NCSP'22   Session Schedule

	Room 1	Room 2
February 28, 09:00–10:30	Complex Networks and Applications 1 1AM1-1: Page 2	Estimation 1 1AM1-2: Page 2
February 28, 10:45–12:15	Complex Networks and Applications 2 1AM2-1: Page 3	Estimation 2 1AM2-2: Page 3
February 28, 13:05–14:35	Circuit Design and Analysis 1PM1-1: Page 4	Image Processing and Recognition 1 1PM1-2: Page 5
February 28, 14:50–16:20	Medical Applications 1 1PM2-1: Page 5	Image Processing and Recognition 2 1PM2-2: Page 6
February 28, 16:35–18:41	Special Session: Swarm and Evolutionary Optimization 1PM3-1: Page 6	Wireless Communications 1PM3-2: Page 7
March 1, 09:00–10:30	Control and Fuzzy Systems 2AM1-1: Page 8	Image Processing and Recognition 3 2AM1-2: Page 8
March 1, 10:45–12:15	Speech Processing and Recognition 1 2AM2-1: Page 9	Information Security 2AM2-2: Page 9
March 1, 13:05–14:35	Medical Applications 2 2PM1-1: Page 10	Sensor Network and Spread Spectrum 2PM1-2: Page 11
March 1, 14:50–16:20	Computer Vision 2PM2-1: Page 11	Speech Processing and Recognition 2 2PM2-2: Page 12
March 1, 16:35–18:05	Complex Systems 2PM3-1: Page 12	Detection 2PM3-2: Page 13

All the workshop sessions are scheduled in JST (UTC+09:00).

1AM1-1: Complex Networks and Applications 1

Date: February 28, 9:00–10:30
Room: Room1
Chair: Mio Kobayashi (NIT, Anan College)

1AM1-1-1 **An investigation of basic emotions by colexification network**

Mitsuki Fukuya (Tokyo University of Science), Tomoko Matsumoto (Tokyo University of Science), Yutaka Shimada (Saitama University), Tohru Ikeguchi (Tokyo University of Science)

1AM1-1-2 **A 1-Msps 500-nodes FORCE Learning Accelerator for Reservoir Computing**

Kose Yoshida (Hokkaido University), Megumi Akai-Kasaya (Hokkaido University), Tetsuya Asai (Hokkaido University)

1AM1-1-3 **Physical reservoir computing on analog-digital hybrid circuit systems comprising discrete semiconductor devices**

Yuki Abe (Hokkaido University), Kose Yoshida (Hokkaido University), Megumi Akai Kasaya (Hokkaido University), Tetsuya Asai (Hokkaido University)

1AM1-1-4 **A Study on CNN-based Positioning Support System for Medical X-ray Imaging**

Akari Matsushima (Teikyo University), Tai-Been Chen (I-Shou University), Nana Itayama (Teikyo University), Shih-Yen Hsu (I-Shou University), Takahide Okamoto (Teikyo University)

1AM1-1-5 **Prediction System of Cloud Distribution Image Using Fully Convolutional Network**

Koki Akiyama (Tokushima University), Hiroshi Suzuki (Tokushima University), Takahiro Kitajima (Tokushima University), Takashi Yasuno (Tokushima University)

1AM1-2: Estimation 1

Date: February 28, 9:00–10:30
Room: Room2
Chair: Yasuteru Hosokawa (Shikoku University)

1AM1-2-1 **Optimal Error Exponents of Binary Classification for Sources with Multiple Subclasses**

Hiroto Kuramata (The University of Electro-Communications), Hideki Yagi (The University of Electro-Communications)

1AM1-2-2 **A Study on Improvement of Accuracy and Reproducibility of Self-Position Estimation for a Lunar Probe Using Weight Functions**

Ryota Yuminamochi (Meiji University), Hiroyuki Kamata (Meiji University)

1AM1-2-3 **Development of an Object Recognition Method Based on Transformer Architecture**

Shunpei Morita (National Institute of Technology, Niihama College), Daisuke Tanaka (National Institute of Technology, Niihama College)

1AM1-2-4 **Integration of Multimodal Sensor Information Using VRAE and Application to Object Recognition**

Kazuki Hayashi (National Institute of Technology, Niihama College), Daisuke Tanaka (National Institute of Technology, Niihama College)

Evaluation of Primal Machine Learning Approaches for Open Circuit voltage estimation of Li-ion Batteries

