

2025 International Conference on Electronics, Information, and Communication (ICEIC 2025)

**Osaka, Japan
19-22 January 2025**



**IEEE Catalog Number: CFP2558W-POD
ISBN: 979-8-3315-1076-3**

**Copyright © 2025 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP2558W-POD
ISBN (Print-On-Demand):	979-8-3315-1076-3
ISBN (Online):	979-8-3315-1075-6
ISSN:	2574-1403

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

Making Mamba Vision Temporal: Leveraging TSM for Efficient Video Understanding.....	1
<i>Seung Woo Kwak, Sungjun Hong, Sangyun Lee</i>	
A Single Layer Metasurface Based Reflectarray for X-Band Application	4
<i>Jawad Ali, Ashfaq Ahmad, Dong-You Choi</i>	
SCEval: An Open-Source Platform for Standardized Evaluation and Optimization of Standard Cell Libraries in Next-Generation Process Nodes	8
<i>Longfan Li, Wangzilu Lu, Yuxin Ji, Zhiwen Gu, Huajie Huang, Yuhang Zhang, Jian Zhao, Yongfu Li</i>	
Runtime Embedded Software Malfunction Detection Based on Profile Generation of Current-Level Pattern Matcher	12
<i>Sanghoon Lee, Daejin Park</i>	
Cryptocurrency Price Forecasting Using Deep Learning Model with Technical Indicators.....	17
<i>Ming Che Lee, Ru Jun Xu</i>	
Accelerating Deep Neural Networks with a Low-Cost Lossless Compression.....	21
<i>Seongwook Kim, Gwangeun Byeon, Seungeui Lee, Youngseok Bae, Seokin Hong</i>	
A Computing-In-Memory Analog Popcount Circuit Utilizing 9T-SRAM.....	25
<i>Changwoo Park, Minjoo Yoo, Jinwook Burm</i>	
Evaluation of 2T0C DRAM-Based Processing-In-Memory Systems for Accelerating Deep Neural Network Models	29
<i>Jihoon Jang, Inseong Hwang, Hyun Kim</i>	
Optimizing Deep Neural Network Precision for Processing-In-Memory: A Memory Bottleneck Perspective.....	32
<i>Inseong Hwang, Jihoon Jang, Hyun Kim</i>	
Speech-Guided Drone Control System Based on Large Language Model.....	35
<i>Seok-Hun Choi, Zeen-Chul Kim, Seok-Jun Buu</i>	
Unpaired Shadow Removal: Enhancing Attention to Shadow Areas Via Dropkey.....	39
<i>Jaewon Yang, Ukcheol Shin, Donghyeon Cho</i>	
A 0.9-V 15.6-Gb/s Single Ended NRZ Receiver with 1-Tap DFE for Low-Power Memory Interfaces	43
<i>Jongmin Lee, Ki-Soo Lee, Joo-Hyung Chae</i>	
Design and Analysis of Static-Free PAM-4 Transmitter for HBM TSV Interface.....	47
<i>Jeonghyeok You, Hohyun Chae, Taeryeong Kim, Ji Hoon Lee, Seong-Ook Jung</i>	
A Conditional GAN and Dual-Channel Hybrid Deep Feature Framework for Robust Sensor Fault Detection in WSNs	51
<i>Rehan Khan, Umer Saeed, Insoo Koo</i>	
Enhancing Naval Mine Detection Through Augmented Side Scan Sonar Data and Synthetic Image Generation for Manned and Unmanned Teaming Systems	56
<i>Jeongkyu Lim, Chanyeong Park, Joonki Paik</i>	

