13, 2021

Chair: Dr. Inseop Na
(Chosun Univ., ROK)

2-1	A System Construction for AI based a Job Shop Scheduling in Manufacturing Systems
	Yeonjee Choi, Hyun Suk Hwang (Pukyong National Univ., ROK), Ilkyeun Ra (Univ. of Colorado at Denver, USA)
2-2	A Study on the Performance Optimization of Steel Surface Defect Detector: Deep Learning Base
	Hyungwoo Park (Dong-Seoul Univ., ROK), Sangmin Suh (Gangneung-Wonju National Univ., ROK)
2-3	A Discrete and Dimensional Emotion Recognition by AffectNet
	Kyuwoong Hwang, Minsol Park, Inseop Na (Chosun Univ., ROK)
2-4	3D-EDM: Early Detection Model for 3D-Printer Faults
	Harim Jeong, Joo Hun Yoo (Sungkyunkwan Univ., ROK)
2-5	An Intelligent SOH Prediction Of Lithium-Ion Battery By PSO-LSSVM
	Yelyn Ahn, Nagyeong Kang, Jun Hwang (Seoul Women's Univ., ROK)
2-6	A Deep-Learning-Driven Video-Objects Contextualization System
	Young-In Park, Sangeun Ahn (Kyonggi Univ., ROK), Dinh-Lam Pham (Vietnam National Univ., Vietnam), Kyung-Hee Sun, Kyoung-Sook Kim, Kwanghoon Pio Kim (Kyonggi Univ., ROK)

Conference Program

| 09:00-10:30, Mon, Dec.13, 2021 |

Session 3: KETI Workshop I (Room 3)

09:00-10:30, Mon, Dec. 13, 2021

Chair: Dr. Sungchan Choi
(KETI, ROK)

3-1

Rule-based oneM2M and NGSI-LD Interworking Solution

Seongyun Kim, NakMyoung Sung, Jiho Lee, Seokjun Lee (KETI, ROK)

3-2

Machine Learning dataset creation common service for real-time data platform

SeungMyeong Jeong, Yoonhoo Lee, Dong Ha Park (KETI, ROK)

3-3

Application of Drone System in Civil and Environmental Fields

Sungwook Jung, Jong-hong Park, Sung-chan Choi, Wonseok Jung, Il-yeop Ahn (KETI, ROK)

3-4

A 3D Object Detection Method using Contextual Fitting of Deep Learning Model

Chungjae Choe, Kumar Sunil (KETI, ROK)

3-5

Implementation of Developer Tool Framework for Developing Unmanned Vehicle-Mounted Mission Software

Jong-Hong Park, Sung-Chan Choi, Eunwha Park, Yungi Park, Il-Yeop Ahn (KETI, ROK)

3-6

A Study on Coverage Performance for UAV-Empowered Relay Communications

Sung-Chan Choi, Jong-Hong Park, Sungwook Jung, Il-yeop Ahn, Hassen Redwan Hussen (KETI, ROK)

Continue next page (session 3)

Conference Program

| 09:00-10:30, Mon, Dec.13, 2021 |

Session 3: KETI Workshop I (Room 3)

09:00-10:30, Mon, Dec. 13, 2021

Chair: Dr. Sungchan Choi
(KETI, ROK)

3-7

Mission Software Development and Multi-Mission Operation Architecture for Public Mission Drones

Wonseok Jung, Jong-Hong Park, Sungwook Jung, Sung-Chan Choi,
Il-Yeop Ahn (KETI, ROK)

3-8

Computation Offloading in IoT Infrastructure using oneM2M

Seokjun Lee, Nak-Myoung Sung, Jieun Lee (KETI, ROK)

3-9

A study of Deep Learning for Vehicle Recognition using IoT Platform in Drone Environment

Hyeonseo Son, Sungchan Choi, Hassen Redwan Hussen (KETI, ROK)

Conference Program

| 11:30-12:30, Mon, Dec.13, 2021 |

Session 4: AICT Workshop (Room 1)

11:30-12:30, Mon, Dec. 13, 2021 Chair: Dr. Keon Chul Park
(Advanced Institute of Convergence Tech, ROK)

4-1

Road to Smart City Business: from Ideas to the Feasible

Jaehoon Yang, Jungmin Park, Tae-Rin Lee (Advanced Institute of Convergence Technology, ROK)

4-2

Prediction of Safety Stock for Bike-sharing Service with a Machine Learning Approach

Keon Chul Park (Advanced Institute of Convergence Technology, ROK),
Yoosin Kim (RT Data Lab, ROK), Seong-min Kim, Tae-Rin Lee (Advanced Institute of Convergence Technology, ROK)

4-3

Development of smart city business models: From dreams to reality

Tae-Rin Lee (Advanced Institute of Convergence Technology / Seoul National Univ., ROK)

4-4

An Introduction on Data-driven Innovation District

Daehwan Kim, Kwanchul Kim, Woonjung Lee, Tae-rin Lee (Advanced Institute of Convergence Technology, ROK)

Conference Program

| 11:30-12:30, Mon, Dec.13, 2021 |

Session 5: Workshop & SNS & Communications / Digital media use & effects (Room 2)

11:30-12:30, Mon, Dec. 13, 2021

Chair: Dr. Ha Sung Hwang
(Dongguk Univ., ROK)