Hideaki Ito (Ritsumeikan University), Syohei Irikuchi (Ritsumeikan University), Yuichiro Nishimura (Ritsumeikan University), Masahiro Fukui (Ritsumeikan University)

1AM2-1: Complex Networks and Applications 2

Date: February 28, 10:45–12:15
Room: Room1
Chair: Masatoshi Sato (Tamagawa University)

1AM2-1-1 **Automated Classification of Body Fluid Cell images by Deep Neural Networks**

Shih-Yen Hsu (I-Shou University), Takahide Okamoto (Teikyo University), Akari Matsushima (Teikyo University), Chi-Yuan Wang (I-Shou University), Yi-Ming Wang (I-Shou University), Tai-Been Chen (I-Shou University)

1AM2-1-2 **Real-time Detection of Stenosis on X-ray Coronary Angiography Using YOLO Approach**

Tzu-Ming Lee (I-Shou University), Takahide Okamoto (Teikyo University), Akari Matsushima (Teikyo University), Yung-Hui Huang (I-Shou University), Kuo-Hsuan Lin (I-Shou University), Tai-Been Chen (I-Shou University)

1AM2-1-3 **Echo State Network with Multiple Cycle Reservoir Layer**

Urara Takahashi (NIT, Suzuka College), Chihiro Ikuta (NIT, Suzuka College)

1AM2-1-4 **Analysis and application of periodic orbits in elementary cellular automata**

Taiji Okano (HOSEI University), Hotaka Udagawa (HOSEI University), Takumi Suzuki (HOSEI University), Toshimichi Saito (HOSEI University)

1AM2-1-5 **Measurement of Tomatoes Leaf Area Using a Depth Camera**

Nozomi Maeda (Tokushima University), Hiroshi Suzuki (Tokushima University), Takahiro Kitajima (Tokushima University), Akinobu Kuwahara (Tokushima University), Takashi Yasuno (Tokushima University)

1AM2-2: Estimation 2

Date: February 28, 10:45–12:15
Room: Room2
Chair: Masahiro Tanaka (Konan University)

1AM2-2-1 **Human Gait Analysis Using Smartphone for Prevention of Long-Term Care**

Tomoki Kazari (Tokushima University), Hiroshi Suzuki (Tokushima University), Takahiro Kitajima (Tokushima University), Akinobu Kuwahara (Tokushima University), Takashi Yasuno (Tokushima University), Masahide Hojo (Tokushima University)

1AM2-2-2 **Storage battery open-circuit voltage estimation method using recurrent neural network and its evaluation**

Shohei Irikuchi (Ritsumeikan University), Hideaki Ito (Ritsumeikan University), Yuichiro Nisimura (Ritsumeikan University), Masahiro Fukui (Ritsumeikan University)

1AM2-2-3 **Mode Recognition of Nursing Care Motions Based on Machine Learning**

Tomoya Kawauchi (Tokushima University), Hiroshi Suzuki (Tokushima University), Takahiro Kitajima (Tokushima University), Akinobu Kuwahara (Tokushima University), Takashi Yasuno (Tokushima University)

1AM2-2-4 **Speeding Up Time Delay Estimation of the Dynamical System Considering the Geometry of the Attractor**

Riki Watabe (Graduates School of Science and Technology, Meiji University), Atsuhi Aikyo (Graduates School of Science and Technology, Meiji University), Hiroyuki Kamata (School of Science and Technology, Meiji University)

1AM2-2-5 **Simple Optical Fingerprint Method for Indoor Visible-Light Communications**

Daisuke Ogawa (Ibaraki University), Kouki Taruishi (Ibaraki University), Yusuke Kozawa (Ibaraki University), Hiromasa Habuchi (Ibaraki University)

1PM1-1: Circuit Design and Analysis

Date: February 28, 13:05–14:35
Room: Room1
Chair: Yuu Miino (Tokyo University of Technology)

1PM1-1-1 **Development Of Real Time Soil Collection And Penetration System For Measuring The Soil Mechanical Properties**

Muhamad Afiq Shahmi Bin Shamsul Izran (UTeM), Anuar bin Mohamed Kassim (UTeM), Wan Mohd Bukhari Wan Daud (UTeM), Mohd Rusdy bin Yaacob (UTeM), Muhammad Mustaqiim bin Roslan (UTeM), Mohd Shukry bin Hassan Basri (UTeM), Awangku Khairul Ridzwan Awangku jaya (Auro Technologies PLT), Takashi Yasuno (Tokushima University)