Enhancing IOMMU Efficiency in Heterogeneous SaCs: A Study on Cache Policy Impacts	60
<i>Won Hur, Won Woo Ro</i>	
A 1.05-V/0.5-V 15.6-Gb/s NRZ Transmitter Achieving 0.76-PJ/bit Energy Efficiency for Low-Power Memory Interfaces	64
<i>Ju-Hyeong Yun, Yong-Gyu Yu, Jongchan Lee, Joo-Hyung Chae</i>	
Predicting Glucose Levels Via Disentangled Patterns with Triplet Network	68
<i>Janghee Lee, Heung-Yong Jin, Seok-Jun Buu</i>	
Low Frequency Noise Rejection Amplifier Using Parasitic BJTs for Biomedical Application.....	72
<i>Siddharth Katare</i>	
Driver Impedance Calibration for High Speed Interfaces Without Precision Resistor.....	76
<i>Siddharth Katare</i>	
MOSA: Matrix Optimized Self-Attention Hardware Accelerator for Mobile Device.....	79
<i>Yang-Rwei Chang, Hsuan-Fu Chen, Horng-Yuan Shih</i>	
Optimizing XPS Vacuum Data Drift Detection: A Comparative Study of CUSUM, Kernel CUSUM, and LSTM	83
<i>Su-Hyoung Ha, Jae-Wook Jeon</i>	
An All-Digital Capacitance-To-Digital Converter Based on Time-To-Digital Converter	87
<i>Duo Sheng, Chao-Kai Pai, Yi-Ju Chen, Bo-An Chen, Hao-Yuan Cheng, Ke-Jhong Tan, Ri-En Yeh</i>	
Few-Shot Arbitrary Super-Resolution Considering Consistency and Realness.....	91
<i>Joonhee Lee, Junseo Bang, Se Young Chun</i>	
Zero-Shot Diffusion Models for Demosaicing in Bayer and Non-Bayer Image Sensors	95
<i>Haechang Lee, Dong Ju Mun, Joohoon Lee, Hyunwoo Lee, Se Young Chun</i>	
Machine Learning Analysis of Algorithmic Influence on Economic and Social Dynamics in the Elderly Population of the Philippines: A Pilot Study.....	99
<i>Maria Maura S. Tinao, Jonathan G. Medina, Corazon M. Gamboa, Rod Lawrence Tajon</i>	
Real-Time Performance Analysis for Multiple Neural Networks on Edge Devices.....	103
<i>Takumi Hikino, Hiroyuki Tomiyama</i>	
Focusing on Representation of Multi-Head Attention for Open-Vocabulary Semantic Segmentation.....	107
<i>Dong Un Kang, Se Young Chun</i>	
Redefining PIM Architecture with Compact and Power-Efficient Microscaling	110
<i>Yoonho Jang, Hyeongjun Cho, Seokin Hong</i>	
A Two-Step ADC with a Separate DAC Method for Enhanced Sub-Quantizer Settling Condition.....	114
<i>Jae-Geun Lim, Jun-Ho Boo, Hyoung-Jung Kim, Jae-Hyuk Lee, Kang-Il Cho, Gil-Cho Ahn</i>	
Subnet Level Anomaly Detection at Time Units Using VAE	118
<i>Tatsuki Nishida, Shigeki Aoki, Masaya Ohta, Takao Miyamoto</i>	
Design of a Buffer Amplifier for a W-Band Transceiver.....	122
<i>Jong-Seong Park, Jae-Hyeok Song, Jeong-Taek Lim, Jae-Eun Lee, Jeong-Taek Son, Joon-Hyung Kim, Min-Seok Baek, Byeong-Chan Lee, Ilhun Kim, Eun-Gyu Lee, Choul-Young Kim</i>	

Non-Invasive Blood Sugar Level Meter Based on Light Diffuse Reflection Ratio of 2-PPG Signals	125
<i>Anchalee Manosueb, Kanyapat Moraruk, Kansadanan Saenyamas, Janjira Chintawan, Paramote Wardkein, Peeramed Chodkaveekityada</i>	
IoT Modular Gateway Development for Multi-Standard Compatibility	129
<i>Kattiya Kaiyarach, Sopita Taprik, Bantita Buathong, Peeramed Chodkaveekityada</i>	
Local Overlapping Attentional Selection with VIT for Image Classification in Remote Sensing.....	133
<i>Changman Zou, Wang-Su Jeon, Sang-Yong Rhee</i>	
CMOS Linear Power Amplifier Using pMOS Varactor for Ku-Band SATCOM.....	139
<i>Ilhun Kim, Jae-Hyeok Song, Jeong-Taek Lim, Jae-Eun Lee, Jeong-Taek Son, Joon-Hyung Kim, Min-Seok Baek, Byeong-Chan Lee, Jong-Seong Park, Eun-Gyu Lee, Choul-Young Kim</i>	
Domain Separation Aided Data Efficiency Enhancement for Thermal Object Detection	142
<i>Beomsik Cho, Seoyeong Choi, Soomok Lee</i>	
1:2 Power Dividing Network with Lumped Power Dividers and Amplifier	146
<i>Byeong-Chan Lee, Eun-Gyu Lee, Jung-Taek Lim, Jae-Eun Lee, Jae-Hyeok Song, Jeong-Taek Son, Joon-Hyung Kim, Min-Seok Baek, Jong-Seong Park, Ilhun Kim, Choul-Young Kim</i>	
A Capacitor-Less Divide-By-18 Injection-Locked Frequency Divider Using a Harmonic-Boosted Gating Technique.....	149
<i>Sangyeop Lee, Motohiro Takayasu</i>	
A Method for Improving the Accuracy of Speech Emotion Recognition Using Implicitly Filtered Image Generation in Extreme Noisy Environments	152
<i>Jeong-Yoon Kim, Seung-Ho Lee</i>	
Max Intensity Voxelization Method for Autonomous Driving 3D Object Detection Based on LiDAR.....	155
<i>Seung-Tak Ra, Seung-Ho Lee</i>	
A Method to 2D Face Generation Based on Angle Using Condition Diffusion	158
<i>Young-Ji Lee, Seung-Ho Lee</i>	
A Method for Correcting Distortion According to Angle Using Rendering When Creating 3D Face Model from 2D Image.....	161
<i>Hee-Yeol Lee, Seung-Ho Lee</i>	
Operation Shuffling with Multiple S-Boxes Against Power Analysis Attacks	164
<i>Shota Kajiya, Hiroki Nishikawa, Kota Yoshida, Ittetsu Taniguchi, Takao Onoye</i>	
Machine Learning-Based on Abnormality Electronic Circuit Boards Detection System.....	168
<i>Jirasak Korkkaw, Krit Nakyai, Suphachai Thamhinkong, Pakpoom Chansri, Pasapitch Chujai Michel</i>	
Minimization of Load Regulation in a Buck Converter Using Slope-Controlled Ripple Injection Method with Constant On- Time Control.....	174
<i>Chaiwon Kim, Hyeyoung Lee, Youngmin Cha, Dongseok Shin, Shihong Park</i>	
A Data-Driven Odyssey in Solar Vehicles.....	178
<i>Do Young Kim, Kyunghyun Kim, Gyeongseop Lee, Niloy Das, Seong-Woo Kim</i>	
Blockchain in Project Management for Information Security, Transparency and Accountability.....	183
<i>Tahmid Noor Rahman, Mohammad Fasiul Abedin Khan, Labib Bin Shahed, Abdulla Hil Kafi</i>	