5-1

The Drums of War in the Korean Peninsula: YouTube network analysis on the spread of another Korean War

Seunghye Sohn, Guiohk Lee (Sejong Univ., ROK)

5-2

A Study of Classification of Cyberbullying Damage Types and Influential Routine Activities on Cyberbullying

Myeonggi Hong, Jeong-Hyeon Chang (Kyonggi Univ., ROK), YooJung Cha (Korean National Police Univ., ROK), Euigab Hwang (Kyonggi Univ., ROK)

5-3

Identifying recidivism risk factors study based on machine learning:
Using decision tree analysis and random-forest algorithm

Yong Chan Jeong, Jeong-Hyeon Chang, Chun Gun Park, Soo Jung Lee (Kyonggi Univ., ROK)

5-4

Utilization of 112 Report Data and Improvements for Crime Prevention Predictability Model

EunBi Cho, JooChang Kim, NaYoung Ko, JeongHyeon Chang (Kyonggi Univ., ROK)

Conference Program

| 11:30-12:30, Mon, Dec.13, 2021 |

Session 6: UI / UX Guideline and Discussion for XR Contents (Room 3)

11:30-12:30, Mon, Dec. 13, 2021

Chair: Dr. Mingoo Kang
(Hanshin Univ., ROK)

6-1

A feature engineering approach to generate explainable forecast models from univariate time series

Haesung Lee (KEPCO Research Institute, ROK), Minjae Park (Daelim Univ., College, ROK), Yonggeol Lee, Jeongwook Seo, Mingoo Kang, Hyun Ahn (Hanshin Univ., ROK)

6-2

Small Hazardous Object Detection Method based on You Only Look Once Algorithm

Eunchan Kim (Seoul National Univ., ROK), Jinyoung Lee, Hyunjik Jo (Yonsei Univ., ROK), Kwangtek Na (Inha Univ., ROK), Eunsook Moon (Yonsei Univ., ROK), Gahgene Gweon, Byungjoon Yoo (Seoul National Univ., ROK), Yeunwoong Kyung (Hanshin Univ., ROK)

6-3

E-Scooter Violation Detection with a YOLOv5 Model on an AIoT Edge Device

Min-jun Kim (Hanshin Univ., ROK), Chang kyo Lee (Gumi Electronics & Information Technology Research Institute, ROK), Min-Goo Kang, Yonggeol Lee, Hyun Ahn, Jeongwook Seo (Hanshin Univ., ROK)

6-4

A Study on the Digital Custody Model based on a Home_gateway

Soojun Lee (Sejong Univ., ROK), Jeongwook Seo, Mingoo Kang, Hyeopgoo Yeo (Hanshin Univ., ROK), Sangyep Nam (Kookje Univ., ROK)

Conference Program

| 14:00-15:30, Mon, Dec.13, 2021 |

Session 7: Smart Phone Applications and Service / Mobile Internet Computing (Room 1)

14:00-15:30, Mon, Dec. 13, 2021

Chair: Dr. KangYoon Lee
(Gachon Univ., ROK)

7-1	From Negative to Positive: An Internet Design Framework for Stimulating User's Pleasure Experience
	Chunmao Wu, Xuefei Li (Donghua Univ., China)
7-2	Comparative Study of Android Native and Flutter App Development
	Hina Hussain, Kamran Khan (Mehran Univ. of Engineering & Technology, Pakistan), Faiza Farooqui (Sindh Univ., Pakistan), Qasim Ali Arain, Isma Farah Siddiqui (Mehran Univ. of Engineering & Technology, Pakistan)
7-3	A Study on Automatic Authentication Supported Medical Information Platform Based on Bigdata Processing
	Gyu-Sung Ham, KyungMo Kang, Su-Chong Joo (Wonkwang Univ., ROK)
7-4	Comparison of Different Machine Learning Methods for Occupancy Prediction
	Muhammad Saidu Aliero, Vhera Kaey Vijayaraj(Monash Univ., Malaysia), Imran Ghani (Virginia Military Institute, USA), Muhammad Fermi Pasha (Monash Univ., Malaysia), Ali Safaa Sadiq (Univ. of Wolverhampton, UK)
7-5	Defense Against CCTV Camera based shoulder surfing attack for Smartphones
	Lelisa Adeba Jilcha, Yu-Rae Song, Jin Kwak (Ajou Univ., ROK)
7-6	A Survey on Android Security Threats Regarding Malwares & Permissions
	Pir Hamid Ali Qureshi, Isma Farah Siddiqui (Mehran University of Engineering & Technology, Pakistan)

Conference Program

| 14:00-15:30, Mon, Dec.13, 2021 |

Session 8: Software Convergence Technology for Well-Life I (Room2)

14:00-15:30, Mon, Dec. 13, 2021

Chair: Dr. Min Hong
(Soonchunhyang Univ., ROK)

