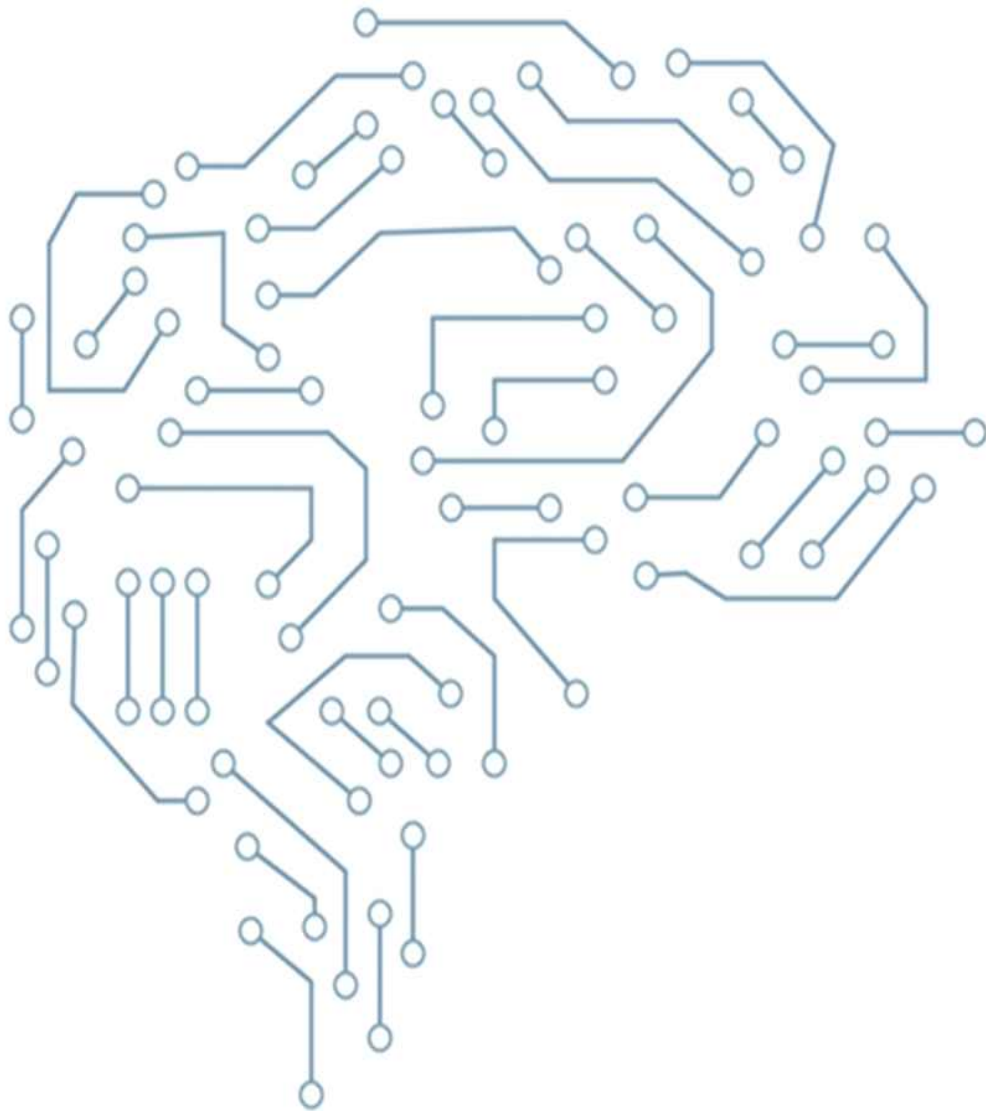# The 1st International Conference on Convergence Signal Processing Technology 2023

February 2~3, 2023

Hidden Cliff Hotel & Nature, Jeju, Korea

KICSP The Institute of Convergence Signal Processing

The 1ST International Conference on Convergence Signal Processing Technology

Organization of ICSPT 2023

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· Dr. Lee shirly(Intel, USA)
· Dr. Seung-woo Lee(Kenya Advanced Institute of Science & Technology, Kenya)

Welcome Message from the Conference General Co-Chair

Dear members, researchers and participants,

Welcome to the International Conference on Innovation, Technology and Sustainability at Hidden Cliff Hotel & Nature, hosted by the ICSPT 2023 Organizing Committee.

I say thank you to the members who attend the ICST 2023 academic conference held for the first time in 2023. Our institute achieved an impressive accomplishment of being selected again as a journal on the list in 2022 through ceaseless effort since 2014. I say thank you again to the members who have gone through difficulties in the past.

