ITC-CSCC 2024
Tentative Technical Program (June 26, 2024)

Day 2
July 3, 2024

SS-2 Advanced Data Storage Technology, Interdisciplinary and Emerging Topics

Date: July 3, 2024, Time: Wednesday 09:00-10:20

Location: R2 MTG Room 1

Chair: Kittipon Kankhunthod (King Mongkut's Institute of Technology Ladkrabang)

1. Transient Thermal-Electric Analysis of Peltier Cooling Plate for a Mini Refrigerator

Chatchapat Chaiaiad and Jatuporn Thongsri

2. An MLP-based Equalization for Bit-Patterned Magnetic Recording Systems

Sarun Nakthanom, Santi Koonkarnkhai and Piya Kovintavewat

3. Sram-Based In-Memory Computing Circuit Design for Matrix Linear Transformation

Weiqing Lu, Yu Jin, Duli Yu, Zheyu Cui, Wenzhe Ye, Xinmin Yuan and Wenhao Ye

4. Development of a Small Ultrasonic Cleaning Bath based on Harmonic Response Analysis

Warakorn Worradechaudom and Jatuporn Thongsri

IPV-1 Image processing and Vision

Date: July 3, 2024, Time: Wednesday 09:00-10:20

Location: R3 Seminar Room B250

Chair: Shogo Muramatsu (Niigata University)

1. Automatic Drone Patrol of Parking Lots Using YOLO and MiDaS Neural Networks

Haimin Yan, Xiangbo Kong, Hiroki Nishikawa and Hiroyuki Tomiyama

2. Indoor 3D Mapping of a University Building with Tablet LiDAR for Drone Flight Simulation

Pinwen Wang, Xiangbo Kong, Norikazu Hayashi, Mei Jiang, Noriyoshi Kiuchi and Hiroyuki Tomiyama

3. Efficient Deraining model using Transformer and Kernel Basis Attention for UAVs

Yuto Tomida, Takafumi Katayama, Tian Song and Takashi Shimamoto

4. Obstacle Avoidance using Monocular Depth Estimation for Small Drone Tello

Genki Higashiuchi, Hiroki Nishikawa, Xiangbo Kong and Hiroyuki Tomiyama

COMP-2 Computers

Date: July 3, 2024, Time: Wednesday 09:00-10:20

Location: R4 Seminar Room C210

Chair:

1. Randomness Assessments for PDL-based TRNG on FPGA

Hoyoung Yoo, Heehun Yang and Jiho Park

2. Mixed-rule Cellular Automata: Analysis of Binary Periodic Orbits and FPGA based Implementation

Kazuma Matsushita and Toshimichi Saito

3. Design of an Efficient PRPG for Testing an Approximate Multiplier Using Truncation

Daichi Akamatsu, Hiroyuki Yotsuyanagi and Masaki Hashizume

4. Diagnosis of Double Faults Consisting of a Stuck-at Fault and a Transition Fault

Yoshinobu Higami, Tsutomu Inamoto, Senling Wang, Hiroshi Takahashi and Kewal Saluja

ML-1 Machine Learning

Date: July 3, 2024, Time: Wednesday 09:00-10:20

Location: R5 MTG Room 2

Chair: Lunchakorn Wuttisittikulkij (Chulalongkorn University)

1. A Generative Adversarial Network-Based Approach for Reflective-Metasurface Unit-Cell Synthesis in mmWave Bands

Panithan La-Aiddee, Paramin Sangwongngam, Lunchakorn Wuttisittikulkij and Pisit Vanichchanunt

2. Efficiency of Decision Tree Depth to Diagnose Mathematical Procedures in Number and Algebra for Seventh-grade Students

Thanyalak Thiannoi, Putcharee Junpeng and Thanapong Intharah

3. Efficiency of Predicting Student Mathematical Proficiency Levels in Open-Ended Questions of Statistics and Probability Strand through Machine Learning

Phenjarat Paenpa, Putcharee Junpeng and Thanapong Intharaht

4. Effects of Gabor filters on classification performance of CNNs trained on data with a limited number of conditions

Akito Morita and Hirotsugu Okuno

5. Graph Convolutional Network-based Sports Skill-level Recognition via Deep Metric Learning

Tatsuki Seino, Naoki Saito, Takahiro Ogawa, Satoshi Asamizu and Miki Haseyama

SS-8-I Innovative Applications of Artificial Intelligence (I2AI)

Date: July 3, 2024, Time: Wednesday 13:30-15:10

Location: R1 Auditorium

Chair: Sakorn Mekruksavanich (University of Phayao)

1. An Empirical Study on Application of Deep Knowledge Tracing in Korean Private Academies

Jaeyeon Kim, Dahyun Ko, Manhee Jo, Sun Kwon Kim, Sukyong Cho and Kijin Bang

2. Design of Prototype Armor Vehicle Tracking System via LoRaWAN Platform for Tactical Operations

Vitawat Sittakul, Saharat Sinrungtham, Anurak Wongprachan and Chana Jan Im

3. Depression screening with PHQ-9 combined with facial emotion analysis.

Yupin Suppakhun, Noppadon Boonkuson and Nopphagaw Thongbai

4. Robust Object Detection Using Depth from Monocular Camera for Feature Common Representation

Hyunmin Kong and Jitae Shin

SS-1-I IoT Innovations and Applications

Date: July 3, 2024, Time: Wednesday 13:30-15:10

Location: R2 MTG Room 1

Chair: Tanakorn Inthasuth (Rajamangala University of Technology Srivijaya), Thittaporn Ganokratanaa (King Mongkut's University of Technology Thonburi)

1. Design and Application of CO2 Sensor Systems for Enhanced Indoor Air Quality Management

Moe Abe and Koichiro Tanaka

2. Correlation Analysis of IoT-Based Sensors for Room Monitoring System

Khankrit Meekaew, Phatsaporn Rattanachai, Nanticha Nounlaaong, Tanakorn Inthasuth and Robithoh Annur

3. Internet of Things Sensor Placement: Impacts on Energy Management System Data Integrity

Chatchon Pliaodee, Pichamon Madsahi, Kanyanat Songsan, Tanakorn Inthasuth, Wasana Boonsong and Chanthan Hel

4. Edge Computing-Enhanced Smart Farming: Optimizing the Entire Lifecycle of Andrographis Paniculata Cultivation

Montri Phothisonothai, Korawit Orkphol, Taddaow Khumpook, Warayost Lamaisri and Uthane Supatti

5. Hierarchical KNN for Smartphone-based 3D Indoor Positioning

Farid Yuli Martin Adiyatma, Samita Sunimit, Thanwa Chokporntaveesuk, Krittima Lualum, Naphat Chaisang and Panarat Cherntanomwong

SS-4-I Mathematical Systems Science and its Applications

Date: July 3, 2024, Time: Wednesday 13:30-15:10

Location: R3 Seminar Room B250

Chair: Shingo Yamaguchi (Yamaguchi University)

1. A stochastic programming model of the recycling process considering uncertainty due to processing problems

Yusei Suzuki, Masaya Kai, Kazutoshi Sakakibara, Ryo Takano, Takuya Matsumoto and Masaki Nakamura

2. Maximum Firing Count of Transitions in Acyclic Sound Dissynchnonous Choice Workflow Net

Atsushi Ohta

3. Formal Verification of Autonomous Vehicle Group Control Systems by the OTS/CafeOBJ method

Yifan Wang, Masaki Nakamura and Kazutoshi Sakakibara

4. Graph Convolutional Networks for Deciding Acupoints in Acupuncture and Moxibustion Treatment

Hang Yang, Ren Wu, Mitsuru Nakata and Qi-Wei Ge

5. Event-Triggered Model Predictive Control of Distributed Network Systems with Switching Topology

Masaki Yanai, Koichi Kobayashi and Yuh Yamashita

SS-13-I AI in Education: Transforming Pedagogical Paradigms through Technological Innovation