8-1	Spatial Mapping Mesh Simplification Algorithm for GPGPU Cloth Simulation in AR
	Lyudmila Khan (Soonchunhyang Univ., ROK), Yoo-Joo Choi (Seoul Media Institute Technology, ROK), Jun Ma, Min Hong (Soonchunhyang Univ., ROK)
8-2	Method for Real-Time Simulation of Deformable Objects Using GPU-based Parallel Computing
	Hongly Va, Min-Hyung Choi, Do-Kyeong Lee, Min Hong (Soonchunhyang Univ., ROK)
8-3	RNN/DQN-based Gateway Selection Predictions and Resource Allocations for Reliable Massive Machine-Type Communications Assurance
	Sa Math, Prohim Tam, Inseok Song, Seungwoo Kang, Seyha Ros, Geonho Cha, Seokhoon Kim (Soonchunhyang Univ., ROK)
8-4	Mobile-based Prototype Personalized Recommendation System using Flutter Framework and Machine Learning
	Sony Peng, Yixuan Yang, Makara Mao, Doo-Soon Park (Soonchunhyang Univ., ROK)
8-5	Heart segmentation with Mask R-CNN using CT image
	Xibin Jia (Beijing Univ. of Technology, China), Sungjin Lee, Beanbonyka Rim, Min Hong (Soonchunhyang Univ., ROK)
8-6	Intelligent Data Imputation Methods for Handling Missing Data
	Kimseth Seu, Yeongmin Kim, Sangwook Han, HwaMin Lee (Soonchunhyang Univ., ROK)

Conference Program

| 14:00-15:30, Mon, Dec.13, 2021 |

Session 9: KETI Workshop II (Room3)

14:00-15:30, Mon, Dec. 13, 2021

Chair: Dr. Kiwon Kwon
(KETI, ROK)

9-1

Efficient Communication Resource Management of Aids to Navigation for Reliable Operation in VDES

Juhyoung Sung, Sungyoon Cho, Won-Gi Jeon, Kyungwon Park,
Kiwon Kwon (KETI, ROK)

9-2

Image Stitching Comparison with Multiple Images Indoors

Jaewon Lee, Dalwon Jang, Hanyi Shin, JongSeol Lee (KETI, ROK)

9-3

Angular margin loss in facial emotion recognition

Joohyung Lee, Kyung-Taek Lee, Seho Park (KETI, ROK)

9-4

A study on Stitching Algorithm based on Image Pre-processing using the Area of Interest in the Vehicle Intersection Environment

Hyunhak Song, WonGi Jeon, KyungWon Park (KETI, ROK)

9-5

The study of student safety situation detection system in indoor sports environment

Youngmin Ji, Dongchun Kim, Daehwan Kim, Dongwoo Kwon (KETI, ROK)

9-6

Occupancy Detection Model based on Illuminance, Noise Level, and CO2

Jai-Won Chung, Dalwon Jang, Jae-Won Lee, Mi-Ji Kim, Seo-Yul Kim,
Jong-Seol Lee (KETI, ROK)

Continue next page (session 9)

Conference Program

| 14:00-15:30, Mon, Dec.13, 2021 |

Session 9: KETI Workshop II (Room3)

14:00-15:30, Mon, Dec. 13, 2021

Chair: Dr. Kiwon Kwon
(KETI, ROK)

9-7

Model Structure of Aquaculture Digital Twin System For Land-based Recirculating Aquaculture System

Da-Eun Jung, SungYoon Cho, YangSeob Kim, JeongHwan Park, Junhyuk Seo, KiWon Kwon (KETI, ROK)

9-8

De-identification of Subjects in Video Sequences

Yong-Suk Park, Song-Yeon Lee, Hyun-Sik Kim (KETI, ROK)

9-9

Identification of Principal Actors in Video Sequences

Yong-Suk Park, Hyoungsung Kim, Hyun-Sik Kim (KETI, ROK)

Conference Program

| 15:40-17:10, Mon, Dec.13, 2021 |

Session 10: Multimedia / Image Processing / HCI / Intelligent Systems & Database / Data Mining / Big Data / Mobile Object Database (Room 1)

15:40-17:10, Mon, Dec. 13, 2021

Chair: Dr. Kyungyong Chung
(Kyonggi Univ., ROK)

10-1	A Diagnosis of COVID-19 infected person using cough sound data
	Myoungjin Son, Seok-Pil Lee (Sangmyung Univ., ROK)
10-2	Design and Implementation of an Energy-Efficient Chatbot Model Focused on Customer Experience
	JuHui Lee, KangYoon Lee (Gachon Univ., ROK)
10-3	Design of Abnormal Signal Analysis Techniques for Broadcasting Communication Equipment
	Yumin Jo, Yejin Jang, Jiin Shin, Yunjeong Jang (Seoul Women's Univ., ROK), Heesang Um, Younghoon Kim (ATBis, ROK), Jongho Paik (Seoul Women's Univ., ROK)
10-4	Deep learning-based forecasting of the charge capacity of lithium-ion batteries using impedance spectroscopy data
	Josue Obregon, Yu-Ri Han, Jimin Kim, Chang Won Ho, Devanadane Muraliraman, Jae Woo Park, Chang Woo Lee, Jae-Yoon Jung (Kyung Hee Univ., ROK)
10-5	Prediction of Anomaly Traffic Flow base on Distribution Distance using Semi-Supervised Learning
	Hye-Jeong Kwon, Byeong-Uk Jeon, Min-Jeong Kim, Ji-Won Baek, Kyungyong Chung (Kyonggi Univ., ROK)
10-6	Interpretable Spam Prediction using Keyword Extraction base on TF-IDF
	Ji-Won Baek, Yeyeon Kang, Young-Min An, Dong-Joon Lee, Kyungyong Chung (Kyonggi Univ., ROK)

