

## Welcome Message from General Chair

Dear scholars and experts,

On behalf of the Conference Committee, I welcome you to ICFICE2023, the 15th International Conference on Future Information and Communication Engineering, to be held from January 10 to 13, 2023 at the Horizon Hotel in Nha Trang, Vietnam.

Even though the middle of 2022 has passed, the entire human society is still fighting the coronavirus. At one time, the zealous pursuit of eradicating the virus with the goal of ending the corona virus turned out to be human arrogance. Now, it is a daunting situation to find a solution that can coexist while dealing with this virus within a stable management range. It is still too early to know exactly where the COVID-19 pandemic will start and how far it will spread. However, it is clear that this pandemic. Therefore, it is necessary to take a new approach across all fields of order, system, culture, and lifestyle created by humans. Therefore, our society must also advance successfully in the IT field.

As the General Chair of ICFICE2023, notable papers were published here, and I am pleased to share the research results with surrounding researchers as several papers have been published in related SCI and SCOPUS journals such as MDPI, JICT, and JICCE. We would like to thank the Program Committee and Organizing Committee members, keynote speakers, judges and authors who contributed to the success of this conference. I hope this conference is meaningful and happy for you.

Dr. & Prof. Seong-Yoon Shin  
General Chair of ICFICE2023

## Conference Committee

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 Jeongkyu Hong (Yeungnam University, Korea)  
 Changsu Kim (PaiChai University, Korea)  
 Jimin Cheon (Kumoh National Institute of Technology, Korea)  
 Jaemin Kwak (Mokpo National Maritime University, Korea)  
 Gwanghyun Jo (Kunsan National University, Korea)  
 Wooseok Ryu (Catholic University of Pusan, Korea)

## Conference Schedule Overview

### ● Registration

- Time : 13:00~14:30 (11th ~ 13th January, 2023)
- Place : Orchid Hall(2F), Nha Trang Horizon Hotel, Vietnam

### ● Opening Ceremony / Keynote Speech

- Time : 16:00~17:30 (10th January, 2023)
- Place : Pensee Hall(2F), Nha Trang Horizon Hotel, Vietnam
- Keynote Speech

Title : Smart Transportation Projects For Smart Cities

Speaker : Dr. Hyun Ae Lee (Hyundai Motor Group)

### ● Luncheon / Business Meeting

- Time : 12:00~13:00 (11th ~ 13th January, 2023)
- Place : Restaurant(1F), Nha Trang Horizon Hotel, Vietnam

### ● Technical Session

- Time : 13:00~16:20 (11th ~ 13th January, 2023)
- Place : Lotus Hall(2F), Pensee Hall(2F), VIP Room(1F), Nha Trang Horizon Hotel, Vietnam

<b>ICFICE 2023</b> THE 15th INTERNATIONAL CONFERENCE ON FUTURE INFORMATION & COMMUNICATION ENGINEERING	
11th January, 2023, Nha Trang Horizon Hotel, Vietnam	
Technical Session : <b>ORAL</b>	<b>Session CA-A, UN-A</b> Prof. Gwanghyun Jo (Kunsan National University)
14:00 ~ 15:00 (VIP Room, 1F)	<b>CA-1</b>
	<b>CA-2</b>
	<b>CA-3</b>
	<b>UN-1</b>
Technical Session : <b>ORAL</b>	<b>Session IB-A, NS-A, MD-A</b> Prof.
14:00 ~ 15:00 (Lotus Hall, 2F)	<b>IB-1</b>
	<b>NS-1</b>
	<b>MD-1</b>

\* CA : Communication System and Applications  
 UN : Ubiquitous Sensor Network  
 IB : IoT and Big Data  
 NS : Networking and Security  
 MD : Multimedia and Digital Convergence

