



IEEE Student Paper Contest 2021

Advanced Program

I. Schedule and General Information

Time	Sessions			
13:00 ~ 14:30 (90 min.)	Session I-1	Session I-2	Session I-3	Session I-4
	Systems and Algorithms (1) <u>Session Chairs</u> Jeong Yon Shim Hyun Kim https://us02web.zoom.us/j/6950400978?pwd=ODRaSTJpb0tjUEQ0bkN5OWxWZDNCQT09	Communication and Signal Processing (1) <u>Session Chairs</u> Jeong Woo Lee Hoon Kim https://zoom.us/j/9272912109?pwd=MHAUzZ5dndYc2owbEFGenNGNEdlZz09	Semiconductor Devices and Circuits (1) <u>Session Chairs</u> Myounggon Kang Seongjae Cho https://us02web.zoom.us/j/4520578006?pwd=M1VRcHpSMVJkWIltV0lpOHlISDRrUT09	Semiconductor Devices and Circuits (2) <u>Session Chairs</u> Hyun Chang Park Won Bo Shim https://us02web.zoom.us/j/7520728654?pwd=U1F6ZFFSS1JCb2lkXJTeGJIMEpOdz09
14:30 ~ 14:50 (20 min.)	Coffee Break			
14:50 ~ 16:20 (90 min.)	Session II-1	Session II-2	Session II-3	Session II-4
	Systems and Algorithms (2) <u>Session Chairs</u> Jeong Yon Shim Hyun Kim https://us02web.zoom.us/j/6950400978?pwd=ODRaSTJpb0tjUEQ0bkN5OWxWZDNCQT09	Communication and Signal Processing (2) <u>Session Chairs</u> Jeong Woo Lee Hoon Kim https://zoom.us/j/9272912109?pwd=MHAUzZ5dndYc2owbEFGenNGNEdlZz09	Semiconductor Devices and Circuits (3) <u>Session Chairs</u> Myounggon Kang Min-Woo Kwon https://us02web.zoom.us/j/4520578006?pwd=M1VRcHpSMVJkWIltV0lpOHlISDRrUT09	Robotics and Control <u>Session Chairs</u> Chae-Woo Lee Seongjae Cho https://us02web.zoom.us/j/7520728654?pwd=U1F6ZFFSS1JCb2lkXJTeGJIMEpOdz09
16:20 ~ 17:00 (40 min.)	Evaluation			
17:00	IEEE Student Paper Contest 2021 Prize Winners Announcement https://us02web.zoom.us/j/83293385515?pwd=MDgxUnFsbzFjU2djeXl0ZjVnNTY1UT09			

- Participants can join each session via the Zoom addresses linked in the session information.
- The prize winners will be announced at the beginning of the general meeting at 5 pm. Please find the Zoom address linked in the above table of schedule.
- The students do not have to participate in the general meeting after the announcement.

II. Presenters and Presentation Titles

Session I-1: Systems and Algorithms (1)

► Session Chairs:

Prof. Jeong Yon Shim (Kangnam Univ.) & Prof. Hyun Kim (Seoul Nat'l Univ. of Science and Technology)

► Zoom Access: <https://us02web.zoom.us/j/6950400978?pwd=ODRaSTJpb0tjUEQ0bkN5OWxWZDNCQT09>

Time	Presentation Title
13:00 ~ 13:15	Hyeonjin Chung (Hanyang University) [SA-01] Leveraging Deep Learning for DoA Estimation: Experiments with Real Data Collected via USRP
13:15 ~ 13:30	Jong Ik Park (Chung-Ang University) [SA-02] Prediction of electric power consumption using 3-ch image conversion of tabular data
13:30 ~ 13:45	Joonho Seon (Kwangwoon University) [SA-03] Semi-supervised Graph Convolutional Network with Generative Adversarial Network for Fault Diagnosis
13:45 ~ 14:00	Thien An Nguyen (Soongsil University) [SA-04] Improving Serial Detection using Iterative MAP Algorithm for Bit-Patterned Media Recording
14:00 ~ 14:15	Lee Jae Un (Inha University) [SA-05] Design of an Autonomous Vehicle and Safety System for Unmanned Services
14:15 ~ 14:30	Sehee Kim (Sookmyung Women's University) [SA-06] A Design of Study Time Analysis Service using Biometric Information

Session I-2: Communication and Signal Processing (1)

► **Session Chairs:** Prof. Jeong Woo Lee (Chung-Ang Univ.) & Prof. Jae-Hyun Kim (Ajou Univ.)