A 6.78MHz Wireless Power Transfer System with 3-Mode Global Power Control.....	187
<i>Sungsik Hong, Changwoo Park, Jinwook Burm</i>	
Adaptive Active Balancing in Battery Management Systems with Comprehensive System Modeling	191
<i>Wu Cong Lim, Boon Chiat Terence Teo, Xian Yang Lim, Liter Siek, Eng Leong Tan</i>	
Enhancing 3D Modeling Quality Through Orthorectified Image Accumulation	196
<i>Cheolsu Kwag, Euntaek Kim, Yongsuk Lee, Seungmin Jung, Sung Soo Hwang, Hwangryol Ryu, Youngmin Moon</i>	
Expanding the PDE Cache by Exploiting Underutilized TLB Entries for Data-Intensive Workloads	199
<i>Hyeong Jin Kim, Woo Hyun Kim, Tae Hee Han</i>	
Data Augmentation Using Convolutional Autoencoder for Facial Emotion Recognition	203
<i>Beom Kwon</i>	
GASQ: Hardware-Friendly Gradient Distribution-Aware Split Quantization for Low-Bit CNN Training	207
<i>Sangbeom Jeong, Kwanghyun Koo, Hyun Kim</i>	
Analysis of Transformer Decoder Architecture and KV Cache Behavior During LLM Inference.....	210
<i>Kyudan Jung, Jeong Youn Kwon, Young-Dae Mun, Byeong-Geun Kang, Joon-Seok Song, Min-Ji Kim, Nam-Joon Kim, Hyungon Ryu, Hyuk-Jae Lee</i>	
Study the Model of Wireless Energy Transfer Station Via Internet of Things for Electric Vehicle.....	214
<i>Juthathip Haema, Rattanakorn Phadungthin, Ratchanon Peanpee, Narawit Nilniam</i>	
A High-Performance Point Scalar Multiplier Supporting Edwards25519 and Curve25519 Curves	218
<i>Ju-Hyung Lee, Kyung-Wook Shin</i>	
A Hardware Accelerator for High-Speed Computation of Ed25519 and X25519.....	221
<i>Su-Hyeon Lee, Song-Hee Lee, Kyung-Wook Shin</i>	
Optimization of TSV-Induced Stress Using a Slanted Profile in a Backside TSV Process	224
<i>Seki Hong, Jimyoung Lee, Jongwook Jeon, Kee-Won Kwon</i>	
Enhanced Human Pose Retargeting Through Video Frame Deblurring	227
<i>Sungwook Ahn, Suk-Ju Kang</i>	
Scalable VLSI Architectures for Pattern Matching in Serial Data Stream	231
<i>Byeong Yong Kong</i>	
An Experimental Study of Merkle Tree-Based Security Mechanism for Secure SSD Storages	235
<i>Talha Ahmed, Seokin Hong</i>	
Designing an Optimized Processing Elements Structure for Depthwise Separable Convolution	239
<i>Eunchong Lee, Yumi Kim, Kyungho Kim, Dongyeob Shin, Sung-Joon Jang</i>	
Lightweight Look-Ahead Multi-Context Vision Transformer.....	242
<i>Keunho Byeon, Jeewoo Lim, Jaeung Lee, Chiwon Han, Sungyun Bay, Giho Park, Jin Tae Kwak</i>	
A Compact Linear Phased-Array Antenna for 5G mmWave Applications.....	248
<i>Abdul-Aziz Damba Baba Sulemana, Patrick Danuor, Young-Bae Jung</i>	