Date: July 3, 2024, Time: Wednesday 13:30-15:10

Location: R4 Seminar Room C210

Chair: Putcharee Junpeng (Khon Kaen University)

1. The Development of Creative Writing Achievements for Seventh-grade Students by Flipped Classroom Learning in Thai Language Subject through Google Classroom

Kantida Bunsoem and Sakaoduen Satham

2. Effect of Constructivist Web-Based Learning Environment to Enhance Learning's Problem-solving in Mathematics on Conic section

Sirirat In-Im and Sumalee Chaijaroen

3. Developing Chinese Language Speaking Skills through Virtual Project-Based Learning of Thai Undergraduate Students in the Major of Teaching Chinese as a Foreign Language, Khon Kaen University, Thailand

Narueporn Wuttiphan

4. Diagnosing Mathematical Procedures in Number and Algebra Strand of 7th Students using the Machine Learning Platform for Khon Kaen University demonstration secondary school (Suksasart)

Mongkhol Prasertsang, Metta Marwiang and Putcharee Junpeng

5. Diagnosing Mathematical Procedures in Measurement and Geometry of 7th Grade Students Through Machine Learning Platform for Demonstration School of Khon Kaen University, Thailand, Secondary Section (Mor Din Daeng)

Prapawadee Suwannatrai, Samruan Chinjunthuk, Jiraprapa Chaiyawut and Putcharee Junpeng

Poster I Poster I

Date: July 3, 2024, Time: Wednesday 13:30-15:10

Location: R6 Tunnel (Poster)

Chair:

1. A Variety of Periodic Orbits in Digital Maps Based on Simple One-Dimensional Analog Maps

Hosei Yamaguchi and Toshimichi Saito

2. A Bi-directional NTT/INTT Hardware for Lattice-Based Post-Quantum Cryptography Algorithms

Jin Young Choi and Jongmin Lee

3. Signal Features Compression for Signal Classification

Muhammad Taqiyuddin, Yuhei Nagao, Masayuki Kurosaki and Hiroshi Ochi

4. A Decision Feedback Equalizer with Stochastically Relieved Timing Constraints

Garam Cha, Seung Park and Jung-Hoon Chun

5. Multivariate and Multistep Forecasting of System Marginal Price Using a Modified WaveNet

Jaeyun Jung, Minkyu Lee, Daegun Ko, Jeonghoon Choi, Hyeseung Han, Bumsu Park, Nayeon Park, Kyoungjoo Kim, Hyunsup Kim and Sungkyu Kim

6. Fully Integrated Three Level Step Down Voltage Regulator with 80.7% Peak Efficiency Using on Chip Bond-Wire Inductor for IoT Applications

Jeong Seop Lee, Jehoon Youn, Seung Wan Yoo, Sang Hyun Lee, Sung Jae Lee and Kang-Yoon Lee

7. Enhanced Visual Inspection for Multiple Pill Samples Using Video Frame Interpolation Augmentation of Single Dataset

Seung-Hwan Lee, Dong-Min Son and Sung-Hak Lee

8. High Efficiency 10W GaN Power Amplifier for Ku-band Satellite and Radar Applications

Younsub Noh and Youngwan Lee

9. A CMOS Inverter-based Active-Feedback CMOS Transimpedance Amplifier

Somi Park, Sunkyung Lee, Bobin Seo, Yejin Choi, Yunji Song, Yeojin Chon, Shinhae Choi and Sung Min Park

10. A Deep Reinforcement Learning-Based Decoupling Capacitor Selection Algorithm for PCB Power Delivery Network with Multiple Loads

Kihun Ok, Jaeyoung Shin and Soyoung Kim

11. Comparison of The Ocular Redness Index Algorithms to Classify Dry Eye Disease: The Preliminary Study

Hyunseon Yu, Donghwan Ko and Byungjo Jung

12. Grinding Ratio Monitoring Method for SiC Wafer Grinding Process

Huang Cheng-Sheng and Liu Yu-Chi

13. 55.8 GOPS / W Binarized Neural Networks Implemented on FPGA for Classifying Current Information in IoT Device

Geon-Hoe Kim, Dong-Gyun Kim, Da-Yeong An, Sung-Jae Lee, Ju-Won Oh, Young-Gun Pu and Kang-Yoon Lee

14. Analysis of Delay Times in Feed-forward Source-coupled Logic

Ryo Miyazawa and Kiyoshi Ishii

15. CycleGAN-Based Multi-exposed Image Translation for Multi-Image fusion(ITC-CSCC 2024)

Go Young-Ho, Lee Seung-Hwan and Lee Sung-Hak

16. Comprehensive Analysis of NAND Flash Memory Interfaces and Power Consumption Optimization Strategies

Junha Lee, Dongho Shin, Joonyoung Kim and Kangyoon Lee

17. Simulation Study of Effective Mass Dependent of Electrical Properties in Zinc Tin Oxide Thin-Film Transistors Handling with Bias-Stability Issues

Junhao Feng, Se Jin Park and Jin-Hyuk Bae

18. Autonomous Mobile Robot for Acquiring Facial Images in Indoor Environments

Kotaro Ono, Masato Furuno, Asahi Yoshimura, Yoshihiro Yasutake and Sunao Sawada

19. Enhancing GROBID Performance for Japanese Academic Literature: Construction and Evaluation of a New Dataset

Yuga Umezawa and Marie Katsurai

20. Doherty Power Amplifier with a compact Transformer-Based and Power Back-off efficiency enhancement in 65nm CMOS for WLAN Applications

Ryuji Oka, Ryoichi Miyauchi, Tatsuji Matsuura and Akira Hyogo

21. Development of a Wearable Device for Stress Index Using Photoplethysmography Signal Analysis

Shinhye Kim and Donghwan Hwang

22. Implementation of Wafer Alignment System using FPGA

Jaehyuk So and Minjoon Kim

23. Predicting Length of Stay in the Intensive Care Unit in Sepsis Patient Using Novel Deep Learning

Jeesu Kim, Geun-Hyeong Kim, Kihun Kim, Seungmin Lee, Yujin Yi and Seung Park

24. A Design of Low-Power Digital Calibration Algorithm for ADC with Reduced Area for IoT Applications

Hyejin Kim, Hyehyun Lee and Kangyoon Lee

25. Complex-Logic-Gate-Aware Placement; Optimizing EEQ Cell Selection and Pin-to-Pin Routing in Advanced Semiconductor Designs

Heeyeon Kim and Yoonmyung Lee

26. A Study on Long-Term Time Series Forecasting Performance Comparison of Lithium-ion Battery Voltage in PV ESS

Jinwon Park, Changwoo Kim and Hyosub Choi

27. Markovian Stroke Thickness Variation Augmentation for Binarized Character Recognition

Chae-Ho Park and Kang-Sun Choi

28. Dual-band Bandpass Filter using Hairpin and Tri-section Stepped impedance resonator technique

Fahad Tayeh, Natchami Luemoh and Apirada Namsang

29. Detection and Restoration of Tampered Image Using Deep Image Watermarking

Hirokazu Umekubo and Shigeo Wada

30. Dependence of Threshold Values for Interconnect Testing with Relaxation Oscillators on Unit-to-unit Variations of ICs

Yuya Yamahashi, Masao Ohmatsu, Hiroyuki Yotsuyanagi, Shyue-Kung Lu and Masaki Hashizume