Conference Program

| 15:40-17:10, Mon, Dec.13, 2021 |

Session 11: IoT (Internet of Things) / Machine to Machine (Room2)

15:40-17:10, Mon, Dec. 13, 2021

Chair: Dr. Kwanghoon Pio Kim
(Kyonggi Univ., ROK)

11-1	Analyzing of Blended Threat using Knowledge Graph in Massive IoT
	Minkyung Lee, Deuk-Hun Kim, Jin Kwak (Ajou Univ., ROK)
11-2	Anomaly Detection Method using Machine Learning Based on Feature-Specific Correlation in Industrial Control System
	Junwon Kim (Gachon Univ., ROK), JiHo Shin (Korean National Police Univ., ROK), Jung Taek Seo (Gachon Univ., ROK)
11-3	Adaptive HVAC System Based on Fuzzy Controller Approach
	Muhammad Aliero, Vhera Kaey Vijayaraj (Monash Univ.,Malaysia), Imran Ghani (Virginia Military Institute, USA), Muhammad Fermi Pasha (Monash Univ.,Malaysia), Ali Safaa Sadiq (Univ. of Wolverhampton, UK), Seung Ryul Jeong (Kookmin Univ., ROK)
11-4	Federated Learning Model for Learning Security Threat of Smart Factory
	In-Su Jung, Eui-Jin Kim, Jin Kwak (Ajou Univ., ROK)
11-5	A Data-Intensive Smart Factory Operationalization Process Monitoring System
	Dinh-Lam Pham (Vietnam National Univ., Vietnam), So-Hyang Park, Thanh-Hai Nguyen (Kyonggi Univ., ROK), Dongkeun Oh (IC&IT Inc., ROK), Kyoung-Sook Kim, In-Kyoo Chun (IC&IT Inc., ROK), Kwanghoon Pio Kim (Kyonggi Univ., ROK)
11-6	Energy-Efficient Frame-Based-Tracking Algorithm Design for Drone with CAFFENET
	Jisu Kang, Jong Ho Bang (Seoul Women's Univ., ROK)
11v-7	Swarm Flight of Drones and Reinforcement Learning-Based Multi-Agent Communication Optimization Technology
	Serie Ma, Jong Ho Bang (Seoul Women's Univ., ROK)

Conference Program

| 15:40-17:10, Mon, Dec.13, 2021 |

Session 12: Interactive Presentation Session I (Room3)

15:40-17:10, Mon, Dec. 13, 2021

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

12-1	Column Name Standardization System based on Standard and Synonym Data
	Sumi Shin (KISTI, ROK)
12-2	Indoor Air Quality Monitoring System Using IoT Sensor
	Kunwook Koh, Yooshin Kim (RTDataLab, ROK)
12-3	Point Cloud Capture System based on SLAM and Colored Point Cloud Registration
	YoungBeom Kim, Byung-Ha Park (KETI, ROK)
12-4	Head Position-based 3D Pose Estimation from Sparse IMUs
	Meejin Kim, Byung-Ha Park (KETI, ROK)
12-5	Digital Twin based Fire Evacuation Route Prediction using Multiple Trainee Event Sequencing 2D-map CNN Classification
	Minsoo Joo, Jusik Yun, Jaewook Jung, Jong-Moon Chung (Yonsei Univ., ROK)
12-6	Recent Trend in Image Forgery Detection
	Nam Pham (AIPro Inc, ROK), Chun-Su Park (Sungkyunkwan Univ., ROK)
12-7	IoT Device Security Threat Analysis and Countermeasures
	JaeHyuck Choi, Junwon Kim (Gachon Univ., ROK), Jiho Shin (Korean National Police Univ., ROK), Jung Taek Seo (Gachon Univ., ROK)
12-8	Mobile Access Certification Technique Using Beacon and Biometric Authentication
	Yeongnam Park, Hyeok Kang, Keunho Lee (BaekSeok Univ., ROK)

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Conference Program

| 15:40-17:10, Mon, Dec.13, 2021 |

Session 12: Interactive Presentation Session I (Room3)

15:40-17:10, Mon, Dec. 13, 2021

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

12-9	Biometric Information Storage Technique Using Steganography and Image Rearrangement
	Yeongseo Park, Hyeok Kang, Keunho Lee (BaekSeok Univ., ROK)
12-10	EEG Measurement and Brain Network Analysis Method for Spatial Disorientation Training
	Yousub Jo, Kwang-Mo Jung, YoungBeom Kim (KETI, ROK)
12-11	Design and Implement a Scheduler for Distributed CPU-GPU Clusters Based on Resource Metrics
	Kicheol Park, Chanhyp Kim, Jae-Hoon An, Younghwan Kim (KETI, ROK)
12-12	Design and Implementation of BMC-based Reliable and Fault-tolerant Edge Server in Rugged Environment
	Kicheol Park, Hyun Jun Kang, Jae-Hoon An, Younghwan Kim (KETI, ROK)
12-13	CSD-based Intelligent Storage Engine Design for High-speed Processing of Large-scale Data
	Kicheol Park, Insung Jun, Jae-Hoon An, Younghwan Kim (KETI, ROK)
12-14	UNIQ-SALT: Urban Mesoscopic Traffic Simulation for City Road Network
	Hyewon Song, Moonyoung Chung (ETRI, ROK)
12-15	Hashtag recommendation system for senior content creator
	Dongwoo Lee, Yoosin Kim (RTdata Lab, ROK)
12-16	A study on weight estimation of Korean cattle using RGB-D image
	Wanhyun Cho, MyungHwan Na (Chonnam National Univ., ROK), Sangkyoon Kim (Mokpo National Univ., ROK), Inseop Na (Chosun Univ., ROK)