Enhancing Inference Performance of a Personalized Driver Assistance System Through LLM Fine-Tuning and Quantization	250
<i>Gihoon Song, Jihun Lim, Cheolmin Jeong, Chang Mook Kang</i>	
Autonomous Vehicle Control Using CARLA Simulator, ROS, and EPS HILS	254
<i>Sangmin Kim, Guntae Kim, Taehun Kim, Cheolmin Jeong, Chang Mook Kang</i>	
Integration of MediaPipe and L2CS-Net for Driver Drowsiness Detection and Gaze Tracking	256
<i>Yang-Jin An, Cheolmin Jeong, Yi-Hyeong Park, Guntae Kim, Chang Mook Kang</i>	
Conditional Point Cloud Generation from Sketch Using Point-Voxel Representation	260
<i>Hye Rim Kim, Byoung Chul Ko</i>	
Remote Heart Rate Estimation from Facial Videos with Balanced Contrastive Learning	263
<i>Dong-Hyuk Lee, Dae Hyeon Kim, Young-Seok Choi</i>	
Burst Raw Frame Based Demosaicing with Partial Differential Equation Based Enhancement	267
<i>Soyeon Ahn, Suk-Ho Lee, Moon Gi Kang</i>	
Design of Decision Tree Inference with DAC-Based Feature Threshold Circuits	270
<i>Woramet Janchum, Thanasin Bunnam, Nachirat Rachburee, Samatachai Jantara, Pitchayapatchaya Srikrum</i>	
Coil Driver Design for High Frequency Magnetic Stimulation Using Nanoparticles	274
<i>Jeonghyun Choi, Hyungeun Kim, Mingu Song, Junte Heo, Yunji Hwang, Sanggeon Park, Yeouwool Huh, Jeiwon Cho, Heonjin Choi, Jinho Jeong</i>	
Linearized Gait Phase Estimation Using BiLSTM	277
<i>Yonghyun Lee, Dongbin Shin, Younghoon Ji, Hyeyoun Jang, Changsoo Han, Yeonjoon Lee</i>	
SP2Mask4D: Efficient 4D Panoptic Segmentation Using Superpoint Transformers	281
<i>Yongseok Park, Duc Dang Trung Tran, Minho Kim, Hyeonseok Kim, Yeejin Lee</i>	
Integrated Noise Reduction and Signal Classification Model for Rescue Operations in Noisy Disaster Scenarios	285
<i>Joonhwi Kim, Jungyu Choi, Jeongin Ju, Seowoo Kim, Sungbin Im</i>	
Banknote Fitness Judgment System Using MemSeg Based on K-Means Memory Update	289
<i>Hui-Jae Bae, Dae-Sik Jung, Byung-Jun Kang</i>	
On an LLM-Based Method to Generate from PoC Codes to IPS/IDS Rules	293
<i>Yudai Yamamoto, Shingo Yamaguchi</i>	
Semantic Image Retrieval Using Scene Graphs and Natural Language Queries	298
<i>Jaehoon Kim, Byoung Chul Ko</i>	
Deadline-Driven CNN Model Based on Residual Quantization	303
<i>Ali Haider Alvi, Yoichi Tomioka, Yuichi Okuyama, Jungpil Shin</i>	
Colpitts-Based Folded Self-Oscillating Mixer	307
<i>Nam-Jin Oh</i>	
Noise-Resistant Sound Source Localization Based on Filter Banks in Disaster Scenarios	309
<i>Jungyu Choi, Eojin Kim, Juseong Kim, Joonhwi Kim, Sungbin Im</i>	
3D Gaussian SLAM with DoG Mapping	313
<i>Eunho Shin, Suk-Ju Kang</i>	