We, the Korea Institute of Convergence Signal Processing, have secured expertise specialized in the overall convergence technologies, such as electric science, electronic science, computer science, and artificial intelligence based on the signal processing technology and supported the related research activities. We contribute to national development and the promotion of international cooperation by revitalizing the application.

In addition, we subdivided subcommittees into image, voice, body, sound, ultrasonic wave, video signal processing, and multimedia applications; telecommunications and computer communications signal processing; radar signal processing; optical signal processing; ultrasonic wave signal processing; and other circuit system signal processing and have continuously made efforts to secure expertise.

The first international academic conference to be held will be an event to present the enthusiasm and effort the members of the institute have shown in a series of processes in which our journal has been listed as a general academic journal, a candidate journal, and a listed journal; research achievements and successful development cases achieved from that; and performances in the industrial field. Taking this international academic conference as a momentum will be an opportunity for everyone who attends to see that we, the Korea Institute of Convergence Signal Processing, have sufficient potential for further development. Thank you.

Sincerely.

Jun-Mo Park

President of the KICSP(The Korea Institute of Convergence Signal Processing)

General Co-Chair of ICSPT2023

Program for the 1st ICSTP2023

Time	Content
▶ Wednesday February 1. 2023	**HIDDEN CLIFF HOTEL & NATURE**
09:00~10:30	**Registration**
10:30~11:30	**<Workshop & Chair Meeting>** Program Chair : Prof. Roy C. Park (Sangji University, Korea)
11:30~12:00	**<Opening Address>** Prof. Jun-Mo Park (Yonsei University, General Co-Chair of ICSPT2023)
12:00~13:00	Lunch Time
	<Special Seminar> Activation Strategies of Digital Great-Transformation START-UP
13:00~14:30	Title : Digital healthcare percolating into everyday life Speaker : Byung-Woo Jo (Careandco Co., Ltd.,)
14:30~16:00	Title : Utilization of Big Data through Reverse Design Speaker : Dae-Soo Ha (TigerAI)
16:30~18:00	Title : From cooperation to innovation, Busan's Startup Grows with local industry-academic collaboration. Speaker : Prof. Hyun Park (Dongeui University)
18:00~19:30	Title : Intelligent IoT smart factory technology development trend Speaker : Prof. Yeon-Chul Ha (Pusan National University)
19:30~20:00	Organization Committe Meeting

▶ Thursday February 2, 2023	HIDDEN CLIFF HOTEL & NATURE
Time	**Content**
08:00~09:00	**Registration**
	\<Special Seminar\> **The emergence of a smart community based on artificial intelligence**
09:00~09:50	Title : Metaverse technology trend and construction case study Speaker : Yong-Gi Lee (Panasia Co., Ltd.,)
10:00~10:50	Title : Plans to nurture new industries based on artificial intelligence technology Speaker : Jung-Min Kim (CyberLogitech)
11:00~11:50	Title : Autonomous Vehicle trend research Speaker : Hoon-Lee (TotalSoftBank)
12:00~13:00	Lunch Time
13:00~13:50	Title : Research of big data trends in the financial sector Speaker : Jong Chul Ko (Pos-Tech Co., Ltd.,)
14:00~14:50	Title : Healthcare big data trend research Speaker : Prof. Roy C. Park (Sangji University)
15:00~15:50	Title : Digital Transformation Trend Research Speaker : Jung-Soo Kim (SDIN Co. Ltd.,)
16:00~16:30	Break Time
16:30~17:20	Title : Smart factory technology Trend and Construction case study Speaker : Prof. Youngi-Sil Lee (Donseo University)
17:20~18:10	Title : Digital Twin technology trends and construction case studies Speaker : Prof. Ellen J. Hong (Yonsei University)

Time	Content	
▶ Friday February 3, 2023	**HIDDEN CLIFF HOTEL & NATURE**	
Time	**Content**	
09:00~10:00	**Registration (Lobby 2F)**	
	Oral Presentation	
	Harmony Hall (2F)	**Opus Hall (3F)**
10:10~11:00	Session 1-A	Session 1-B
11:00~11:10	Break	
11:10~12:00	Session 2-A	Session 2-B
	Poster Session	
10:00~12:00	**Lobby (2F)**	
12:00~13:00	Lunch Time	
	Harmony Hall (2F)	**Opus Hall (3F)**
13:10~14:00	Session 3-A	Session 3-B
14:10~15:00	Break	
15:00~15:30	Closing Ceremony	

Oral Presentation / Poster Session

≪ Friday February 3, 2023 ≫

09:00~15:00

Oral Presentation

Session 1-A   Chair Prof. Young-Sil Lee (Dongseo University)
▶ 10:10~11:00 -- Harmony Hall

Session 1-B   Chair Prof. Ellen J. Hong (Yonsei University)
▶ 10:10~11:00 -- Opus Hall