<b>ICFICE 2023</b> THE 15th INTERNATIONAL CONFERENCE ON FUTURE INFORMATION & COMMUNICATION ENGINEERING	
11th January, 2023, Nha Trang Horizon Hotel, Vietnam	
Technical Session : <b>ORAL</b>	<b>Session AI-A</b> Prof. Choong Ho Lee (Hanbat National University)
15:20 ~ 16:20 (Lotus Hall, 2F)	<b>AI-1</b>
	<b>AI-2</b>
	<b>AI-3</b>
	<b>AI-4</b>
	<b>AI-5</b>
Technical Session : <b>ORAL</b>	<b>Session AI-B</b> Prof. Won-Kwang Park (Kookmin University)
15:20 ~ 16:20 (VIP Room, 1F)	<b>AI-6</b>
	<b>AI-7</b>
	<b>AI-8</b>
	<b>AI-9</b>
	<b>AI-10</b>

\* AI : AI and Intelligent Information System

<b>ICFICE 2023</b> THE 15th INTERNATIONAL CONFERENCE ON FUTURE INFORMATION & COMMUNICATION ENGINEERING	
12th January, 2023, Nha Trang Horizon Hotel, Vietnam	
Technical Session : <b>ORAL</b>	<b>Session IT-A</b> Prof.
14:00 ~ 15:00 (Lotus Hall, 2F)	<b>IT-1</b>
	<b>IT-2</b>
	<b>IT-3</b>
	<b>IT-4</b>
	<b>IT-5</b>
Technical Session : <b>ORAL</b>	<b>Session BI-A, DA-A, SC-A</b> Prof. Jongwook Jang (Dong-eui University)
14:00 ~ 15:00 (VIP Room, 1F)	<b>BI-1</b>
	<b>BI-2</b>
	<b>DA-1</b>
	<b>SC-1</b>

\* IT : IT Convergence Technology  
 BI : Biomedical Imaging and Engineering  
 DA: Database and Internet Application  
 SC : Semiconductor and Communication Services

<b>ICFICE 2023</b> THE 15th INTERNATIONAL CONFERENCE ON FUTURE INFORMATION & COMMUNICATION ENGINEERING	
12th January, 2023, Nha Trang Horizon Hotel, Vietnam	
Technical Session : <b>ORAL</b>	<b>Session MD-B</b> Prof. Kwang Seong Shin (Wonkwang University)
15:20 ~ 16:20 (Lotus Hall, 2F)	<b>MD-2</b>
	<b>MD-3</b>
	<b>MD-4</b>
	<b>MD-5</b>
Technical Session : <b>ORAL</b>	<b>Session AI-C</b> Prof.
15:20 ~ 16:20 (VIP Room, 1F)	<b>AI-11</b>
	<b>AI-12</b>
	<b>AI-13</b>
	<b>AI-14</b>

\* MD : Multimedia and Digital Convergence  
 AI : AI and Intelligent Information System

<b>ICFICE 2023</b> THE 15th INTERNATIONAL CONFERENCE ON FUTURE INFORMATION & COMMUNICATION ENGINEERING			
13th January, 2023, Nha Trang Horizon Hotel, Vietnam			
Technical Session : <b>POSTER</b>	<b>Session MD-C, NS-B</b> Prof. Daehwan Kim (University of Ulsan)		
14:00 ~ 14:30 (Pensee Hall, 2F)	<b>MD-6</b>	<b>MD-12</b>	<b>NS-4</b>
	<b>MD-7</b>	<b>MD-13</b>	<b>NS-5</b>
	<b>MD-8</b>	<b>MD-14</b>	<b>NS-6</b>
	<b>MD-9</b>	<b>MD-15</b>	<b>NS-7</b>
	<b>MD-10</b>	<b>NS-2</b>	
	<b>MD-11</b>	<b>NS-3</b>	
Technical Session : <b>POSTER</b>	<b>Session AI-D, SC-B, UN-B</b> Prof. Jin-Woo Jung (Dongguk University)		
14:40 ~ 15:10 (Pensee Hall, 2F)	<b>AI-15</b>	<b>AI-21</b>	<b>AI-27</b>
	<b>AI-16</b>	<b>AI-22</b>	<b>SC-2</b>
	<b>AI-17</b>	<b>AI-23</b>	<b>SC-3</b>
	<b>AI-18</b>	<b>AI-24</b>	<b>UN-2</b>
	<b>AI-19</b>	<b>AI-25</b>	<b>UN-3</b>
	<b>AI-20</b>	<b>AI-26</b>	