Conference Program

| 09:00-10:30, Tue, Dec.14, 2021 |

Session 13: Multimedia / Image Processing / HCI / Intelligent Systems II (Room 1)

09:00-10:30, Tue, Dec. 14, 2021

Chair: Dr. Seok-Pil Lee
(Sangmyung Univ., ROK)

13-1	Contact Detection using Deep Learning-based Multi-objects Classification
	Min-Jeong Kim, Hyun Yoo, Kyungyong Chung (Kyonggi Univ., ROK)
13-2	A Web-based System Architecture of CCTV-Video Object Detection Approach using Superb Deep Learning Detectors
	Dinh Lam Pham, Joo-Chang Kim, Sang-eun Ahn, Eun-bi Jo, Jeong-Hyeon Chang, Hyun Yoo, Kyunghee Sun, Kyong-Sook Kim, Kwanghoon Pio Kim (Kyonggi Univ., ROK)
13-3	Intelligent Object Localization System Generating Indoor Digital Maps for Self-Driving Robots
	Dahyeon Kim, Dohyeon Lee (Korea National Univ. of Transportation, ROK), Kwangjik Yang (National Security Research Institute, ROK), Junho Ahn (Korea National Univ. of Transportation, ROK)
13-4	A Selection of optimal features for detection of COVID-19 using cough data
	Ye-Jin Lee, Seok-Pil Lee (Sangmyung Univ., ROK)
13-5	Implementation of High Resolution Trained MRI Datasets using Light Field Database Tool
	Soobia Saeed, Afnizanfaizal Abdullah (Universiti Teknologi Malaysia, Malaysia), Mehmood Naqvi (Mohawk College, Canada)
13-6	An Intelligent End-To-End Speech Synthesis system
	Sung-Woo Byun, Seok-Pil Lee (Sangmyung Univ., ROK)

Conference Program

| 09:00-10:30, Tue, Dec.14, 2021 |

Session 14: Database / Data Mining / Big Data / Mobile Object Database I
(Room 2)

09:00-10:30, Tue, Dec. 14, 2021

Chair: Dr. Soo Kyun Kim
(Jeju National Univ., ROK)

14-1	Research on the Application of Big Data Analysis in the Design of Neo-Chinese Style Furniture
	Jia Lei Ye (Hainan Normal Univ., China), Zi Yang Liu, Li Qian Gao, Yang Zhou (Kyunggi Univ., ROK)
14-2	Early Disease Detection Using Ensemble Learning- A Systematic Literature Review
	Engr. Maryam Ghauri, Isma Farah Siddiqui (Mehran Univ. of Engineering and Technology, Pakistan)
14-3	A Fast and Effective Job-Shop Scheduler Based on Multi-view Convolutional Neural Network
	Xiaorui Shao, Chang Soo Kim (Pukyong National Univ., ROK)
14-4	Deep-Learning-Based Sensor Fusion for Machine Fault Detection Using Infrared Thermal Images and Multiple Sensor Data
	Hoonseok Park, Myoungjin Oh, Jae-Yoon Jung (Kyung Hee Univ., ROK)
14-5	Job Dispatching Method for Production Scheduling Using Machine-Learned Ranking
	Young-Suk Han, Jae-Yoon Jung (Kyung Hee Univ., ROK)
14-6	Development of predictive models using various lifestyle data
	Man Young Park (Korea Institute of Oriental Medicine, ROK)

Conference Program

| 09:00-10:30, Tue, Dec.14, 2021 |

Session 15: Interactive Presentation Session II (Room3)

09:00-10:30, Tue, Dec. 14, 2021

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

15-1	Development of antibiotics risk assessment system in agricultural environment
	Minho Son, Ilryong Kweon (PODO inc, ROK)
15-2	A study on how to determine the priority of cyber targets based on physical target priorities
	Jung-sik Lee, Haengrok Oh (Agency for Defense Development, ROK), Myung-Mook Han (Gachon Univ., ROK)
15-3	The Role of Supervisor Harassment on Job Commitment: The Mediating Role of Job Engagement
	Le Wang (Honam Univ., ROK), Sangwoo Hahm (Semyung Univ., ROK), Kundong Choi (Kwang Dong Pharmaceutical Co., Ltd, ROK), Xiu Jin (Honam Univ., ROK)
15-4	UCI Sensor Data Analysis based on Feature Attribution
	Il-Sik Chang, Gooman Park (Seoul National Univ. of Science and Technology, ROK)
15-5	Artificial Intelligence Personal Training System and Calorie Consumption Analysis
	Yujeong Oh, Yeji Kim, Ilhak Ban, Se-Jin Kim (Chosun Univ., ROK)
15-6	Analysis of Research Trends on the Legal Characteristics of Virtual Assets
	Daun Jung (Gachon Univ., ROK), JiHo Shin (Korean National Police Univ., ROK), Jung Taek Seo (Gachon Univ., ROK)
15-7	Proposal of ZeroNet's Peer Target-Specific File Ownership Verification Method for Digital Forensics Investigation
	HyunPyo Choi (Gachon Univ., ROK), JiHo Shin (Korean National Police Univ., ROK), Jung Taek Seo (Gachon Univ., ROK)