Session 2-A   Chair Prof. Yeon-Chul Ha (Pusan National University)
▶ 11:10~12:00 -- Harmony Hall

Session 2-B   Chair Prof. Choong Ho Lee (Hanbat National University)
▶ 11:10~12:00 -- Opus Hall

Session 3-A   Chair Prof. Ji-Yun Seo (Dongseo University)
▶13:10~14:00 -- Online (Web-site)

Session 3-B   Chair Prof. Roy C. Park (Sangji University)
▶13:00~14:10 -- Online (Web-site)

Poster Session

Poster   Chair Prof. Byung Ho Park (Yonsei University)
▶10:10~12:00 -- Lobby

1-A　Harmony Hall (2F)　10:10~11:00

Chair Prof. Young-Sil Lee (Dongseo University)

01 A Multi-hop Secure UWOC assisted Local Area Network for UIoT and Underwater Monitoring

Maaz Salman, Javad Bolboli, Kang-Jun Baeg, Wan-Young Chung(Pukyong National University)

02 Analysis of possible factors that reduce collaboration efficiency and suggest improvement directions when collaborating using HMD

Heeju Kwon, Jeonghoon Shin(Daegu Catholic University)

03 Study on smart helmet for smart ship's crews based on Wi-Fi

Do-Hyeong Kim(Pusan National University), Hee-Chan Doh, In-Seong Lee, Sang-Bok Lee(OSLAB.Co..Ltd.), Yeon-Chul Ha(Pusan National University)

04 CBCT-guided 3D Dental Structure Reconstruction from Panoramic X-ray: A Preprocessing Pipeline

Anusree P S, Bumjin Park, Wonsang You(Sun Moon University)

05 Brain tumor classification system using CNN-based learning model

Su-Bin Hong, Roy C. Park(Sangji University)

1-B　Opus Hall (3F)　10:10~11:00

Chair Prof. Ellen J. Hong (Yonsei University)

01 Comparative Analysis of FAT32 by OS

Ga-Hyeon Lee, Hoon-Jae Lee(Dongseo University)

02 A Basic Study on the Breakers Energy Dispersion Method for Preventing the Rip Current

Kyeong-Min Noh, Min-Seo Kim, Seung-Heon Kim, Il-Woon Kim, Chang-Wan Kim(Gyeongnam Science High School)

03 Mental Stress Detection: Development and Evaluation of a Wearable In-Ear Plethysmography

Hika Barki, Wan-Young Chung(Pukyong National University)

04 Detection of Nutrias using YOLO

Dong-Min Park, Yeong-Seok Jo, Seokwon Yeom(Daegu University)

05 Classification of lung lesions using mask filter algorithms

Hyun-Mo Jung, Roy C. Park(Sangji University)

2-A **Harmony Hall (2F)** 11:10~12:00

Chair Prof. Yeon-Chul Ha (Pusan National University)

01 Exploring the Evidence Utilization of dmg Disk Image Files in macOS
Jong-Do Kim, Hoon-Jae Lee(Dongseo University)

02 A Machine Learning Approach for Underwater Optical Signal Detection
Ramavath Prasad Naik, Lionel Nkenyereye, Kang-Jun Baeg, Wan-Young Chung(Pukyong National University)

03 Correlation analysis of weather data, POIs, road data and traffic accident frequency
Hyeon-Jin Jung, Han-Jin Lee, Ellen J. Hong(Yonsei University)

04 Research of Lightweight of ECG Classification Mode based on Pruning for Wearable Healthcare
Ji-Yun Seo, Jae-Jung Kim(Dongseo University), Yun-Hong Noh(Busan Digitial University), Do-Un Jeong(Dongseo University)

2-B **Opus Hall (3F)** 11:10~12:00

Chair Prof. Choong Ho Lee (Hanbat National University)

01 K-Means Malware Classification Method Based on TF-IDF
Seoung-Pyo Hong, Hoon-Jae Lee(Dongseo University)

02 Data preprocessing method for traffic accident risk prediction model
Ji-Woong Yang, Tae-Wook Kim, Ellen J. Hong(Yonsei University)

03 Implementation of Lower Limb Rehabilitation classification model based on CNN using spectrogram image
Jae-Jung Kim, Ji-Yun Seo(Dongseo University), Yun-Hong Noh(Busan Digitial University), Do-Un Jeong(Dongseo University)

04 Analysis of the Vulnerabilities of Technical Security in the Cloud
Eunjeong Do, Hoon-Jae Lee(Dongseo University)

3-A | https://cafe.naver.com/kicsp/icspt2023 Online Session 1 | 13:10~14:00

Chair Prof. Ji-Yun Seo (Dongseo University)