\* MD : Multimedia and Digital Convergence  
 NS : Networking and Security  
 AI : AI and Intelligent Information System  
 SC : Semiconductor and Communication Service  
 UN : Ubiquitous Sensor Network

<b>ICFICE 2023</b> THE 15th INTERNATIONAL CONFERENCE ON FUTURE INFORMATION & COMMUNICATION ENGINEERING			
13th January, 2023, Nha Trang Horizon Hotel, Vietnam			
Technical Session : <b>POSTER</b>	<b>Session CA-B, IT-B, IB-B</b> Prof. Semin Kim (Jeonju National University of Education)		
15:20 ~ 15:50 (Pensee Hall, 2F)	<b>CA-4</b>	<b>CA-10</b>	<b>IT-11</b>
	<b>CA-5</b>	<b>IT-6</b>	<b>IT-12</b>
	<b>CA-6</b>	<b>IT-7</b>	<b>IT-13</b>
	<b>CA-7</b>	<b>IT-8</b>	<b>IB-2</b>
	<b>CA-8</b>	<b>IT-9</b>	
	<b>CA-9</b>	<b>IT-10</b>	

\* CA: Communication System and Applications  
 IT : IT Convergence Technology  
 IB : IoT and Big Data

**11th January, 2023**

**Session CA-A : Communication System and Applications**

**Session UN-A : Ubiquitous Sensor Network**

**Session Chair :** Prof. Gwanghyun Jo  
(Kunsan National University)

**14:00~15:00**

**CA-1 : A Schedule of Context-awareness Distributed Clustering for DTN**

Dong-keun Oh, Youngjun Oh, and Kangwhan Lee  
(Korea University of Technology and Education)

**CA-2 : Digital Dashboard Design for Condition Status Monitoring of Online Rotating Equipment**

Andrian Julianto<sup>1</sup>, Aria Bisma Wahyutama<sup>2</sup>, and Mintae Hwang<sup>2</sup>  
(<sup>1</sup>Pertamina Ltd. Company, <sup>2</sup>Changwon National University)

**CA-3 : Model of Farming Consultation Integration Toward Smart Agricultural Community in Traditional Village**

Asep Somantri (Pasundan University)

**UN-1 : Dual-Rotor Electromagnetic-Based Energy Harvester for Powering a Wireless Sensor System Using Multi-layer PCB Coils on Marine Rotating Shaft**

Van Ai Hoang and Young Chul Lee (Mokpo National University)

**Session IB-A : IoT and Big Data**

**Session NS-A : Networking and Security**

**Session MD-A : Multimedia and Digital Convergence**

**Session Chair :**

**14:00~15:00**

**IB-1 : E-commerce Service with IoT-based Capacity Information Collection of the Recyclables**

JinSe Park, Aria Bisma Wahyutama, Mintae Hwang, and Hoon Lee  
(Changwon National University)

**NS-1 : Prime Number based Energy Efficient Scheduling Methods for Wireless Sensor Networks**

Jong-Hoon Youn<sup>1</sup>, Woosik Lee<sup>2</sup>, and Teuk-Seob Song<sup>3</sup>  
(<sup>1</sup>University of Nebraska at Omaha, <sup>2</sup>Social Security Information Service, <sup>3</sup>Mokwon University)

**MD-1 : Flow and Engagement in Animation through Interactive Storytelling**

Elisa Adriana and HongSik Pak (Dongseo University)

**Session AI-A : AI and Intelligent Information System**

**Session Chair :** Prof. Choong Ho Lee  
(Hanbat National University)

**15:20~16:20**

**AI-1 : Blockchain for storing and protecting healthcare data using Hyperledger Fabric**

Muhammad Usama Abid, Md Ariful Islam Mozumder, Muhammad Mohsan Sheerazand, and Hee-Cheol Kim (Inje University)