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Conference Program

| 09:00-10:30, Tue, Dec.14, 2021 |

Session 15: Interactive Presentation Session II (Room3)

09:00-10:30, Tue, Dec. 14, 2021

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

15-8	A study on Training Cyber Attack Scenario at Industrial Control System
	InSung Song, DaUn Jung (Gachon Univ., ROK), JiHo Shin (Korean National Police Univ., ROK), Jung Taek Seo (Gachon Univ., ROK)
15-9	How E-trust and E-satisfaction Mediate the Effects of Perceptions and E-loyalty in Apparel E-customisation
	Pei Li, Hong Jian Qu (Shanghai Univ. of Engineering Science, China), Zi Yang Liu (Kyonggi Univ., ROK)
15-10	Challenges of Online Shopping in Developing Countries: the Case of Cameroon
	Sangwoo Hahm (Semyung Univ., ROK), Eta Ngole (Ministry of Public Health, Cameroon), Xiu Jin (Honam Univ., ROK), Mbong Kome Ngole (Semyung Univ., ROK)
15-11	Design of Application that Outputs Augmented Objects Using Image Tracking
	Jee Sic Hur, Jin Woong Kim, KyungSoo Hong, Min Woo Ha, Soo Kyun Kim (Jeju National Univ., ROK)
15-12	Store Traffic Monitoring System for Retail Management
	Meejin Kim, Byung-Ha Park (KETI, ROK)
15-13	A Gesture-based Operating Guide System by Augmenting Hand Gestures
	Sukwon Lee, Sungoh Jung, Byung-Ha Park (KETI, ROK)
15-14	Energy Reduced Offloading using Deep Reinforcement Learning for Real-time Fire Fighting XR Simulations in MEC
	Dongjun Jung, Wonsuk Yoo, Minsu Choi, Yunyeong Goh, Jong-Moon Chung (Yonsei Univ., ROK)
15-15	Adaptive Fire Escape Path Prediction in Multi-Use Facilities based on Digital Twin using Machine Learning Framework
	Sangdo Kim, Wonsik Yang, Seungwoo Seo, Jae-Dong Kim, Jong-Moon Chung (Yonsei Univ., ROK)

Conference Program

| 10:40-12:10, Tue, Dec.14, 2021 |

Session 16: Software Engineering /Architecture / Cloud Computing & Management of Internet Application /E-Business/E-Commerce (Room 1)

10:40-12:10, Tue, Dec. 14, 2021

Chair: Dr. Yoosin Kim
(RTdata Lab, ROK)

16-1	Proposed Trust Evaluation Model Of The Cloud Computing Using Fuzzy Logic – An Holistic Literature Review
	Said Altalaih, Norafida Ithnin (University Technology Malaysia, Malaysia)
16-2	The Effect of Relationship Conflicts and Job Focused Conflict on Well-Being in COVID-19 Era: The Moderating Role of Stress
	Jiaxing Du, Xiu Jin (Honam Univ., ROK), Marvin Salganov (Bluline, USA), Sangwoo Hahm (Semyung Univ., ROK)
16-3	Knowledge Sharing Categories and Influencing Factors for Agile Virtual Teams: Interviews Based Study
	Zohaib Ahmed (National Univ. of Modern Languages, Pakistan), Zulkefli Mansor, Kamsuriah Ahmad (Universiti Kebangsaan Malaysia, Malaysia)
16-4	Establishment of Organizational Culture Types of Virtual Teams and Organizations: The Effect of New Organizational Culture Types on Team and Organizational Performance
	Sangwoo Hahm (Semyung Univ., ROK), Fusheng Zheng (Lanzhou Univ. of Technology, China), Xiu Jin (Honam Univ., ROK)
16-5	Comparative Analysis of Trending Agile Model Tools for Software Development Life Cycle
	Mehwish Shaikh, Aaiza Khan, Isma Farah Siddiqui, Zakaullah Qureshi (Mehran Univ. of Engineering & Technology, Pakistan)
16-6	The Negative Role of Workplace Bullying in the 4th Industrial Revolution Era
	Xiu Jin (Honam Univ., ROK), Sangwoo Hahm (Semyung Univ., ROK), Sangmin Lee (CHA Univ., ROK), Jiaxing Du (Honam Univ., ROK)

Conference Program

| 10:40-12:10, Tue, Dec.14, 2021 |

Session 17: Software Convergence Technology for Well-Life II (Room 2)

10:40-12:10, Tue, Dec. 14, 2021

Chair: Dr. Min Hong
(Soonchunhyang Univ., ROK)