31. Fabrication of SiOx/C composite material with uniform distribution of SiOx and graphene quantum dots as a secondary battery anode for semiconductor devices

Minkyoung Na, Hyunhee Jung and Sung Won Hwang

32. Developing Weight Coefficients for Reinforcement Learning Agents with AHP Module in OODA Loop-Based Decision Support for Disaster Response

Toshio Miyazawa

33. A study on the robustness of convolutional neural network and vision transformer according to data augmentation method of spectrogram image for speech emotion recognition

Jeong-Yoon Kim and Seung-Ho Lee

34. Performance Evaluation of Bibliographic Information Extraction from PDF Documents in a Specific Scientific Domain

Kazuhiro Yamauchi, Yuga Umezawa and Marie Katsurai

35. Distance Metrics for Glycan Trees with Various Types of Linkages

Taisei Matsuo, Kiyoko Kinoshita, Norihiko Shinomiya and Kento Totsuka

36. SegmentKV: An LSM Tree Efficiently Managing Cold Keys Using KVSSD

Donguk Kim and Jae W. Lee

37. Difficulty Prediction for Technology Blog Posts in Recommendation Systems

Kota Shimosaka and Marie Katsurai

38. Improved slew-rate, high GBW two-stage op-amp with additional AC path

Hee Hyun Yang, Shieun Chung, Hye Joo Bae, Yujin Lee, Shinhae Choi, Yeojin Chon and

Sung Min Park

39. Lightweight Facial Expression Recognition Model with MobileViT and Convolutional Block Attention

Phuc Phan Hong, Dat Vo Minh, Anh Dinh The, Thinh Nguyen Le Quang and Hoang Ngoc Tran

40. Deciphering Hand Arthritis: A Machine Learning Approach with Quantitative SPECT-CT Analysis

Hwa Ah Ni Lee, Eun Kyung Park and Geun-Hyeong Kim

SS-8-II Innovative Applications of Artificial Intelligence (I2AI)

Date: July 3, 2024, Time: Wednesday 15:30-17:10

Location: R1 Auditorium

Chair: Sakorn Mekruksavanich (University of Phayao)

1. Enhancing University Safety through AI-Powered Speed Detection

Wanida Kanarkard, Wiroj Taweepworadej and Kitt Tientanopajai

2. FACIAL EXPRESSION CLASSIFICATION FOR ONLINE INTERVIEW USING CONVOLUTIONAL NEURAL NETWORK

Trairat Sabaichai, Datchakorn Tancharoen and Sitapa Watcharapinchai

3. U-GMo: Individual Clip Detection from a Graduation Ceremony Video

Natee Treesoonrat, Nunnapat Kriengchaiyaprug, Thanakann Upadhayawong, Warinya Lohapongpan, Rathachai Chawuthai and Panarat Cherntanomwong

4. Gym Exercise Recognition Using Deep Convolutional and LSTM Neural Network based on IMU Sensor Data

Sakorn Mekruksavanich and Anuchit Jitpattanakul

5. Proposal and evaluation of search methods in Connect6

Yuto Nishii and Hisayasu Kuroda

SS-1-II IoT Innovations and Applications

Date: July 3, 2024, Time: Wednesday 15:30-17:10

Location: R2 MTG Room 1

Chair: Tanakorn Inthasuth (Rajamangala University of Technology Srivijaya), Thittaporn Ganokratanaa (King Mongkut's University of Technology Thonburi)

1. Performance Testbed in IoT Network based on ZigBee and NB-IoT Technologies

Tanakorn Inthasuth, Watthanakorn Choterungrote, Chatdhanai Bandasak, Thanawut Banboon and Ngoc Thien Le

2. Development of Dual-Function Environment Control System for Grey Oyster Mushroom Greenhouse Applying Smart Farm Technology

Krisana Yodnil, Arkira Sonthitham and Chanyaphat Jaruwatcharaset

3. Enhancing IoT System Efficiency through Integration with OpenAI: An ESP32-based Proxy Device Approach

Porkom Charoensawat, Tanakorn Inthasuth, Alhusein Almahjoub and Muhammad Saadi

4. An approach for Offloading Divisible Tasks Using Double Deep Reinforcement Learning in Mobile Edge Computing Environment

Joelle Kabdjou and Norihiko Shinomiya

5. Tracking Data Faults in an IoT-Based PM2.5 Monitoring System Using Time Series Data: A Case Study in Songkhla Municipality, Thailand

Thanetphon Chatasa, Porkom Charoensawat, Nontawat Nakkliang, Tanakorn Inthasuth, Natapon Kaewthong and Wasana Boonsong

SS-4-II Mathematical Systems Science and its Applications

Date: July 3, 2024, Time: Wednesday 15:30-17:10

Location: R3 Seminar Room B250

Chair: Kenji Sawada (The University of Electro-Communications)

1. Bridge-Rhombus Transformation to Solve Partitioning Problem in Telecommunications Network

Masahiro Hayashi

2. BDSsim: A Mesa-based Simulator for Botnet Defense System

Shingo Yamaguchi

3. Development of a traffic accident prediction system using formal concept analysis and machine learning

Tomoya Asai, Masaki Nakamura, Kazutoshi Sakakibara, Tatsuo Motoyoshi, Takuya Matsumoto, Ryo Takano and Keisuke Hoshikawa

4. Data-driven path-following control considering motion sickness

Shusaku Fujita and Kenji Sawada

5. Shape-Dependent Velocity Based Droplet Routing Considering Droplet Separation on MEDA Biochips

Yuta Hamachiyo, Kaito Mori, Tomohisa Kawakami, Chiharu Shiro, Hiroki Nishikawa, Hiroyuki Tomiyama and Shigeru Yamashita

SS-13-II AI in Education: Transforming Pedagogical Paradigms through Technological Innovation

Date: July 3, 2024, Time: Wednesday 15:30-17:10

Location: R4 Seminar Room C210

Chair: Putcharee Junpeng (Khon Kaen University)

1. Utilizing Decision Tree Analysis for Optimizing Test Item Selection in the Development of Mathematical Procedures in Measurements and Geometry

Natchaya Panphet, Putcharee Junpeng and Thanapong Intharah

2. Developing a Diagnostic Framework for Teachers' Learning Management Competencies in Independent Study Courses through a Digital Platform at International Standard Schools

Wanicha Prayoonpun, Arunchaya Rugsapun and Putcharee Junpeng

3. Enhancing Chinese Language Writing Skill through Virtual Process-Based Writing Approach of Thai Undergraduate Students, Thailand

Narueporn Wuttiphan

4. Diagnosing Structure of Observed Learning Outcomes in Measurement and Geometry for Gifted Students of 7th Grade through Machine Learning Platform, KhonKaenWittayayon school, Thailand

Duanpen Thampitak and Putcharee Junpeng

5. Adaptive Diagnostics for Customized Learning Pathways of Students in the Mathematical Structure of Observed Learning Outcomes: A Supervised Machine Learning Classification Algorithm

Putcharee Junpeng

Poster II Poster II

Date: July 3, 2024, Time: Wednesday 15:30-17:10

Location: R6 Tunnel (Poster)

Chair:

1. Few-Shot Learning for Respiratory Sound Classification using Limited Data

Ida Ayu Putu Ari Crisdayanti and Seong-Eun Kim

2. An Analysis of the Typeface Used in Ancient Korea

Dongkeun Kim and Kang-Sun Choi

3. A Proposal of Capture Preventing System “Image Ban” for Public Online Services

Hiroko Yamabe, Souta Yamataka and Takeshi Kumaki

4. A Study on the Analysis of Incident Events while Automated Driving through the Data Connection System

Dong-Whan Lee, Tae-Lim Kim, Jae-Ung Choi and Seong-Jin Kwon

5. Advancing the Frontiers of Object Detection: A Comparative Analysis of YOLOv9, YOLOv8, and YOLOv7 on the VisDrone-DET2019 Dataset