**AI-2 : Design of Sundanese Script Detection Based on Deep Learning using Roboflow and YOLO**

Handoko Supeno, Dwi Yanto Subastian, Mellia Liyanthy, and Muhammad Tirta Mulia (Pasundan University)

**AI-3 : Machine learning-based approach for the classification of cancer disease patients using clinical data.**

Ali Maisam, Abdullah, Yaseen Muhammad, and Hee-Cheol Kim  
(Inje University)

**AI-4 : Machine Learning-based Hand Movement Classification of Stroke Patients using EEG Signals**

Yassen Muhammad, Abdullah, Ali Maisam, Shah Mahsoom Ali, and Hee-Cheol Kim (Inje University)

**AI-5 : Utilizing Context for Enhancing Performance of On-device AI Inference**

Seokjun Lee, Chungjae Choe, and Nakmyung Sung  
(Korea Electronic Technology Institute)

**Session AI-B : AI and Intelligent Information System**

**Session Chair :** Prof. Won-Kwang Park  
(Kookmin University)

**15:20~16:20**

**AI-6 : miRNA-Gene association prediction method by Autoencoder and LSTM Deep Learning Model**

Seung-Won Yoon, In-Woo Hwang, Jae-In Kim, and Kyu-Chul Lee  
(Chung-nam National University)

**AI-7 : A Study on Transportation in the Metaverse: The Mediating Effect of Identification, Social Attraction, and Self-Awareness**  
Soyoung Kim, Youn-Jung Park, In-jae Lim, and Heejo Keum  
(Sungkyunkwan University)

**AI-8 : Forecasting of dissolved oxygen for Anyang Stream based on ANN-XGB**  
Gwanghyun Jo<sup>1</sup>, Keun Young Lee<sup>2</sup>, and Seong-Yoon Shin<sup>1</sup>  
(<sup>1</sup>Kunsan National University, <sup>2</sup>Sejong University)

**AI-9 : A Study for reducing the false alarms of software weakness analyzer using the BERT model**  
Huong Nguyen Dinh, SeungHyun Woo, Hyeon-Jin Jeon, Ji-Seok Yang, and Yunsik Son (Dongguk University)

**AI-10 : YOLO-based Detection of Partially Covered Recyclables for User Behavior-based Separate Collection**  
Aria Bisma Wahyutama and Mintae Hwang  
(Changwon National University)

**12th January, 2023**

#### **Session IT-A : IT Convergence Technology**

**Session Chair :** Prof.

**14:00~15:00**

**IT-1 : Research on the Use of Artificial Intelligence for the Analysis of Unstructured Data**  
Young-Bong Ko and Dae-woo Park (Hoseo Graduate School of Venture)

**IT-2 : Republic of Korea's Development Plan for The Era of 5th Industrial Revolution Technology**  
Dae-woo Park (Hoseo Graduate School of Venture)

**IT-3 : GIS Optimization for Bigdata Analysis and AI Applying**  
Eun-Young Kwak and Dae-woo Park (Hoseo Graduate School of Venture)

**IT-4 : Design of Counterfeit and Modification Verification Platform Using Smart Contracts of Dongdaemun Fashion Clothing Town**

Hyo-Young Kim and Dae-woo Park (Hoseo Graduate School of Venture)

**IT-5 : Measures to improve operation quality measurement of free communication networks where personal information cannot be obtained using public WIFI in Seoul as a case study**  
Dong Hyun Lim and Dae-woo Park (Hoseo Graduate School of Venture)

#### **Session BI-A : Biomedical Imaging and Engineering**

#### **Session DA-A : Database and Internet Application**

#### **Session SC-A : Semiconductor and Communication Service**

**Session Chair :** Prof. Jongwook Jang  
(Dong-eui University)

**14:00~15:00**

**BI-1 : Detection of Small Anomaly Using MUSIC Algorithm Without a Switching Device**  
Won-Kwang Park (Kookmin University)