Intuitive Robot Arm Control System Based on HMD Hand Tracking	317
<i>Seung Jun Lee, Tae Hyeong Kim, Hyeong Jin Do, Kyu Dan Jung, Hyun Gon Ryu, Nam Joon Kim</i>	
An Extensible Framework for Hierarchical Dataflow Modeling in Spatial Accelerators.....	321
<i>Dongho Park, Su-Il Choi</i>	
Development of a System for Measuring the Security Performance of Spoof Fingerprint Detection in Access Control Devices with Embedded Biometric Fingerprint Recognition.....	324
<i>Young-Hyun Baek, Jun Myung Lee, Chang Hu Kim</i>	
LW-FastPose: A Lightweight Network for Human Pose Estimation Based on Improvements to FastPose.....	328
<i>Mingxing Cai, Wang-Su Jeon, Sang-Yong Rhee</i>	
Restoring Morphological Features in rPPG Signals Using Generative Adversarial Networks with Time-Frequency Discriminator	333
<i>Mavlonbek Khomidov, Jong-Ha Lee</i>	
Monitoring Semiconductor Residue Deposits Using Graph Neural Networks	337
<i>Minho Jeon, Anil Kumar Khambampati, Keun Joong Yoon, Jong Hyun Song, Seok Jun Ko, Kyung Youn Kim</i>	
Robust Sound Source Localization Using CDR-Based Masking and CNN-Enhanced GCC-PRAT in Reverberant Environments	341
<i>Eojin Kim, Juseong Kim, Jungyu Choi, Joonwhi Kim, Sungbin Im</i>	
Novel 8-Bit IMC Approximate Adders with Advanced Error Mitigation Techniques.....	345
<i>Jinhyun Kim, Youngmin Kim</i>	
Enhancing Robot Navigation Through Advanced DRL and Cellular Automata Integration	349
<i>Ardiansyah Al Farouq, Dinh Tuan Tran, Joo-Ho Lee</i>	
Physical Based IGZO Thin-Film Transistor Compact Model for Process in Memory (PIM) Applications.....	353
<i>Hyounghoo Kim, Jin Ho Park, Jaewoog Jung, Hyunwoo Kim</i>	
SPICE Modeling and Parameter Extraction for Floating-Body Partially-Depleted SOI MOSFETs	357
<i>Wongi Cho, Seonghearn Lee</i>	
Photo-Sensor Based Divider System for Preventing Double Stacking of Conveyed Items Using a Tipper Mechanism.....	359
<i>Jinsoo Kim, Suhong Eom, Jeonmin Kang, Eung Hyuk Lee</i>	
A Study on Automated Tilt Control for a Tipper System Using RGB-D Camera-Based Cargo Detection	363
<i>Jeonmin Kang, Suhong Eom, Jin Soo Kim, Eung Hyuk Lee</i>	
Improving Messenger Phishing Detection Using Heterogeneous Phishing Data	367
<i>Seokjin Oh, Keonwoong Noh, Sunyub Kim, Dohyung An, Woohwan Jung</i>	
Data Augmentation for Messenger Phishing Detection Using Large Language Models.....	370
<i>Keonwoong Noh, Seokjin Oh, Sunyub Kim, Dohyung An, Woohwan Jung</i>	
AG-BiLLM: Activation-Guided Fully Binarized Large Language Models	373
<i>Aeri Kim, Eunhong Lee, Minkyu Lee, Yumi Kim, Sung-Joon Jang</i>	

Defense and Recovery Strategies for Flash-Based Storage Under Ransomware Attacks: A Survey.....	377
<i>Junhong Yin, Kyungtae Kang</i>	
Faster R-CNN in Healthcare and Disease Detection: A Comprehensive Review	381
<i>Jiawei Tian, Seungho Lee, Kyungtae Kang</i>	
Non-Invasive Multichannel Vagus Nerve Stimulator with Heart Rate Measurement for Closed-Loop Control	387
<i>Kiyoung Shin, Young Min Bae, Hyeokjin Kweon</i>	
Received Signal-To-Noise Ratio Evaluation for Hybrid Intelligent Reflecting Array Systems	390
<i>Taehee Choi, Jaehong Kim, Jingon Joung</i>	
How Large Language Models Are Transforming Teachers' Assessment of Student Competency: A Case Study on LLM-Based Report Writing.....	392
<i>Dongyub Lee, Daejung Kim, Martin Loeser, Kyoungwon Seo</i>	
Semi-Supervised Learning for Photovoltaic Cell Defect Detection Using Module and Cell-Level Labels	396
<i>Nayoung Gil, Kyungri Park, Daeyun Jeong, Woohwan Jung</i>	
A Scalable Multi-Hop IoT Network Using ESP-NOW for Remote Zone Monitoring Applications	400
<i>Raihan Uddin, Insoo Koo</i>	
Pest and Scratch Detection on Apple Surface Using TricubeNet	404
<i>Nguyen Bui Ngoc Han, Ju-Hwan Lee, Jin-Young Kim, Hyoung-Gook Kim</i>	
An Off-Chip Capacitive Two-Stage LDO Design with High PSRR	408
<i>Wenju Sheng, Deyang Liao, Haiqiang Zhao, Pei Wang, Kangshan Zhang, Wen Huang, Yinru Miao</i>	
Parasitic Capacitance Prediction for Standard Cells Using Machine Learning and K-Means Clustering Algorithm	413
<i>Jaejun Lee, Soyoung Kim</i>	
Designing Selective Drugs: Multi-Objective Optimization to Mitigate Off-Target Effects	417
<i>Dong-Hee Shin, Young-Han Son, Deok-Joong Lee, Tae-Eui Kam</i>	
FPGA-Based Near-Data Processing Emulation Platform for System-Level Evaluation of DIMM Memory Systems.....	422
<i>Minkyu Lee, Kyungho Kim, Eunchong Lee, Aeri Kim, Sang-Seol Lee</i>	
Accurate 3D Face Reconstruction from Multiple RGBD Images	425
<i>Marcellino Sahadewa, William Gazali, Taehan Kim, In Kyu Park</i>	
Spatio-Temporal Spiking Attention Recurrent Neural Network for EEG-Based Motor Imagery Classification	430
<i>Jin-Gyo Lim, Seong-Eun Kim</i>	
Windowing Method for DFT-Based Frequency Estimation of Multiple Complex Exponential Signals	434
<i>Han-Gyeol Lee, Kanghaeng Lee, Jingon Joung</i>	
Received Signal Strength Interpolation Method for One-Dimensional Movable Antenna Positioning	438
<i>Jaehong Kim, Myeonggi Sung, Jingon Joung</i>	