Dat Vo Minh, Phuc Phan Hong, Anh Dinh The, Thinh Nguyen Le Quang and Hoang Ngoc Tran

6. A Design of Single-ended Second-order Noise-shaping Sigma-delta ADC for Condition Monitoring of Electric Motors in Vehicles

Hojin Kwark, Yeonghun Kim and Kangyoon Lee

15. Evaluate The Efficacy of Attention Mechanisms in Face Anti-Spoofing With an Explainable AI Approach

Thinh Nguyen Le Quang, Dat Vo Minh, Anh Dinh The, Phuc Phan Hong and Hoang Ngoc Tran

16. Evaluating approximation algorithms for the degree constrained minimum spanning tree problem

Hiroto Obayashi, Masahiro Yamauchi and Daisuke Takafuji

17. Implementation of Doppler Radar Module for Human Monitoring

Eugin Hyun, Ji-Eun Bae, Youngseok Jin and Park Chi-Ho

18. C3DFD: A Clustered 3D Force-Directed Partitioning Algorithm for Monolithic 3D IC

Doojin Hong and Yoonmyung Lee

19. A High-Gain, Low-Power CMOS Inverter Transimpedance Amplifier

Minjeong Kim, Jimin Oh, Yujin Lee, Seungyun Phee, Yunji Song, Yejin Choi and Sung Min Park

20. Design of a CMOS Three-Stage Inverter Transimpedance Amplifier with Dynamic Resistance Control Using PMOS Transistors

Soobin Jung, Minah Lee, Dayeon Chung, Yunji Song, Yejin Choi and Sung Min Park

21. Wide Load Range LDO Applied Current-Amplified Miller Compensation

Woo-suk Choi, Yeong-Hun Kim and Kang-Yoon Lee

22. Study of Low-Frequency LPF Using Lossy FDNR Realized with CCII

Fujihiko Matsumoto, Takashi Nishi and Koki Kihara

23. A Study on the Quantification of Battery Safety Status in Photovoltaic Energy Storage Systems through a Fuzzy Logic Approach

Taeil Yun, Changwoo Kim and Hyosub Choi

24. Innovative Low-Cost Visual Aid Device with AI Integration for Addressing Visual Impairment in Low-Income Communities

Kanjanapan Sukvichai, Tanapon Kitmuti and Noppanut Thongton

25. Design of a Two-Stage Operational Amplifier

Yunseo Bae, Dokyeong Kim, Gyuyeon Kim, Sojeong Lim, Yeojin Chon, Shinhae Choi and Sung Min Park

26. Estimation of Channel Parameters Based on Time Diversity Over Fading Channels

Wen-Long Chin, Wen-Chao Wu, Tzu-Jui Huang, and Chi Wei

27. A CMOS Dual-Feedback Inverter Transimpedance Amplifier

Bobin Seo, Sunkyung Lee, Somi Park, Shinhae Choi, Yeojin Chon and Sung Min Park

28. An X-band CMOS low noise amplifier with a three-coil transformer based gm-boosted input stage and staggered-peak technique

Zhengyang Li, Youming Zhang, Zhennan Wei, Xusheng Tang and Fengyi Huang

29. A Novel Analytical Framework of Fluid Antenna System for 6G Wireless Networks

Ye Rim Lee, Juyeong Baek, Jong Min Kim, Bang Chul Jung and Jeong Seon Yeom

30. An Masking-free ECC-less SRAM PUF with Sorted Reconfiguration through Current-Bias Tilting

Hyeri Kang, Jaerok Kim, Doojin Hong and Yoonmyung Lee

31. Music Familiarity Modulates Steady-State Evoked Potentials During Music Listening and Recall

Mayu Goto, Ingon Chanpornpakdi, Kazuki Matsunaga, Shuma Ito and Toshihisa Tanaka

32. 56-Gb/s PAM-4 and PAM-6 DAC-based Transmitter with Timing Skew-less DAC in 28nm CMOS

Hyeonmin Kim and Junghoon Chun

33. Adaptive Time-Based Feedforward Equalizer in the Transmitter for the Next-Generation Memory Interfaces

Chan-Ho Kye

34. Robust Invisible QR Code Watermarking Based on Deep Learning

Kazuhiro Terada, Hirokazu Umekubo and Shigeo Wada

35. Class Allocation in Low Dimensional Latent Feature Space for Image Classification

Juki Sugano and Shigeo Wada

36. A linear inverter-based transimpedance amplifier in 180-nm CMOS

Chaeyoung Oh, Eunjae Ko, Yeonwoo Moon, Yujin Ra, Yunji Song, Yejin Choi and Sung Min Park

37. Improving Performance of 8-bit SAR ADC: Auto Zero Calibration for Offset and Mismatch in Reference Generator and Comparator

Chae Eun Jung, Juwon Oh, Jong Wan Jo, Young-Gun Pu and Kang-Yoon Lee

38. Transmission-Gate Based Two-Stage Op-Amp with Improved Stability

Daeun Kim, Jisu Kim, Eunjin Cho, Yeojin Chon, Shinhae Choi and Sung Min Park

39. A Design of Crystal-Less Clock Recovery Synthesizer with Automatic Frequency Calibration for BLE Smart-tag Applications

Ji-Hun Kim, Ho-won Kim and Kang-yoon Lee

Day 3
July 4, 2024

SS-5 Signal Processing for Sensing Applications

Date: July 4, 2024, Time: Thursday 09:00-10:40

Location: R1 Auditorium

Chair: Koichi Ichige (Yokohama National University)

1. Infant Detection Using In-Cabin Millimeter-Wave FMCW-MIMO Radar and CFAR Algorithm

Kotone Sato, Steven Wandale, Koichi Ichige, Kazuya Kimura and Ryo Sugiura

2. Flow-Path Fitting from Images with Support Vector Regression for River Health Assessment

Phonepaserth Sisaykeo, Hiroyasu Yasuda, Kiyoshi Hayasaka and Shogo Muramatsu

3. Super-resolving Single Radar Target with an Exact and Simple Formula

Qi Dai, Ruiming Guo and Thierry Blu

4. Single-channel P300 decomposition using detector-kernel networks

Sota Kotani, Hiroshi Higashi and Yuichi Tanaka

5. Detecting Discomfort Based on Electroencephalogram During Autonomous Driving

Motoi Noda, Toshihisa Tanaka, Ken Kubota and Kenichi Makita

SS-10 Biomedical Signal Processing

Date: July 4, 2024, Time: Thursday 09:00-10:40

Location: R2 MTG Room 1

Chair: Seong-Eun Kim (Seoul National University of Science and Technology)

1. Deep Learning-Based Approach using EEG in Neurocognitive Disorder Assessment

Dogeun Park, Young-Gi Ju, Jeong-Woo Jang, Keun-Tae Kim and Dong-Ok Won

2. VAMLM-PDD: Vigorous Amalgamated Machine Learning Model for Investigating Parkinson's Disease Detection

Sunil Kumar Prabhakar, Dogeun Park, Young-Gi Ju, Chulho Kim and Dong-Ok Won

3. Patient Domain Supervised Contrastive Learning for Lung Sound Classification Using Mobile Phone

Seung Gyu Jeong and Seong Eun Kim

4. Multimodal Emotion Recognition based on Global Information Fusion in Conversations

Dae Hyeon Kim and Young-Seok Choi

5. Advancing Mild Cognitive Impairment Detection: Integrating VR, MRI, and Neuropsychological Insights for Comprehensive Diagnosis