**BI-2 : Suggesting DNA Alignment-free Sequence Analysis Algorithm with GC-contents and K-mers Preprocessing**  
Joon-Su Kim and Dong-Keun Kim (Sangmyung University)

**DA-1 : IMPLEMENTING RESTRICT ACCESS FUNCTION OF MOODLE IN EVALUATING LEARNING OUTCOMES**  
Tran Tuyen<sup>1</sup> and Nguyen Dinh Nhu Ha<sup>2</sup>  
(<sup>1</sup>Ho Chi Minh City University of Education and Technology, <sup>2</sup>Ho Chi Minh City Nong Lam University )

**SC-1 : Investigation of Electrical Coupling of Monolithic 3-Dimensional Ternary Inverter Cell Consisting of Feedback Field-Effect Transistors**  
Jong Hyeok Oh and Yun Seop Yu (Hankyong National University)

#### **Session MD-B : Multimedia and Digital Convergence**

**Session Chair :** Prof. Kwang Seong Shin  
(Wonkwang University)

**15:20~16:20**

**MD-2 : Who promotes incivility? Finding features of partisan news based on BERT and Random Forest**  
Youn-Jung Park, In-Jae Lim, So-Young Kim, and Se-Young Lee



(Sungkyunkwan University)

- MD-3 : A Simple MNIST Style Dataset and CNN Training for Manchu Script Characters**  
Aaron Daniel Snowberger and Choong Ho Lee (Hanbat National University)
- MD-4 : Automatic Vietnamese Text Summarization with an Ensemble of Pre-trained Models**  
Ti-Hon Nguyen<sup>1</sup> and Thanh-Nghi Do<sup>1,2</sup>  
(<sup>1</sup>Can Tho University, <sup>2</sup>UMMISCO 209)
- MD-5 : Hangul Handwritten Character Recognition using Artificial Neural Networks: MLP, CNN, and RNN**  
Aaron Daniel Snowberger and Choong Ho Lee (Hanbat National University)

#### Session AI-C: AI and Intelligent Information System

Session Chair : Prof.

15:20~16:20

- AI-11 : Automatic leather defect detection using deep learning**  
Shah Muhammad Imtiyaj, Md Ariful Islam Mozumder, and Hee-Cheol Kim (Inje University)
- AI-12 : An approach to analyzing prostate cancer detection in the Histopathological sections using ensemble machine learning**  
Md Hafizur Rahman, Yeong-Byn Hwang, Subrata Bhattacharjee, Heung-Kook Choi, and Hee-Cheol Kim (Inje University)
- AI-13 : Online Presidential Approval and Legislative Success**  
Daesik Kim, Kihong Eom, Wonsik Kang, and Chung Joo Chung (Kyungpook National University)
- AI-14 : Is Checks and Balances System Working in Korean Local Councils?: Focus on Minutes of Seoul and Busan Metropolitan Councils**  
Taehun Yuk and Kihong Eom (Kyungpook National University)

#### Session MD-C : Multimedia and Digital Convergence

#### Session NS-B : Networking and Security

Session Chair : Prof. Daehwan Kim  
(University of Ulsan)