Hybrid Local-Global GNN for Protein Binding Interface Prediction Via Ensemble Learning	440
<i>Deok-Joong Lee, Dong-Hee Shin, Young-Han Son, Tae-Eui Kam</i>	
LAMP-Q: Layer Sensitivity-Aware Mixed-Precision Quantization for MobileNetV3	444
<i>Seokkyu Yoon, Namjoon Kim, Hyun Kim</i>	
Chromagram Features Analysis for Learning-Based Query by Humming Systems.....	447
<i>Kuan-Yu Chen, Jian-Jiun Ding</i>	
Molecular Optimization with Mamba-Based GFlowNet.....	451
<i>Young-Han Son, Dong-Hee Shin, Deok-Joong Lee, Tae-Eui Kam</i>	
Enhancing Person Re-Identification Using Learnable Vision-Language Contexts and Orthogonal Constraints for Body Parts.....	455
<i>Seunghye Han, Hasil Park, Dasol Jeong, Hyebean Lee, Jiwon Park, Joonki Paik</i>	
Effect of EKF Localization on Path Tracking in Autonomous Vehicle Navigation Systems	459
<i>Eun Ho Cho, Seung Geon Yang, Girim Kwon, Seung-Chan Lim</i>	
Automatic FMU Generator for Automotive Communication Networks Using LIN and CAN Database Files.....	463
<i>Harim Lee, Hyeongrae Kim, Jeonghun Cho</i>	
Random Structured Plasmonic Near-Field Illumination for Enhanced Surface Imaging	465
<i>Sukhyeon Ka, Hajun Yoo, Donghyun Kim</i>	
Optical Frequency-Filtered Surface Plasmon Resonance Microscopy for Improved Image Precision	468
<i>Inseop Byeon, Gwiyeong Moon, Hajun Yoo, Donghyun Kim</i>	
Language-Guided Semantic Alignment for Point Cloud-Based 3D Scene Graph Generation	470
<i>Suhyeon Lee, Jinwoo Jeong, Taehyun Jeong, Sungjei Kim</i>	
A 17mV Load Transient, Highly Efficient Low Ripple Split-Inductor Based Buck Converter Using Novel Ramp Generation Technique.....	473
<i>Jaldu Asish, Megha Ts, N Laqueta, Harshitha Gr, Rashmi Seethur</i>	
A Study on a Personalized Robot Golf Trainer System with Multi-Persona and Ethical Guidelines for Robots	479
<i>Younglim Choi, Bojeong Park, Jongwoo Kim, Seoyeong Mun, Hyunseok Kim</i>	
RespireSegNet: Analyzing Sleep Breathing Patterns with Deep Audio Segmentation	483
<i>Yunu Kim, Jaemyung Shin, Minsam Ko</i>	
Improving Error Metrics in Approximate Multipliers with an Error Recovery Unit.....	488
<i>Jongmin Jeon, Youngmin Kim</i>	
Exploration of Diffusion-Based Test Case Generation of Autonomous Driving Systems.....	492
<i>Joonwoo Lee, Scott Uk-Jin Lee</i>	
A Pulse Width Modulation-Based Spike Generator to Eliminate Timing Errors in Spiking Neural Networks	495
<i>Jungkook Jo, Keonhee Sim, Sangwoong Sim, Jaehoon Jun</i>	
A System Design for 3D Visualization of Underwater Multi-Target Tracking Based on Unity 3D and GMPHD Filter	498
<i>Seungho Kim, Scott Uk-Jin Lee</i>	