Bogyeom Park, Jinseok Park, Hojin Choi, Hokyoung Ryu and Kyoungwon Seo

SS-4-III Mathematical Systems Science and its Applications

Date: July 4, 2024, Time: Thursday 09:00-10:40

Location: R3 Seminar Room B250

Chair: Masaki Nakamura (Toyama Prefectural University)

1. A Performance Improvement for the Direct Simulation Monte Carlo Method using AVX-512

Iino Aoshi and Kuroda Hisayasu

2. On Correlation between Dimensions based on Neighbors in Multidimensional Networks

Masakazu Sengoku, Keisuke Nakano, Hiroshi Tamura and Akira Ohtsuka

3. Enhancing Knowledge Sharing Workshops with Natural Language Processing in Maintenance Work

Riku Ogawa, Moritaro Inoue and Naoshi Uchihira

4. Lyapunov-Based Approach to Event-Triggered Control with Self-Triggered Sampling for Switched Linear Systems

Shota Nakayama, Koichi Kobayashi and Yuh Yamashita

5. On extended distance edge coloring of graphs and channel assignment of wireless networks

Hiroshi Tamura and Keisuke Nakano

SS-11 Artificial Intelligence Semiconductor and System IC

Date: July 4, 2024, Time: Thursday 09:00-10:40

Location: R4 Seminar Room C210

Chair: Kwang-Hyun Baek (Chung-ang University)

1. Noise Robust Capacitive Readout Circuit for Human Interaction Detection

Seongjun Byun, Dong-Hyun Shin, Jong-Hyeon Seo, In-Su Lee and Kwang-Hyun Baek

2. Hardware Efficient Implementation of a 2-Then-1b/Cycle SAR ADC With Digital-Based Time-Domain Reference and Dual-Mode Comparator

Tae Hyun Kim, Joohee Lee, Young-Kyu Kim, Ha-Yul Lee, Mireu Choi and Kwang-Hyun Baek

3. High Speed 64-bit Hybrid Hyper Parallel Prefix Adder (H2PPA) using Carry Lookahead Adder

Jiho Kim and Youngmin Kim

4. A Synaptic Device Based on Charge-Trap Flash Memory with Poly-Si Channel for Low-Power In-Memory Computing and System Assessment

Soomin Kim, Min-Kyu Park, Yeji Lee, Myounggon Kang and Seongjae Cho

5. Design and Optimization of an All-Transistor Integrate-and-Fire Neuron Circuit with Schmitt Trigger and Active Capacitors

Arati Shah, Yeji Lee, Jisun Park, Hyungsoon Shin and Seongjae Cho

ML-2 Machine Learning

Date: July 4, 2024, Time: Thursday 09:00-10:40

Location: R5 MTG Room 2

Chair: Makoto Hasegawa (Tokyo Denki University)

1. Recurrent Neural Networks based Clustering for Binary Data in S-P Charts

Kazuma Kiyohara and Toshimichi Saito

2. Machine Learning-Based Prediction of Optical Properties in Chromophoric Organic Compounds

Aika Kuramoto, Shugo Kurata, Kensuke Yotsumoto, Hiroko Kawanobe and Makoto Hasegawa

3. Enhanced 2-Step DNN Model for RSSI-based Indoor Localization

Taisei Kosaka, Steven Wandale and Koichi Ichige

4. Exploring Acceptance Factors of the One Stop Service Application through Sentiment Analysis for Integrative Thai Medicine Clinics

Watcharin Warinthaksa, Mahasak Ketcham, Narumol Chumuang, Dr. Thittaporn Ganokratanaa, Worawut Yimyam and Thanatchaphan Petcharat

SS-9 Computational Intelligence in Computer Vision and Image Processing

Date: July 4, 2024, Time: Thursday 13:30-15:10

Location: R1 Auditorium

Chair: Sung In Cho (Dongguk University)

1. The Survey of Deep Learning Models for Zero-shot Sketch Based Image Retrieval

Seunggi Park and Sung In Cho

2. SMPL-based Anthropometric Landmark Detection in 3D Human Point Cloud

Ji Sun Byun and Sung In Cho

3. Dual Stocker Scheduling Optimization based on Reinforcement Learning

Sungwook Ahn, Joonkyu Kim, Jong-Ju Hong, Seong-Gyun Kim and Suk-Ju Kang

4. Multiscale Residual Feature Learning for RGBW Remosaicing

Sanga Park, An Vien and Chul Lee

5. Deep Color Constancy Inspired by Human Perception

Dong Hoon Kang, Dong Keun Han and Jong Ok Kim

SS-6-I Cutting-edge technologies for microgrid and battery management

Date: July 4, 2024, Time: Thursday 13:30-15:10

Location: R2 MTG Room 1

Chair: Masahiro FUKUI (Ritsumeikan University), Masahito ARIMA (Daiwa Can)

1. Optimal Sizing of Energy Storage Systems Considering Their Economical Operations in a Microgrid

Hirotaka Takano, Kento Harada, Welma Mogiti Nyabuto, Hiroshi Asano, Shinji Kambara and Nguyen-Duc Tuyen

2. Energy Management of a Workplace with EVs by Mixed-Integer Linear Programming

Yuki Sakamoto, Takumi Namba and Kiyotsugu Takaba

3. IoT Base Battery Management for Microgrid – From the Viewpoints of Economy and Rate of Renewable Energy Replacement –

Masahito Arima, Tomohisa Ohmoto and Masahiro Fukui

4. Optimal charging spot selection based on charging amount and price negotiation in microgrid

Chiaki Kojima, Kosuke Ooi, Hikaru Akutsu, Jin Matsuzaki, Kazutoshi Sakakibara, Masashi Saito and Hironao Kawamura

SS-4-IV Mathematical Systems Science and its Applications

Date: July 4, 2024, Time: Thursday 13:30-15:10

Location: R3 Seminar Room B250

Chair: Koichi Kobayashi (Hokkaido University)

1. Temporal Receptive Field Graph Convolutional Network for Skeleton-based Action Recognition

Qingqi Zhang, Ren Wu, Mitsuru Nakata and Qi-Wei Ge

2. Computer experiments on greedy algorithms for bin packing with load capacity constraint

Toshihiko Takahashi and Chio Sato

3. A multi-objective optimization method for balancing reverse power flow suppression and de-monopolization in P2P energy trading

Sho Akiyama and Norihiko Shinomiya

4. Study of Distributed Cooperative Evacuation Guidance Model using Multiple Mobile Robots

Kazuki Watanabe, Ryoma Toyomi and Atsuo Ozaki

5. Event-Triggered Control of Probabilistic Boolean Networks Using Reinforcement Learning

Keito Matsuoka, Fuma Motoyama, Koichi Kobayashi and Yuh Yamashita

CAS-1 Circuits and Systems

Date: July 4, 2024, Time: Thursday 13:30-15:10

Location: R4 Seminar Room C210

Chair: Yasuhiro Takahashi (Gifu University)

1. A 6 to 21 GHz CMOS Low Noise Amplifier Using Inductive-Peaking and Wideband Matching Techniques

Yusheng Sun, Youming Zhang, Zhennan Wei, Xusheng Tang and Fengyi Huang

2. Dual-band Bandpass Filter With Folded Couple Lines and Pentagon Stubs

Prueksasawan Peintaisong, Yanathip Rojprasitporn, Reungyot Lerdwanittip and Apirada Namsang