14:00~14:30

- MD-6 : Mixed-Reality Object Control based on Material Recognition of Real World**  
SungWoo Kim and Dongsik Jo (University of Ulsan)
- MD-7 : A Meta-Analysis of Cognitive and Affective Effects of Arduino-Based Educational Programs**  
Bong Seok Jang (Mokpo National University)
- MD-8 : Development of a Learning Tool for Bisecting Angle Technique Using 360-degree Video and Virtual Reality Technology**  
Ji-Eun Im<sup>1</sup> and Jae-Gi Lee<sup>2</sup>  
(<sup>1</sup>Graduate School of Namseoul University, <sup>2</sup>Namseoul University)
- MD-9 : Camera Module Design to Support Vehicle Safety**  
SH. Nasanjargal<sup>1</sup>, Song Chuangxiang<sup>2</sup>, Kwang Seong Shin<sup>3</sup>, Gwanghyun Jo<sup>4</sup>, and Seong-Yoon Shin<sup>4</sup>  
(<sup>1</sup>Erdmiin Khishing School, <sup>2</sup>Shaanxi Province, <sup>3</sup>Wonkwang University, <sup>4</sup>Kunsan National University)
- MD-10 : Developed TOF Sensor for Vehicle Safety**  
Guangxing Wang<sup>1</sup>, Xujie Tan<sup>1</sup>, Gwanghyun Jo<sup>2</sup>, and Seong-Yoon Shin<sup>2</sup>  
(<sup>1</sup>JiuJiang University, <sup>2</sup>Kunsan National University)
- MD-11 : A Proposal for VR Experience Exhibition Model Based on the Combination Relationship of Play Elements**  
Tae Eun Lee (Namseoul University)
- MD-12 : 3D Hologram Data Hole-Filling and LOD Transmission Method Using GAN**  
Kwang Seong Shin<sup>1</sup> and Seong-Yoon Shin<sup>2</sup>  
(<sup>1</sup>Wonkwang University, <sup>2</sup>Kunsan National University)
- MD-13 : Development of an Online Virtual School Using the Metaverse Platform**  
JeongBeom Song (Chungcheongnamdo Office of Education)
- MD-14 : Analysis of Resilience in Deep Learning Programming Classes and C Programming Basic Classes**

13th January, 2023

Semin Kim<sup>1</sup> and Kangsoo You<sup>2</sup>  
(<sup>1</sup>Jeonju National University of Education, <sup>2</sup>Jeonju University)

**MD-15 : Black ice detection method according to temperature range**  
Min-Hye Lee and Sun-Kyoung Kang (Wonkwang University)

**NS-2 : Coordinate Password using Relative Position of Points**  
Jin-Tack Seong (Mokpo National University)

**NS-3 : Classification of Pet Breeds using YOLOv5 Deep Learning Object Recognition**  
Tae-Ju Prak and Teuk-Seob Song (Mokwon University)

**NS-4 : Development of Face Recognition System of Wearing a Mask using YOLOv5**  
Jong-Chan Lee, Young-Hyun Kim, and Teuk-Seob Song (Mokwon University)

**NS-5 : Implementation Hangul Typing Practice Program Reflecting User Interesting Sentences**  
Joo Yeon Seo<sup>1</sup>, Su Hwan Eom<sup>1</sup>, Ji Won Yun<sup>1</sup>, Seong Yong Choi<sup>1</sup>, Jong-Chan Lee<sup>2</sup>, and Teuk-Seob Song<sup>2</sup> (<sup>1</sup>Daejeon Gwanjeo High School, <sup>2</sup>Mokwon University)

**NS-6 : A Study on the Possible Security Threats in Electric Vehicle Charging Infrastructure**  
Do-Yeon Kim, Hyeon-Woo Kim, Ju-Hyung Lee, Dong-Hwi Lee, and Jong-Min Kim (Dongshin University)

**NS-7 : Development of OCPP-based electric vehicle charging management monitoring system**  
Myung-ho Oh, Seung-jun Gong, Hyun-jae-Yu, Dong-Hwi Lee, and Jong-Min Kim (Dongshin University)

#### Session AI-D : AI and Intelligent Information System

#### Session SC-B : Semiconductor and Communication Service

#### Session UN-B : Ubiquitous Sensor Network

**Session Chair :** Prof. Jin-Woo Jung  
(Dongguk University)

**14:40~15:10**

**AI-15 : Identification of Partial Discharge Defects for Eco-Friendly Gas Insulated Switchgears**  
Gi-Woo Jeong<sup>1</sup> and Sung-Wook Kim<sup>2</sup> (<sup>1</sup>SANGSIN Company, <sup>2</sup>Silla University)