Adoption of Generative AI and Large Language Models in Education: A Short Review	501
<i>Imran Zuolkernan</i>	
A High Gain 0.0831 μ V/mA Load Regulated Capacitorless LDO with Fast Loop and Nested Miller Compensation (NMC)	506
<i>Jayalaxmi Kiran Mukre, Jhanavi Kodethoor, Meghna Prakash, P Anurup, Rashmi Seethur</i>	
Optimized Distance Calculation Support for HBM PIM(Processing-In-Memory)	511
<i>Nahyeon Kim, Sujin Kim, Haechannuri Noh, Min Jung, Huijin Roh, Ji-Hoon Kim</i>	
A Study on the Evaluation of Cyber Security Vulnerabilities in Medical Software	514
<i>Jeong-Hyun Woo, Jee-Hyun Koo, Byung-Suk Seo, Sun-Young Son, Kwang-Man Ko</i>	
Enhancing Autonomous Driving with Pre-Trained Imitation and Reinforcement Learning	518
<i>Jeong-Hwan Choi, Dong-Han Kim, Ji-Sang Yoo, Beom-Joon Kim, Jun-Tae Hwang</i>	
Efficient Monocular Depth Estimation with Cost-Effective 2D LiDAR Integration for Mobile Robots.....	521
<i>Hyunwoo Rim, Jinyeob Kim, Daewon Kwak, Donghan Kim</i>	
Enhancing Collaborative Filtering Algorithm Based on Time Information.....	525
<i>Chunanda Khlaithong, Pasapitch Chujai Michel</i>	
A Study of Emotional Expression Interface for Wheeled Mobile Robot to Enhance Emotional Bonding	531
<i>Seoyeong Mun, Bojeong Park, Jongwoo Kim, Younglim Choi, Hyunseok Kim</i>	
GolfPoseNet: Golf-Specific 3D Human Pose Estimation Network.....	535
<i>Bojeong Park, Jongwoo Kim, Seoyeong Mun, Younglim Choi, Hyunseok Kim</i>	
An Efficient Graphics Data Retrieval Method Based on Data Conversion Schemes	539
<i>Nakhon Baek</i>	
Matched Filter Based 3-Dimensional Near-Field Compensation for Coherent Sensing with Radars	543
<i>Wanji Cho, Jeong-Hoon Park, Doyoung Ham, Seong-Cheol Kim</i>	
Posture Recognition-Based Robot Control Using Media Pipe Pose.....	547
<i>Jong Woo Kim, Seo Yeong Mun, Bojeong Park, Younglim Choi, Hyunseok Kim</i>	
A Proposal of ActiveBDS: System to Disable C&C Server of Malicious Botnets by White-Hat Botnets.....	550
<i>Aoi Fukushima, Yudai Yamamoto, Shingo Yamaguchi</i>	
HaT: Holding Oscillation for Efficient INT8 Quantized CNN Training	555
<i>Chanyung Kim, Dongyeob Shin, Minkyu Lee, Sung-Joon Jang, Sang-Seol Lee</i>	
NCR-Enabled Digital Twin Based EV Fire Prevention System Development.....	559
<i>Hyunseok Noh, Jewoo Go, Wonjin Sung, Jae Chan Choi</i>	
Single Ultra-Wideband Anchor Based Blind Spot Pedestrian Localization in a Moving Vehicle	565
<i>Ohgeun Jee, Junghun Choi, Doyoung Ham, Check Kim, Seong-Cheol Kim</i>	
An Implementation of a DSP-Based PAM-4 Digital Equalizer with 32-Way TI-ADC	569
<i>Sang-Hyeon Ok, Dong-Hoe Heo, Jae-Geon Lee, Seung-Mo Jin, Kwang-Ho Lee, Daniel Jeong, Min-Seong Choo</i>	