3. Enhancing Transimpedance Amplification with Optimization of Supply Voltage of Negative Impedance Converter

Ye Thway Aung and Yasuhiro Takahashi

4. Development of a Rotated 3D-Printed Lens Assembly Integrated with an Ultra-Wideband Antenna for Beam Steering Applications

Patchadaporn Sangpet, Virote Pirjnanchai, Suramate Chalermwisutkul and Nonchanutt Chudpooti

5. The Fully Differential Ring Amplifier with Wide Output Voltage Range Using Correlated Level Shifting Technique for The Pipelined ADCs

Ryoichi Miyauchi, Taketo Furusawa and Akira Hyogo

Poster III Poster III

Date: July 4, 2024, Time: Thursday 13:30-15:10

Location: R6 Tunnel (Poster)

Chair:

1. Zero-shot High-risk Situation Detection Based on Semantic Segmentation and Pose Estimation Using Fixed-point Cameras at Construction Sites

Taro Togo, Keisuke Maeda, Ren Togo, Takahiro Ogawa and Miki Haseyama

2. Growth promotion effect using natural sunlight spectrum LED for plant factory

Tatsuki Suda, Hirotaka Yamashita and Takeshi Kumaki

3. Efficient Scaling on GPU for Federated Learning in Kubernetes: A Reinforcement Learning Approach

Charndoh Bak and Seung-Jae Han

4. Backdoor Defense with Colored Patches for Machine Learning Models

Hayato Ikenouchi, Haruto Hirose and Toshiyuki Uto

5. Development of pseudo-positioning signal generator for QZSS

Kamitani Hidetoshi, Kurokawa Shuto, Kumaki Takeshi and Kobayashi Masaaki

6. Reducing Fruitless Cycles in Pollard's Rho Method with SFM for Efficient ECDLP Attacks on BN Curves

Ryuichi Kato, Takuro Manabe, Shota Kanzawa, Samsul Huda, Yuta Kodera, Takuya Kusaka and Yasuyuki Nogami

7. Domain-Generalized Face Anti-Spoofing with Domain Adaptive Style Extraction

Sunghun Yang, Jungho Lee, Sungjun Jang, Minseok Kang, Yongju Lee and Sangyoun Lee

8. A proposal for Blockchain Account Network Partitioning Optimization

Ikumi Tanabe and Koichi Gyoda

9. A non-volatile flip-flop circuit using one MTJ and reference resistance

Kousei Kaizu and Kimiyoshi Usami

10. Study of Antimicrobial Copper Envelopes for RFID Using Impedance Matching

Orrathai Watcharakitchakorn, Sukritta Paripurana and Navapadol Kittiamornkul

11. A study on automatic segmentation of red blood cells in digital holographic microscopy

Riki Numata, Hyun-Woo Kim, Myungjin Cho and Min-Chul Lee

12. A Quantum Circuit Design for Quantum Portfolio Optimization Problem

Vu Truc Quynh, Vu Tuan Hai, Le Vu Trung Duong, Pham Hoai Luan and Yasuhiko Nakashima

13. Development of drifting data logger with LPWA communication for water quality survey

Shonosuke Ishida, Yuta Kusunoki and Takeshi Kumaki

14. Efficient Quantum Circuit Encoding of Object Information in 2D Ray Casting

Seungjae Lee, Suhui Jeong and Jiwon Seo

15. Development of secure QR code by using invisible information display lighting device

Arata Ikeda, Takumi Hayashi and Takeshi Kumaki

16. Predicting Endotracheal Intubation Needs in Neonatal Intensive Care Unit: A Multimodal Approach

Ka Hyun Kim, Jin Cheol Park, Gyu-Young Kim, Jae-Young Maeng, Jae-Bin Sung and Jae-Woo Kim

17. Proposition and Evaluation of MEC Server Optimal Resource Allocation Considering Task Priority on IoV

Wang Yuxuan and Gyoda Koichi

18. Automatic Matching of Japanese Conference Names Based on String Segmentation and Comparisons

Hiroo Hayashi and Marie Katsurai

19. Abnormality Estimation of Conjunctival Hyperemia Using Smartphone Camera and Deep Learning

Nobuhisa Anzai and Makoto Hasegawa

20. Leakage-based Strong PUF Operating at Ultra-Low Voltage Using a Leakage Control Approach

Shunkichi Hata and Kimiyoshi Usami

21. Evaluation of 3D CG Image Colorization Quality Using Visible Digital Watermarking after Noise Removal Based on Sparse Dictionary Learning

Norifumi Kawabata

22. A Framework for Remote Robot Actuation using ROS Integrated with MQTT

Chacharin Lertyosbordin, Dhulyatuch Wongsanont, Nichaput Khurukitwanit and Waruna

Saowapark

23. Road Lane Markings Detection and Classification Design based on Memory Optimization

Bobokhon Yusupbaev, Ke Yu and Jun Rim Choi

24. A novel noise filtering method using Kalman filter in Digital Holographic Microscopy (DHM)

Taishi Ono, Hyun-Woo Kim, Myungjin Cho and Min-Chul Lee

25. Random Linear Network Coding with Selective Recoding for Low-latency Communication

Patrick Enenche, Dong Ho Kim and Dongho You

26. Unveiling the Significance of Sign Calculation Impact on JPEG Applications

Hiroyuki Hama and Toshinori Sato

27. A study on lightweight Extreme Learning Machine algorithm for edge-computing

Kouki Mouri and Takeshi Kumaki

28. SnapSafe: Enabling Selective Image Privacy Through YOLO and AES-Protected Facial Encryption with QR Code

Andri Santoso, Samsul Huda, Tuy Tan Nguyen, Yuta Kodera and Yasuyuki Nogami

29. Human Pose Estimation for Early Action Prediction using Progressive Skeleton Data

Sittiporn Tantiborirak and Kanjanapan Sukvichai

30. 3D Knee Structure Reconstruction from 2D X-rays Based on Generative Deep Learning Models

Siwon Hwang, Jitae Shin and Jae-Joon Lee

31. A Support Tool for Converting Community Bus Operation Data to GTFS Format

Hideyuki Satomura, Yoshihiro Yasutake, Toshihiro Uchibayashi, Chinasa Sueyoshi and Kentaro Inenaga

32. Visually Representing CPU Execution with the KERNEL Educational Computer Model

Ryuto Fukumura, Yoshihiro Yasutake, Kentaro Inenaga and Toshikazu Ishida

33. Developing Tools for Network Probing and Analyzing GTP-U Traffic in 5G Networks

Jin-Kyu Choi, Kiwon Kim, Jongkuk Lee, Heasook Park, Sang-Wan Kim and Junghyun Yoon

34. Proposal of Structuring Element Size-equaled Total Pixel Values-based Morphological Pattern Spectrum for Image Manipulation Detection

Kyosuke Kageyama, Tetsushi Koide and Takeshi Kumaki

35. MTJ-PUF with Input Decoder and Evaluation of Machine Learning Resistance

Takumi Kikuchi and Kimiyoshi Usami

36. A Real-time Full-screen Diagnostic Support Method with Simultaneous Detecting and Classifying for Colonoscopy Lesion Areas

Yongfei Wu, Daisuke Katayama, Tetsushi Koide, Toru Tamaki, Shigeto Yoshida, Shin Morimoto, Yuki Okamoto, Shiro Oka and Shinji Tanaka