**AI-16 : A Research on Analysis of Main Characters of Video Content and Automatic Frame Extraction**

Sung Jung Yong, Hyo Gyeong Park, Yeon Hwi You, Seo Young Lee, and Il-Young Moon (Korea University of Technology and Education)

**AI-17 : A DEEP LEARNING-BASED MODEL FOR THE PREDICTION OF DIABETIC RETINOPATHY USING RETINAL IMAGES**  
Tagne Poupi Theodore Armand, Ali Hussain, kromjanov Kobiljon Komil Ugli, and Hee-Cheol Kim (Inje University)

**AI-18 : A Transfer Learning Approach on Neuropathologic Features for Alzheimer's Early Detection using MRI images**  
Kouayep Sonia Carole, Subrata Bhattacharjee, Tagne Poupi Theodore, and Hee-Cheol Kim (Inje University)

**AI-19 : Estimation of Spatial and Temporal Impacts of Commercial Fishing using Catch and Vessel Mobility Data**  
Solomon A. Owiredo and Kwang-Il Kim (Jeju National University)

**AI-20 : Development of Artificial Intelligence Education Contents using Google Apps**  
Ji-Yeon Hong<sup>1</sup> and Jung-Ho Park<sup>2</sup>  
(<sup>1</sup>Korea National University of Education, <sup>2</sup>Chin-ju National University of Education)

**AI-21 : Potential Field Path Planning Method Using Critical Point based on Graph Convolution Network**  
Tae-Won Kang, Chi Zhang, Yong-Sik Choi, Se In Back, and Jin-Woo Jung (Dongguk University)

**AI-22 : Design of Crowdsourcing Method for Minimizing Blind Spot of CCTV Based on Blockchain**  
Yeonwoo Choi, Bongjun Kim, Junho Jeong, and Sunkyu Kim (Dongguk University)

**AI-23 : Cargo X-ray Image Generation for Object Detection Based on Image Synthesis**  
Hansol Ko<sup>1</sup>, Chansuh Lee<sup>1</sup>, Haneol Jang<sup>2</sup>, and KyungTae Lim<sup>2</sup>  
(<sup>1</sup>KINAC, <sup>2</sup>Hanbat National University)

**AI-24 : Deep Learning and Transfer Learning Based Typhoon Intensity Estimation**  
Hye-Yoon Jung and Il-Ju Moon (Jeju National University)

**AI-25 : Study of Fall Detection System based on Yolo-pose and LSTM system**  
Seung Su Jeong<sup>1</sup>, Nam Ho Kim<sup>2</sup>, and Yun Seop Yu<sup>1</sup>  
(<sup>1</sup>Hankyong National University, <sup>2</sup>Korea Polytechnic)

**AI-26 : Virtual autonomous driving simulation environment for object detection test**  
Daehwan Kim (University of Ulsan)

**AI-27 : PM10 prediction using the EEMD-LSTM model**

- Daejeon** : Yong-Jin Jung and Chang-Heon Oh (Korea University of Technology and Education)
- SA-2** : **Design of Low Phase Noise VCO for 5G mmWave PLL**  
Min-Su Kim<sup>1</sup> and Sang-Sun Yoo<sup>2</sup>  
(<sup>1</sup>Mokpo National University, <sup>2</sup>Pyeongtaek University)
- SA-3** : **A Design of 223-bit Binary Edwards Curve Scalar Multiplier using mixed w-Coordinates**  
Min-Ju Kim, Young-Su Jeong, and Kyung-Wook Shin  
(Kumoh National Institute of Technology)
- UN-2** : **Reinforcement Learning based Routing using adaptive Q-update**  
Hyung-Kun Park (KOREATECH)
- UN-3** : **Design of Context-based Offloading Model for Fast IoT Fault Diagnosis**  
Siwoo Byun (Anyang University)

#### Session CA-B : Communication System and Applications

#### Session IT-B : IT Convergence Technology

#### Session IB-B : IoT and Big Data

Session Chair : Prof. Semin Kim  
(Jeonju National University of Education)