FPGA Based Approximate Vector Operation Accelerator for VLMs	573
<i>Raehyeong Kim, Chaebin Lee, Dayoung Lee, Yue Ri Jeong, Seung Eun Lee</i>	
C4ECC: Data Compression for Bandwidth Efficiency Under ECC Protection in GPUs	576
<i>Sanghyun Park, Boyeol Choi, Jung-rae Kim</i>	
Soft-Start Header Power Gating for Inrush Alleviated Current Profile	580
<i>Vijay Pratap Yadav, Vipin Kumar Singh, Tika Ram Pokhrel, Abir Jyoti Mandal, Sanjeev Kumar Metya, Alak Majumder</i>	
A Multi-Resolution Mode Energy and Area Efficient All Digital Smart Temperature Sensor	585
<i>Kuntal Chakraborty, Alak Majumder, Abir J Mondal</i>	
An Optimized Edge Platform for 3D Object Detection in Autonomous Driving	589
<i>Kwonseung Bok, Yumi Kim, Aeri Kim, Sang-Seol Lee, Kyungho Kim</i>	
ROSE: Reliability-Optimized OD-ECC and S-ECC Enhancements for HBM3	592
<i>Jaeho Shin, Jung-rae Kim</i>	
Vector Similarity Search Acceleration Using DRAM-Based Processing-In-Memory (PIM)	596
<i>Min Jung, Sujin Kim, Haechannuri Noh, Huijin Roh, Nahyeon Kim, Ji-Hoon Kim</i>	
Single Microphone Speech Denoising Using Wavelet Thresholding and RLS Algorithm	600
<i>Yashar Naderahmadian, Seyed Ghorshi, Issa Panahi</i>	
An Intelligent Chatbot for Supporting Teachers and Learners Interaction Through Deep Learning	604
<i>Pitchayamat Raksachart, Pakpoom Chansri, Pasapitch Chujai Michel</i>	
Enhancing AR/VR Experiences with a Pinch-Gesture Multi-Layer Virtual Keyboard System	609
<i>Donggyu Kim, Viduranga Munasinghe, Tae-Ho Lee, Hyun-Jun Jin, Tae Sung Kim, Jin-Sung Kim, Hyuk-Jae Lee</i>	
Two-Dimensional Calibration Method for Enhancing Sensor Accuracy Using Multiple Progressive Polynomial	612
<i>Jaelim Lee, Dongsun Kim</i>	
Segmentation and Recognition of Japanese Sign Language Syllables Using Frame Clustering in Video	616
<i>Tamon Kondo, Ryota Murai, Yousun Kang</i>	
Point-Supervised Temporal Localization for Sign Language Recognition Using Hierarchical Reliability Propagation	620
<i>Ryota Murai, Tamon Kondo, Yousun Kang</i>	
Hardware Assisted Low Latency NPU Virtualization Using Data Prefetching Techniques	624
<i>Jong-Hwan Jean, Dong-Sun Kim</i>	
Realistic Virtual Try-On with Multi-Loss Geometric Alignment and Attention-Augmented Image Synthesis	628
<i>Hyebeon Lee, Dasol Jeong, Seunghee Han, Jiwon Park, Joonki Paik</i>	
A Time-Domain Analysis, Modeling and Optimization of Analog Amplitude-Modulated Multi-Tone Serial Data Transceivers	632
<i>Donggeon Kim, Seongjin Kim, Gain Kim</i>	
On the Notion of Complete Quality Preserving in Data Hiding	638
<i>Dhaval Variya, Nathan Cheong Yuen Kiat, Simying Ong, Koksheik Wong</i>	

Leveraging Web Technologies for Enhanced Customer Satisfaction Data in Public Health: A Case Study of a Digital Solution	642
<i>Emanuel Gloria, Ken Diaz, Viel Aurea Celis, Gabriel Avelino Sampedro</i>	
EloMetrics: Advanced Outcome Prediction for Chess Matches with Elo Ratings and Logistic Regression	645
<i>Ma. Julianna Re-An Dg. Reyes, Eirnan Dicreto, Emmanuel Gabriel D. Santos, Daniella Franxene P. Limbag, Gabriel Avelino Sampedro</i>	
Noise-Resilient Pupil Segmentation in VNG Using RANSAC-Enhanced U-Net for Improved BPPV Diagnosis	649
<i>Han Ju-Hyuck, Lee Hea-In, Jung Dong-Kwon, Lee Han-Jo, Kim Woong-Sik</i>	
Performance Using Fewer EEG Electrodes Through Brain Region-Specific Approaches	653
<i>Kim Youn-Sang, Lee Han-Jo, Kim Woong-Sik</i>	
Video Person Re-Identification with Memory Network and Orthogonal Projection.....	657
<i>Kyungseok Kim, Injae Lee, Haejun Cho, Seunghee Han, Joonki Paik</i>	
Homomorphic Encryption and Decryption Hardware Design Using Shared Arithmetic and Configurable Butterfly Unit	661
<i>Seung-Chan Kim, Dong-Sun Kim</i>	
A Pattern Reconfigurable Antenna for 5G FR2 Band Applications.....	666
<i>Ahmed N. D. Tetteh, Baba Sulemana Abdul-Aziz Damba, Jung-Ick Moon, Jung-Nam Lee, Young-Bae Jung</i>	
Design of Reflect-Array for 6G Sensing and Communications	668
<i>Gyeong-Deok Ju, Myeong-Jun Oh, Yong-Myeong Kim, Kapseok Chang, Yongsun Kim, Young-Bae Jung</i>	

Author Index