► **Zoom Access:** <https://zoom.us/j/9272912109?pwd=MHArUzZ5dndYc2owbEFGenNGNEdlZz09>

Time	Presentation Title
13:00	Hongju Lee (Korea University)
~	[CS-01] Distributed Task Offloading in Mobile Edge Computing with Virtualization via Message Passing
13:15	
13:15	Syed Ahson Ali Shah (Hanyang University)
~	[CS-02] Design of Novel Endovascular Aortic Stent System Exhibiting Attractive Antenna Characteristics
13:30	
13:30	Soonbin Lee (Sungkyunkwan University)
~	[CS-03] Joint Bit Allocation between Texture and Geometry for Immersive Video Coding
13:45	
13:45	Sungho Park (Mokpo National University)
~	[CS-04] Power handling capability enhancement design technique of antenna tuning switch in all-off condition
14:00	
14:00	Jong Soo Baik (Ajou University)
~	[CS-05] Analysis of Handover Performance in LEO-based NTN
14:15	
14:15	Hyeong Min Kim (Soongsil University)
~	[CS-06] Resource Allocation for D2D Communications with Sparse Code Multiple Access
14:30	

Session I-3: Semiconductor Devices and Circuits (1)

► **Session Chairs:**

Prof. Myounggon Kang (Korea Nat'l Univ. of Transportation) & Prof. Seongjae Cho (Gachon Univ.)

► **Zoom Access:** <https://us02web.zoom.us/j/4520578006?pwd=M1VRcHpSMVJkWlltV0lpOHlISDRrUT09>

Time	Presentation Title
13:00	Seungil Lee (Seoul National University of Science and Technology)
	[SD-01] Implementation of Better Instance Segmentation Networks Using Uncertainty
	Seungwon Go (Ajou University)
13:13	[SD-02] Design Optimization of Heterojunction 1T DRAM Cell with SiGe Body/Drain for High Performance
	Dongseok Kwon (Seoul National University)
13:26	[SD-03] Hybrid Training Method for an Accurate Neuromorphic System with an AND Flash Array Architecture
	Myoung Su Chae (Sejong University)
13:39	[SD-04] Self-rectifying Resistive Switching Memory in Ti/Zr _x N _y /p-Si structure
	Myeong-Cheol Shin (Kwangju University)
13:52	[SD-05] Electrical characteristics of 1700V SG-MOSFET
	Dongju Kim (Mokpo National University)
14:05	[SD-06] Demonstration of 0.2V supply fully-integrated Tunneling-FET and MOSFET hybrid logic/analog circuits using 65nm advanced RF CMOS technology
	Jihun Park (Konkuk University)
14:18	[SD-07] Performance Benchmarking of MoS ₂ -channel Field-Effect Transistor

Session I-4: Semiconductor Devices and Circuits (2)

► Session Chairs:

Prof. Hyun Chang Park (Dongguk Univ.) & Prof. Won Bo Shim (Seoul Nat'l Univ. of Science and Technology)

► **Zoom Access:** <https://us02web.zoom.us/j/7520728654?pwd=U1F6ZFFSS1JCb2lkXJTeGJlMEpOdz09>

Time	Presentation Title
13:00	Yunjae Kim (Korea National University of Transportation)
	[SD-08] The Analysis of Single Event Upset in structure of Gate-All-Around
13:13	Sibeom Kim (Gachon University)
	[SD-09] Analytical Discrimination of Data Loss Mechanisms in Capacitorless Dynamic Random-Access Memory
13:26	Taeho Lee (Seoul National University of Science and Technology)
	[SD-10] Infectious Disease Detection System by Using Temperature and Visited Country Record
13:39	Jongwon Lee (Korea National University of Transportation)
	[SD-11] The TID Circuit Simulation in 5nm Node GAAFET
13:52	Arati Kumari Shah (Gachon University)
	[SD-12] Design of Integrate-and-Fire Neuron Circuit for Si CMOS Spiking Neural Network
14:05	Tae Jun Yang (Kookmin University)
	[SD-13] Photo-sensitive InGaZnO memristor-based synapse-neuron circuits for circadian rhythm diagnosis
14:18	Ye Hyang Moon (Konkuk University)
	[SD-14] OLED Display's Internal Pixel Compensation Circuit Transient Response Modeling Methodology

Coffee Break: 14:30 ~ 14:50

Session II-1: Systems and Algorithms (2)

► Session Chairs:

Prof. Jeong Yon Shim (Kangnam Univ.) & Prof. Hyun Kim (Seoul Nat'l Univ. of Science and Technology)

► Zoom Access: <https://us02web.zoom.us/j/6950400978?pwd=ODRaSTJpb0tjUEQ0bkN5OWxWZDNCQT09>

Time	Presentation Title
14:50 ~ 15:05	Chanuk Kyeong (Kwangwoon University) [SA-07] Performance of Gesture Recognition based on Long Short-Term Memory
15:05 ~ 15:20	Hana Kim (Ewha Womans University) [SA-08] SQNR-based Layer-wise Mixed Precision Schemes with Computational Complexity Consideration
15:20 ~ 15:35	Seonggeun Jang (Inha University) [SA-09] Method and Applications of Transformers Lifetime Prediction
15:35 ~ 15:50	Jaehyup Seong (Ajou University) [SA-10] Deep Reinforcement Learning-Based Sum Rate Maximization in Rate Splitting Multiple Access with Energy Harvesting
15:50 ~ 16:05	Jiwon Chun (Sookmyung Women's University) [SA-11] An Integrated Stress Analysis System using Facial and Verbal Sentiment
16:05 ~ 16:20	Byunghyun Kim (Hanyang University) [SA-12] A CNN-Attention Model for Epileptic Seizure Detection

Session II-2: Communication and Signal Processing (2)

► Session Chairs: Prof. Jeong Woo Lee (Chung-Ang Univ.) & Prof. Jae-Hyun Kim (Ajou. Univ.)