37. A study on PMFC operation with aquaponics system

Ryosuke Matsui, Syuugo Saito and Kumaki Takeshi

46. HyperNTT: A Fast and Accurate NTT/INTT Accelerator with Multi-Level Pipelining and an Improved K2-RED Module

Dinh Nhat Nguyen, Van Duy Tran, Hoai Luan Pham, Vu Trung Duong Le, Tuan Hai Vu, Duc Khai Lam, Thi Hong Tran and Yasuhiko Nakashima

47. Creation of Virtual City 3D Model for EM-Wave Propagation Dataset Extension

Rento Hagiwara, Koichi Ichige, Tatsuya Nagao and Takahiro Hayashi

48. Proposal of External-ear Model-based Mobile Device for Hazard-sound Detection

Miho Yamada, Takeshi Kumaki and Kyosuke Kageyama

SS-3 WEIE Workshop by IEIE Japan Branch

Date: July 4, 2024, Time: Thursday 15:30-16:50

Location: R1 Auditorium

Chair: PAIK, Incheon (The University of Aizu)

1. Method of Vital Capacity Measurement using Three-Dimensional Depth Sensor

Junko Izawa, Kouki Matsuoka, Prarinya Siritanawanan and Shinji Fukusawa

2. Evaluation of Text Generation by GPT Language Model Fine-Tuned by Generated Ontology

Marika Kuwabara and Incheon Paik

3. Evaluating the Accuracy of Real-Time Japanese Sign Language Word Recognition with Vision Transformer Models Trained on Angular Features

Tamon Kondo, Ryouta Murai, Duk Shin and Yousun Kang

4. CNN-Transformer Based Plant Image Segmentation with Wavelet Constraint

Jong Seok Park, So Yeon Jang and Jong Ok Kim

5. Development of posture evaluation system using 2D camera

Schon Ito, Jongho Lee and Junko Izawa

SS-6-II Cutting-edge technologies for microgrid and battery management

Date: July 4, 2024, Time: Thursday 15:30-16:50

Location: R2 MTG Room 1

Chair: Masahito ARIMA (Daiwa Can), Masahiro FUKUI (Ritsumeikan University)

1. Application of coupled battery model of thermal and electrical equivalent circuits to realize long-life Battery Energy Storage System

Atsumi Kondo

2. Unleashing the Potential: 2.45 GHz Energy Harvesting with a Rectenna and a 6-Stage Cockroft-Walton Voltage Multiplier

Oleg Serov and Mohamed Zied Chaari

3. SOC-based Droop Control Method Using Kalman Filter for Battery Energy Storage System in Microgrid

Yupeng Chen, Kunihiko Mitsubori and Rikiya Abe

4. Prediction of time-series discharge characteristics of primary batteries for IoT device using machine learning

Shuhei Matsushita, Masahiro Fukui and Kiyotsugu Takaba

IPV-2 Image processing and Vision

Date: July 4, 2024, Time: Thursday 15:30-16:50

Location: R3 Seminar Room B250

Chair: Yuichi Tanaka (Osaka University)

1. EPNet with Self-Attention for Fast and Accurate 3D Object Detection

Yuto Sakai, Hiroki Nishikawa, Xiangbo Kong and Hiroyuki Tomiyama

2. Patch Regularization in Visual State Space Model

Junyoung Hong, Hyeri Yang, Ye Ju Kim, Shinwoong Kim and Kyungjae Lee

3. Improved Accuracy of Table Tennis Ball Detection by Fine Tuning

Ryo Fujimoto, Hiroki Nishikawa, Xiangbo Kong, Ami Tanaka and Hiroyuki Tomiyama

4. Local Context Aggregation for Semantic Segmentation: A Novel PSPNet Approach

Haerim Kim, Ye Ju Kim, Junyoung Hong, Hyeri Yang, Eun A Shim and Kyungjae Lee

COMP-3 Computers

Date: July 4, 2024, Time: Thursday 15:30-16:50

Location: R4 Seminar Room C210

Chair:

1. NFT-Based Verification of Academic Credentials: Case Study for GSPP Certificate, Graduate School, Kasetsart University

Srijidtra Mahapakulchai, Pongsathorn Utsahawattanasuk and Terapass Jariyanorawiss

2. The System Transformation for Customer Relationship Management Application: Rebranding

Watcharin Warinthaksa, Thanatchaphan Petcharat, Worawut Yimyam, Dr. Thittaporn Ganokratanaa, Mahasak Ketcham and Narumol Chumuang

3. Designing Avatar System and Integrate to the Metaverse

Suebphong Noisri, Halim Budi, Pisut Wisessing, Kunanont Srisupakwong and Lunchakorn Wittisittikulkij

4. Integrating DutaVerse with the Cultural Exhibition Hall in the Metaverse Academic Nexus Virtual Education Ecosystem

Maria Nila Anggia Rini, Matahari Bhakti Nendya, Halim Budi Santoso, I Kadek Dendy Senapartha, Andhika Galuh Prabawati, Rosa Delima, Lunchakorn Wuttisittikulkij, Tanakorn Tanmalaporn, Panithan La-Aiddee, Ittipon Yamyuan, Nang Htet Htet Aung and Grace Shinta Esther Penata

BME-1 Biomedical Engineering

Date: July 4, 2024, Time: Thursday 15:30-16:50

Location: R5 MTG Room 2

Chair: Ingon Chanporkpakdi (Tokyo University of Agriculture and Technology)

1. Text Knowledge-guided Segment Anything Model for Medical Image Segmentation

Kim Young Woon, Cho Hyunjun, Ko Sung-Jea and Jung Seung-Won

2. A Skin Roughness Evaluation Method Integrating Local Structural Information of Skin Surface Using Deep Learning

Tatsuki Ohta, Tetsushi Koide, Kenta Nakamoto, Yuki Hayashida and Yumi Aoyama

3. ThalNet: Deep Learning for Thalassemia via Blood Image Structure Function Image

Kannika Wiratchawa, Touchwin Petiwathayakorn, Somdet Srichairatanakool, Pimpisid Koonyosying, Ungkarn Jarujareet and Thanapong Intharah

4. Hyperspectral Image Augmentation Technique for the Classification of Diabetic Retinopathy

Gyutae Oh and Jitae Shin

Day 4
July 5, 2024

SS-7-I Artificial Intelligence in Science and Medicine

Date: July 5, 2024, Time: Friday 09:00-10:40

Location: R1 Auditorium

Chair: Thanapong Intharah (Khon Kaen University)

1. GAN-Augmented Chest X-Ray Image Classification: A Comparative Study of Combined Augmentation Techniques

Anh Dinh The, Phuc Phan Hong, Dat Vo Minh, Thinh Nguyen Le Quang and Hoang Ngoc Tran

2. Few-Shot-Learning for Scar Recognition: A CNN-based Binary Classification Approach

Dongju An, Insang Yoo, Jeongmin Jo, Woojeong Lee, Hyejin Yu and Seung Park

3. Enhancing Disease Classification in Chest X-ray Images: A Comparative Study of Preprocessing Techniques for Convolutional Neural Networks

Jaegwang Shin, Shinji Hwang, Dongchae Lee, Hwayoung Lee and Yongjune Kim

4. OPG-SHAP: A Dental AI Tool for Explaining Learned Orthopantomogram Image Recognition

Natthanich Hirunchavarod, Lapatrada Dangsungnoen, Kwansawan Thongprasant, Pornnakanok Phuphatham, Narawit Prathansap, Natnicha Sributsayakarn, Suchaya Pornprasertsuk-Damrongsri, Varangkanar Jirarattanasopha and Thanapong Intharah