17-1

Optimization of Position-based dynamics Using barycentric coordinate

Min-Hyung Choi (Univ. of Colorado at Denver, USA), Jun Ma, Min Hong
(Soonchunhyang Univ., ROK)

17-2

Hybrid Mobile Cloud Computing for Healthcare Applications

Ahyoung Lee (Kennesaw State Univ., USA), Rupak Kumar Das (Univ. of
Minnesota Duluth, USA), Jun Ma, Min Hong (Soonchunhyang Univ., ROK)

17-3

Generally Applicable Hybrid Deep Learning Model with Transfer Learning
Method for Photoplethysmography-Based Blood Pressure Estimation: A Pilot
Study

Seungmin Jeong, Young Kim, Jong Gab Ho, Seungswan Jang, Seung Keun
Choi, Jaeyoung Lee, Se Dong Min (Soonchunhyang Univ., ROK)

17-4

RSU-based Urgent Data Traffic Transmission in Vehicular Networks

Dae-Young Kim, SoYeon Lee, Ji-Hoon Park (Soonchunhyang Univ., ROK)

17-5

Adaptive Computation Control for Latency-Efficient Federated Learning in
Multi-Service Edge IoT Communications

Prohim Tam, Sa Math, Chaebeen Nam, Chanthol Eang, Junho Son,
Seokhoon Kim (Soonchunhyang Univ., ROK)

Conference Program

| 10:40-12:10, Tue, Dec.14, 2021 |

Session 18: Interactive Presentation Session III (Room 3)

10:40-12:10, Tue, Dec. 14, 2021

Chair: Dr. SungYoon Cho
(KETI, ROK)

18-1	Implementation of MQTT Broker using DPDK for Low Latency Packet Transmission in IoT Platforms
	Jungwook Wee, Changho Han (KETI, ROK)
18-2	A study on CNN based Ornamental Fish Recognition System to Assist in Quarantine of Imported Ornamental Fish
	Hyunhak Song, Sungyoon Cho, Yangseob Kim, Kiwon Kwon (KETI, ROK)
18-3	Wake Detection Scheme for Protection of Floating Aids to Navigation
	Hyochan Lee, Sungyoon Cho, Yangseob Kim (KETI, ROK), Taeho Im (Hoseo Univ., ROK), Kiwon Kwon (KETI, ROK)
18-4	Design of DASH based Hybrid Transmission System for Immersive Content
	Seulki Song, Minju Cho, Jungwook Wee (KETI, ROK)
18-5	State-of-Health Estimation Model based Li-Ion Battery Dataset with Short Cycles Using Deep Learning Algorithms and Attention Technique
	Ju Hyeong Kim, Changwoo Kim, Hyosub Choi (KETI, ROK)
18-6	A Study on the Collision Prevention System for Construction Site Workers based on Virtual Environment using UWB Data
	Chulgoo Kim, Jaekyu Lee, Inpyo Cho, Sangyub Lee (KETI, ROK)

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Conference Program

| 10:40-12:10, Tue, Dec.14, 2021 |

Session 18: Interactive Presentation Session III (Room 3)

10:40-12:10, Tue, Dec. 14, 2021

Chair: Dr. SungYoon Cho
(KETI, ROK)

18-7	Fault Detection in Industrial Motor using Machine Learning Algorithms
	HunSeok Lee, Hyunsik Kim (KETI, ROK)
18-8	Acoustic event detection with low complexity for room environment
	Dalwon Jang, Jaewon Lee, Miji Kim, Jai-Won Chung, JongSeol Lee (KETI, ROK)
18-9	Detected Face Tracking Using Facial Landmarks
	Yong-Suk Park (KETI, ROK)
18-10	Implementation of LCOS Microdisplay Driver for 3D Video System
	Youn-Sung Lee, Kyung-Take Lee, Yong-Hyun Lee, Nam-Chol Song (KETI, ROK)
18-11	3D Reconstruction by ToF-Stereo Fusion
	Sukwoo Jung, Youn-Sung Lee, KyungTaek Lee (KETI, ROK)
18-12	A Study on the Evaluation Method of Charging Data for Predicting the Life of a Lithium Battery
	TaeUk Chang (Quantum Solution, Inc, ROK), Anna Choi (Seoul Woman Univ., ROK)

Conference Program

| 14:00-15:30, Tue, Dec.14, 2021 |

Session 19: Database / Data Mining / Big Data / Mobile Object Database II
(Room 1)

14:00-15:30, Tue, Dec. 14, 2021

Chair: Dr. Seokhoon Kim
(Soonchunhyang Univ., ROK)

19-1	Scalable Predictive Analysis for Airbnb Listing Rating
	Savita Yadav, Samyuktha Muralidharan (California State Univ., Los Angeles, USA), Sanghoon Lee (Yonsei Univ., ROK), Jongwook Woo (California State Univ., Los Angeles, USA)
19-2	A Prediction Model for Ship Propulsion Degradation Using Deep Learning
	Donghyun Park, Jae-Yoon Jung (Kyung Hee Univ., ROK)
19-3	Exploring Topics in Information Systems (IS) Education: A Comparison between Journal of IS Education and Other IS Journals using Text Analysis
	Seokwoo Song (Weber State Univ., USA)
19-4	A Datasets Model for Knowledge Discovery
	Yun-Young Hwang, Jiseong Son, Jin-Hee Yuk, Sumi Shin (KISTI, ROK)
19-5	Travel Time Prediction Method for Inter-Line Transfers in Semiconductor Fab Using Machine Learning
	Seohyun Choi, Young Ha Joo, Hoonseok Park, Jae-Yoon Jung (Kyung Hee Univ., ROK), Younkook Kang, Ri Choe (Samsung Electronics, ROK)