01 Predicting the Risk of Traffic Accidents using Road Traffic Conditions and Driver External Factors

Hyun-Mo Jung, Roy C. Park(Sangji University)

02 Development of Mordality Predict Model for patients with Lung Disease using Machine Learning

Roy C. Park(Sangji University), Byoung-Ho Park(Yonsei University)

03 Lung lesion object detection based on image channel expansion and dimensionality reduction

Yoo-Bin Han, Jae-Hyun Pyo, Ji-Hoon Kim(Myongji University)

04 Implementation of CNN-based ECG arrhythmia classification system

June-Young Park(Ajou University), Byoung-Ho Park(Yonsei University)

05 GCN-RNN model for Modeling the multi-label diagnosis of chest X-ray disease

Dong-Hoon Shin(Kyonggi University), Jeong-Hee Hong(Yonsei University)

3-B | https://cafe.naver.com/kicsp/icspt2023 Online Session 2 | 13:10~14:00

Chair Prof. Ji-Yun Seo (Dongseo University)

01 Supervised learning-based pothole detection technology using GANomaly

Hoill Jung(Daelim University), Roy C. Park(Sangji University)

02 Implementation of AI-based Dessert Classification application for Android

Habibullo Hamido, Young Sil Lee(Dongseo University)

03 Design to improve accuracy of repositioning detection sensor devices

Jung-hyeon Choi, Jun-ho Park(AIRLab), Jun-Mo Park(Yonsei University)

04 Healthcare system using Medical Images(CT, X-ray, MRI etc.,)

Byoung-Ho Park(Yonsei University)

05 A Study on Defect Classification Algorithm of Chest Images Based on Improved U-Net

Byung-Ho Park, Jun-Mo Park(Yonsei University)

Poster | **Lobby** | **09:00 ~ 12:00**

Chair Prof. Byung Ho Park (Yonsei University)

01 A New TRFI-Channel Estimation Scheme with TDA method in IEEE 802.11p/OFDM System

Chang-Ick Song, Kyun-Byoung Ko(Korea National University of Transportation)

02 Welding Bead Detection Algorithm Using the Brightness Value in the ROI

Jae-Eun Lee, Jong-Nam Kim(Pukyong National University)

03 Development of Lightweight Type Ground Control System with Meteorological Information System for Operation of Unmanned Mobile Vehicle

Yong-Jin Cho(Daehan Drone), Myung-Ho Jung(UAV System), Soon-Gil Kang(UNI-SYSTEM), Jeong-Won Hwang(Masan University)

04 A Study on the development of communicator-embedded safety helmet for maritime special task force

Yeon-Chul Ha, Deok-Yeong Kim(Pusan National University), Hee-Chan Doh, In-Seong Lee, Ji-Hoon Park(OSLAB.Co..Ltd.)

05 Implementation of Neural Network Model for Image Emotion Classification

Seon-Jeong Ham, Da-Hyun Song, Yun-Hee Han, Chang-Min Kim, Myeong-Soo Jang, Woo-Beom Lee(Sangji University)

06 Preliminary study on the effect of Sampling frequency on Learning Convergence in CNN based Finger Number Recognition using sEMG Signals

Gerelbat Batgerel, Chun-Ki Kwon(Soonchunhyang University)

07 Ultrasonic Moving Sound Source Tracking Method Using Fixed Receivers

Kyujung Lee, Choong Ho Lee(Hanbat National University)

08 Improving and measuring the sharpness of X-Ray images for agricultural product inspection

Eunhyuk Baek, Young-tae Kwak(Jeonbuk National University), Suksim Oh(AiST TECH)

09 Pet Skin Image Data Acquisition Platform for Skin Disease Detection based on Artificial Intelligence

Gyubin Lee, Youngchan Lee, Bumjin Park, Wonsang You(Sun Moon University)

10 A Feasibility Study on Outpainting-Powered Pet Pose Estimation

Gyubin Lee, Youngchan Lee, Wonsang You(Sun Moon University)

11   Development of Multiple Sensor-Based Switchgear Safety Management Support System

Jae-Jung Kim(Dongseo University), Sung-Hack Jung(YJ SOLUTION), Do-Un Jeong(Dongseo University)

12   Study on Noise Reduce Based on Deep Learning for Improve ECG Arrhythmia Detection Performance

Ji-Yun Seo, Jae-Jung Kim, Do-Un Jeong(Dongseo University)

13   Implementation of Text Generation Model based on Improve OCR System Performance

Jae-Jung Kim, Ji-Yun Seo, Do-Un Jeong(Dongseo University)

14   A study on the optimal video photographing technique for underwater inspection using underwater drone

Sang Min Park, Yeon-Chul Ha(Pusan National University)