15:20~15:50

- CA-4** : **Underwater channel analysis for the optimization of LFM acoustic signals**  
Seong-Ho Kim, Se-Yeon Kim, Tae-Geon Chung, Ho-Jun Lee, Sung-Hyun Park, and Hak-Lim Ko (Hoseo University)
- CA-5** : **A study of the performance analysis of LFM signals in underwater channel environments**  
Tae-Geon Chung, Min-Hyuk Cha, Kwnag-Young Chae, Kye-Won Kim, Sung-Hyun Park, and Hak-Lim Ko (Hoseo University)
- CA-6** : **Performance analysis of OFDM acoustic signals with wide bandwidth in underwater communication channels**  
Kwang-Young Chae, Min-Hyuk Cha, Sung Hyun Park, Tae-Ho Im, and Hak-Lim Ko (Hoseo University)
- CA-7** : **E-band Tx and Rx modules on a metal-backed liquid crystal polymer (LCP) substrate**  
Young Chul Lee (Mokpo National University)

- DA-8** : **Extension of minimal codes for distributed learning**  
Jin-Ho Chung (University of Ulsan)
- DA-9** : **Freshness Ratio of Information for Geo/G/1/1 Queue**  
Yutae Lee (Dong-eui University)
- DA-10** : **Investigation of Electrical Coupling by Random Dopant Fluctuation in Monolithic 3D Inverter Stacked with MOSFETs**  
Geun Jae Lee<sup>1</sup>, Faraz Najam<sup>1</sup>, and Yun Seop Yu<sup>2</sup>  
(<sup>1</sup>Spruson & Ferguson, <sup>2</sup>Hankyong National University)
- IT-6** : **Deep Learning-based MBTI Classification NLP Ensemble Model**  
Young-Bok Cho (Daejeon University)
- IT-7** : **The Development of AI based Subject-linked Class Program**  
Jung-Ho Park (Chin-ju National University of Education)
- IT-8** : **Design of Traffic Information System for Advanced Traffic Safety and Transportation Convenience Services**  
Am-Suk Oh (TongMyong University)
- IT-9** : **A Research on the Directional Prediction of Autonomous Driving Vehicles**  
Yeon Hwi You, Hyo Gyeong Park, Sung Jung Yong, Seo Young Lee, and Il-Young Moon (Korea University of Technology and Education)
- IT-10** : **Performance Comparison of Real-Time Traffic Hand Signal Recognition System with or without Pose Estimation**  
Tae-su Wang and Jongwook Jang (Dong-eui University)
- IT-11** : **Real-time flood management system implementation using LSTM-GRU model**  
Minwoo Cho<sup>1</sup>, Sungwoo Jeon<sup>1</sup>, Taejun Lee<sup>1</sup>, Hangil Kim<sup>2</sup>, and Hoekyung Jung<sup>1</sup> (<sup>1</sup>PaiChai University, <sup>2</sup>Korea University of Media Arts)
- IT-12** : **Fast and High Accurate Insulation Resistance Calculation Method using Adaptive Time Constant**  
Ki-bum Son and Jong Phil Hong (Chungbuk National University)
- IT-13** : **Next-Generation Traffic Light System**  
A. Nomin<sup>1</sup>, Seong-Yoon Shin<sup>2</sup>, and Kwang-Baek Kim<sup>3</sup>  
(<sup>1</sup>Ulaanbaatar khot, <sup>2</sup>Kunsan National University, <sup>3</sup>Silla University)
- IB-2** : **Movement Path Determination Method to the Optimal Cluster Using GIoU in a Wi-Fi Environment**  
Chang-Pyo Yoon<sup>1</sup>, Daesung Lee<sup>2</sup>, and Chi-Gon Hwang<sup>3</sup>  
(<sup>1</sup>GyeongGi University of Science and Technology, <sup>2</sup>Catholic University of Pusan, <sup>3</sup>Kwangwoon University)