Conference Program

| 14:00-15:30, Tue, Dec.14, 2021 |

Session 20: Database / Data Mining / Big Data / Mobile Object Database & Software Engineering / Architecture / Cloud Computing (Room 2)

14:00-15:30, Tue, Dec. 14, 2021

Chair: Dr. Kwanghoon Pio Kim
(Kyonggi Univ., ROK)

20-1	Predictability Model of the Sea Ice Extent from Machine Learning
	Jeonghun Kang (Daejeon Univ., ROK), Young Eun Jeon (Yeungnam Univ., ROK), Jeong-Hyeon Chang (Kyonggi Univ., ROK), Jung-In Seo (Andong National Univ., ROK)
20-2	Forecasting of 24 hours ahead solar power generation using SARIMAX, XGBoost, LSTM, and Isolation Forest
	Sang Kyu Kang, Jang Hyun Kim (Sungkyunkwan Univ., ROK)
20-3	Correlation of Covid-19 Vaccination and Confirmed Cases Using Scalable Big Data
	Jae Hoon Lee, Timothy Rochester, Riker Santivong, Wesam Farjo, Justin Licea, Jongwook Woo (California State Univ., Los Angeles, USA)
20-4	Knowledge Sharing For Agile Virtual Teams: A Systematic Literature Review Protocol
	Zohaib Ahmed (National Univ. of Modern Languages, Pakistan), Zulkefli Mansor, Kamsuriah Ahmad (Universiti Kebangsaan Malaysia, Malaysia)
20-5	A Hybrid Technique for Test Case Selection and Change Detection in Regression Testing
	Israr Ghani, Wan M.N. Wan-Kadir, Adila Firdaus Arbain (Universiti Technology Malaysia, Malaysia), Imran Ghani (Virginia Military Institute, USA)

Conference Program

| 15:40-17:10, Tue, Dec.14, 2021 |

Session 21: Smart Learning / e-Learning / Learning Contents
Management Sys. & Future Internet & Industrial Convergence Service
(Room 1)

15:40-17:10, Tue, Dec. 14, 2021

Chair: Dr. Chang Soo Kim
(Pukyong National Univ., ROK)

21-1	Advanced information data-interactive learning system effect for creative design project
	Inseop LEE, Sangwoo Park, Junseok Lee, Sanghun Sul (Sungkyunkwan Univ., ROK)
21-2	An Ensemble Learning-based Real-time Monitoring System for Classification of Elephant Flows on KOREN
	Waleed Akbar, Javier Jose Diaz Rivera, Khan Talha Ahmed, Afaq Muhammad, Wang-Cheol Song (Jeju National Univ., ROK)
21-3	Predicting the Students' First-year Academic Performance using Machine Learning Algorithms
	Sherif Abdelhamid (Virginia Military Institute, USA) , Mona Aly (Independent Researcher, USA), Yasmine Essam, Ahmed Ayman Egyptian Russian University, Cairo, Egypt)
21-4	A Study on the applicable Vulnerability Assessment Framework for Safety System in Nuclear Facility
	Sayeon Kim, Sumin Yim, Ieckchae Euom (Chonnam National Univ., ROK)
21-5	Forthcoming Appraisal of COVID-2019 to 2021
	Soobia Saeed, Hammad Khawar (Baqai Institute of Informatics and Technology, Pakistan)
21-6	Job distribution using the JSSP solution model in the textile industry
	Gil-Tak Kong, Xiaorui Shao, Chang soo Kim (Pukyong National Univ., ROK)

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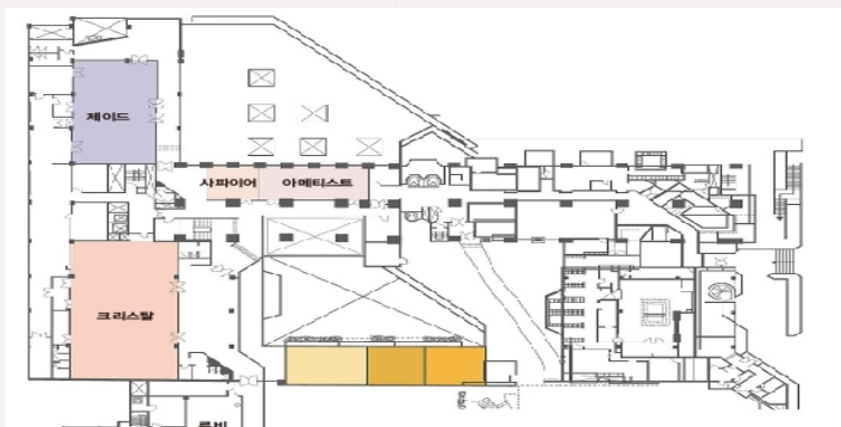
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