► Zoom Access: <https://zoom.us/j/9272912109?pwd=MHArUzZ5dndYc2owbEFGenNGNEdlZz09>

Time	Presentation Title
14:50 ~ 15:05	Jeonghyeon Jang (Korea University) [CS-07] Deep Learning for Multi-User MIMO Systems: Joint Design of Pilot, Limited Feedback, and Precoding
15:05 ~ 15:20	Ki-Won Park (Soongsil University) [CS-08] Fine Beam Tracking for a Wireless Power Transfer System with Beam Scanning
15:20 ~ 15:35	Won-Jae Lee (Ajou University) [CS-09] Performance Evaluation Full-Duplex MAC Protocol Based on Downlink NOMA in WLANs
15:35 ~ 15:50	Jong-Beom Jeong (Sungkyunkwan University) [CS-10] Subpicture-based Rate Control and Frame Packing for 6DoF Immersive Video Streaming
15:50 ~ 16:05	Hwanjin Kim (KAIST) [CS-11] Low-Complexity Massive MIMO Channel Prediction Via Meta-Learning and Deep Denoising
16:05 ~ 16:20	Seongwoo Lee (Kwangwoon University) [CS-12] Categorical Item Recommender Systems Based on Alternating Least Squares using Implicit Data

Session II-3: Semiconductor Devices and Circuits (3)

► **Session Chairs:**

Prof. Myounggon Kang (Korea Nat'l Univ. of Transportation) & Prof. Min-Woo Kwon (Gangneung-Wonju Nat'l. Univ.)

► **Zoom Access:** <https://us02web.zoom.us/j/4520578006?pwd=M1VRcHpSMVJkWltV0lpOHlISDRrUT09>

Time	Presentation Title
13:00	Sungrae Kim (Seoul National University of Science and Technology) [SD-15] Hardware-friendly Mean-shifting Quantization with Iterative Retraining
13:13	Shinhee Kim (Ajou University) [SD-16] Suppression of Negative Differential Resistance (NDR) in Negative Capacitance Tunnel Field-Effect Transistor (NCTFET) with Gate-Drain Underlap Structure
13:26	Dong-Jun Han (University of Seoul) [SD-17] A flexible and transparent microelectrode array based on inorganic-organic bilayer conductor for neural recording
13:39	Dong-Wook Byun (Kwangwoon University) [SD-18] Influence of the Ion Implantation Proportion on the Deep Level Traps in 4H-SiC
13:52	Seung Gi Seo (Incheon National University) [SD-19] NO ₂ Gas Sensing on Heterostructure of Indium-Oxide@Single Walled Carbon Nanotubes and Their Application Toward Flexible NO ₂ Gas Sensors
14:05	Jae-Min Sim (Hanyang University) [SD-20] SiN Engineering Strategies for Improving Program and Data Retention Characteristics in 3D NAND Flash Memory
14:18	Doowon Lee (Sejong University) [SD-21] Fast Response/Recovery of SnO ₂ Memristor-based C ₂ H ₆ Gas Sensor Operated at Room Temperature

Session II-4: Robotics and Control

► **Session Chairs:** Prof. Chae-Woo Lee (Ajou Univ.) & Prof. Seongjae Cho (Gachon Univ.)

► **Zoom access:** <https://us02web.zoom.us/j/7520728654?pwd=U1F6ZFSS1JCb2lkXJTeGJlMEpOdz09>

Time	Presentation Title
14:50 ~ 15:05	Goeun Son (Inha University) [RC-01] A Study On The Fault Diagnosis of Wind Turbines Using Support Vector Machine on Cross Validation
15:05 ~ 15:20	Dajun Wee (Seoul National University) [RC-02] A Feasibility Study on the Unity-based Module for Next-generation Robot-assisted Surgery
15:20 ~ 15:35	Hong-Jik Kim (Hanbat National University) [RC-03] Development of Physics Simulation for Augmented Reality Billiard Content
15:35 ~ 15:50	Seojeong Park (Inha University) [RC-04] A Study on the Addition of the Ability of Power-Flow Calculation to SCADA System Using Matlab and Simulink
15:50 ~ 16:05	Dongyoon Baek (Seoul National University) [RC-05] Improving Clinical Applicability of U-Net Designed for Organ Segmentation by Training with New Dataset Including Bleeding Conditions
16:05 ~ 16:20	Jinhee Myoung (Sookmyung Women's University) [RC-06] Design of AI-powered Hybrid Control Algorithm of Robot Vehicle for Enhanced Cornering Performance