5. Causal Discovery Using VAR-LiNGAM with Large-scale Health Examination Data

Hiroki Yamasaki and Masaaki Nagahara

IPV-3 Image processing and Vision

Date: July 5, 2024, Time: Friday 09:00-10:40

Location: R3 Seminar Room B250

Chair: Tian Song (Tokushima University)

1. Generalized Deep Learning Model for Restoration of Degraded Images under Multiple Degradations

Jiseon Moon, Siwon Hwang and Jitae Shin

2. Low Bit Rate Video Coding using VVC and DCVC-DC for River Surveillance

Yuki Morimoto, Tian Song, Takafumi Katayama and Takashi Shimamoto

3. Partial Image Generation with VQGAN for River Surveillance Video Coding

Naoya Nakayama, Takafumi Katayama, Tian Song and Takashi Shimamoto

4. Intra Prediction Mode using Conditional-UNet by Stochastic Differential Equations for Next Generation Video Coding

Kohei Yamada, Takafumi Katayama, Tian Song and Takashi Shimamoto

5. Selective Style Gaussian: Enabling Localized Style Transfer in 3D Scenes

Hyeri Yang, Hyeonbeom Heo, Junyoung Hong, Ye Ju Kim and Kyungjae Lee

CAS-2 Circuits and Systems

Date: July 5, 2024, Time: Friday 09:00-10:40

Location: R4 Seminar Room C210

Chair: Ryoichi Miyauchi (Tokyo University of Science)

1. Reducing power losses with piezoelectric energy harvesting interface circuit

Shu Osawa, Ryoichi Miyauchi and Akira Hyogo

2. System-level Analysis of Peak Current Mode Boost Switching Power Supplies

Zheyucui Cui, Yu Jin, Duli Yu, Wenzhe Ye and Weiqing Lu

3. Microwave Sensor for Ethanol Intensity Determination Based on Fractal Resonators

Pubet Sangmahamad, Tanaporn Pechrkool, Thanakorn Sutham, Boonyarit Kumkhet, Nipont Tangthong, Virote Pirajnanchai and Patchadaporn Sangpet

4. A New Adiabatic Logic Circuit for RF Energy Harvesting

Bendito Freitas Ribeiro and Yasuhiro Takahashi

5. Study on Multi-Output Configurations of Buck Boost SEPIC, High Boost SEPIC and Multiplied Boost SEPIC

Shogo Katayama, Yuki Sekine, Yasunori Kobori, Anna Kuwana and Haruo Kobayashi

BME-2 Biomedical Engineering

Date: July 5, 2024, Time: Friday 09:00-10:40

Location: R5 MTG Room 2

Chair: Hiroshi Higashi (Osaka University)

1. Eye Gaze Control for Android Operating System Smartphones for Arm-disabled Individuals

Thanatchaphan Petcharat, Dr. Thittaporn Ganokratanaa and Mahasak Ketcham

2. Development of BCI application for the physically challenged using EEG measured with multi-pin electrodes

Rikuto Nishiura and Koji Tsuru

3. Multimodal Machine Learning Model For MCI Detection Using EEG, MRI and VR Data

Mariem Kallel, Bogyeom Park, Kyoungwon Seo and Seong-Eun Kim

4. Development of a Virtual Reality Cognitive Stimulation Game for Older Patient with Cognitive Impairment

Tanakorn Tanmalaporn, Lunchakorn Wuttisittikulkij, Aisha Munir, Pisit Vanichchanunt, Chavit Tunvirachaisakul and Sookjaroen Tangwongchai

5. Deep Learning Based Myocardial Infarction Localization Model to Detect ST-Segment Change in Specific ECG Leads

Minuk Yang, Jee-Woo Choi, Yeoungseo Lee, Hyoseop Shin and Seung Park

SS-7-II Artificial Intelligence in Science and Medicine

Date: July 5, 2024, Time: Friday 13:00-14:40

Location: R1 Auditorium

Chair: Thanapong Intharah (Khon Kaen University)

1. Leveraging Masked Autoencoders for Enhanced Classification of Multi-labeled Pediatric Thoracic Diseases in Chest X-rays

Taeyoung Yoon and Daesung Kang

2. Exploration of Deep Learning-Based Optimal Models and Interpretation Using eXplainable AI for Fetal Head Region Segmentation in Ultrasound Imaging

Minseo Hwangbo, Yeong-Eun Jeon, Ho-Jung Kim, Ga-Hyun Son, Jae-June Lee and Dong-Ok Won

3. Green Clustering Analyzing Logistics Performance and Carbon Emissions with K-Means and Gaussian Mixture Models

Pattharaporn Thongnim, Jiratchaya Chomjinda, Janjira Piladaeng and Tanayot Kulthon

COMM-1 Communications

Date: July 5, 2024, Time: Friday 13:00-14:40

Location: R2 MTG Room 1

Chair:
Koichi Gyoda (Shibaura Institute of Technology)

1. Deep Learning-Based PAPR Suppression of OFDM Signals with Clipping Constraint

Masaya Ohta and Toko Hayakawa

2. 5G Use Cases in Metaverse Using Open Source Software

Pisit Vanichchanunt, Sirapop Saengthongkam, Natthapong Waichampa, Navy Wuttiananchai, Vitawat Sittakul, Pruk Sasithong, Lunchakorn Wuttisittikulkij and Sukritta Paripurana

3. PRNet with Convolution Layer for PAPR Reduction of OFDM Signals and FPGA Implementation

Atsuki Suzuki and Masaya Ohta

4. Performance Evaluation of Routing Protocols iFORP-3DD for DANET Considering Drone Movement Speed

Shosei Otani and Koichi Gyoda

5. A study on bit error rate for zero-forcing THP MIMO communication systems using QR decomposition with greedy permutation

Shigenori Kinjo, Shuichi Ohno and Masaaki Yamanaka

COMP-4 Computers

Date: July 5, 2024, Time: Friday 13:00-14:40

Location: R4 Seminar Room C210

Chair:

1. Malicious Traffic Detection in DNS over HTTPS (DoH): Edge Prediction with Graph Convolutional Network

Pongsarun Boonyopakorn and Ukid Changsan

2. Architecture Design for Pedestrian Detection Based on Memory Grid Occupancy and Data Reuse

Ke Yu, Jangwoo Baek, Bobokhon Yusupbaev and Jun Rim Choi

3. ZTBP:eBPF-Driven Analysis for Improved Random Read Performance in ZNS Devices via DB-Clustering

Sanghune Jung and Eui-Young Chung

4. Thermal Simulation of ML Applications on a Commercial DRAM-based PIM

Jae Yoon Lee and Sung Woo Chung

5. Deep-BMNN: Implementing Sparse Binary Neural Networks in Memory-Based Reconfigurable Processor (MRP)

Kenta Sasagawa, Senling Wang, Tatsuya Nishikawa, Hiroshi Kai, Yoshinobu Higami, Hiroshi Takahashi, Hiroyuki Yotsuyanagi, Tianming Ni and Xiaoqing Wen

6. FPGA Implementation of Hardware-based Demand Paging on RISC-V Architecture

Wenjing Jin, Jeonghun Gong and Jae W. Lee

SP-1 Signal Processing

Date: July 5, 2024, Time: Friday 13:00-14:40

Location: R5 MTG Room 2

Chair:

1. Secure Sparse Modeling Through Linearized Kernel Dictionary Learning with Random Unitary Transformation

Kazuki Kurozawa and Takayuki Nakachi

2. Direction Estimation of Instrumental Sound Sources Using Convolutional Neural Network Classification

Kaho Yamamoto, Harumi Murata and Akio Ogihara

3. Privacy Preserving Trainable ISTA using Permuted Sparse Representation

Nichika Yuge and Takayuki Nakachi