1PM1-1-2 **Implementation and Evaluations of Midori-OTR in Automotive Systems**

Daichi Hirose (Meijo University), Shu Takemoto (Meijo University), Yusuke Nozaki (Meijo University), Masaya Yoshikawa (Meijo University)

1PM1-1-3 **Design of Class-Φ^2 Wireless Power Transfer System**

Kisara Nakajima (Chiba institute of technology), Yusuke Hagiwara (Chiba institute of technology), Weisen Luo (Chiba institute of technology), Xiuqin Wei (Chiba institute of technology)

1PM1-1-4 **Design of Class-EF$_2$ Oscillator with Nonlinearities of MOSFET Drain-to-Source and Gate-to-Drain Parasitic Capacitances**

Azuma Uchida (Chiba institute of technology), Kisara Nakajima (Chiba institute of technology), Weisen Luo (Chiba institute of technology), Xiuqin Wei (Chiba institute of technology)

1PM1-1-5 **Design of a 27.12 MHz Class-E Inverter Using an eGaN FET**

Kai Machizawa (Chiba Institute of Technology), Kazuki Tanaka (Chiba Institute of Technology), Kisara Nakajima (Chiba Institute of Technology), Luo Weisen (Chiba Institute of Technology), Xiuqin Wei (Chiba Institute of Technology)

1PM1-2: Image Processing and Recognition 1

Date: February 28, 13:05–14:35
Room: Room2
Chair: Fara Ashikin Ali (Universiti Teknikal Malaysia Melaka)

`1PM1-2-1` **Behavior Recognition of Office Workers by YOLO for Surveillance Camera Images**

Atushi Ogino (Konan University), Masahiro Tanaka (Konan University)

`1PM1-2-2` **A Study on Homography Estimation by Unsupervised Deep Learning for Images with Luminance Disturbances**

Mikichika Yokono (Meiji University), Hiroyuki Kamata (Meiji University)

`1PM1-2-3` **A Study on Self-Positioning by Optimizing the Transformation Matrix Using Gauss-Newton Method**

Mitsuki Itoh (Meiji University), Hiroyuki Kamata (Meiji University)

`1PM1-2-4` **Multi-modal speech recognition using data augmentation by generating mouth images from audio**

Ryuichi Hirose (Gifu University), Satoshi Tamura (Gifu University), Yuuto Gotoh (Ricoh Company), Masaki Nose (Ricoh Company)

`1PM1-2-5` **Deep-learning-based audio-visual speech recognition with facial features**

Keisuke Nakamura (Gifu University), Satoshi Tamura (Gifu University)

1PM2-1: Medical Applications 1

Date: February 28, 14:50–16:20
Room: Room1
Chair: Hironori Kumeno (NIT, Niihama College)

`1PM2-1-1` **A Study on the Usefulness of Dental Bone Guidance by Numerical Analysis**

Kakeru Nishimoto (Nagaoka University of Technology), Yasunori Sugita (Nagaoka University of Technology)

`1PM2-1-2` **Analyzing Performance of Classification with Transfer Learning of CNN for Pneumonia Chest X-ray Images**

Hao-Shan Wang (I-Shou University), Takahide Okamoto (Teikyo University), Akari Matsushima (Teikyo University), Wen-Chuan Hsieh (I-Shou University), Jing-Zhe Wang (I-Shou University), Tai-Been Chen (I-Shou University)

`1PM2-1-3` **Segmentation of Brain Tumors on Fused MRI T1 and T2 Images Using Fully Convolutional Networks**

Yu-Ting Hua (I-Shou University), Takahide Okamoto (Teikyo University), Akari Matsushima (Teikyo University), Wen-Chuan Hsieh (I-Shou University), Chi-Yuan Wang (I-Shou University), Tai-Been Chen (I-Shou University)

`1PM2-1-4` **Segmentation of Liver and Right Kidney on Ultrasound Images by Fully Convolutional Networks**

Tsung-Hsuan Wu (I-Shou University), Chi-Yuan Wang (I-Shou University), Shih-Yen Hsu (I-Shou University), Yung-Hui Huang (I-Shou University)

Motion Analysis of Knee Rehabilitation Exercise Using Musculoskeletal Model

Ryota Mori (Tokushima University), Hiroshi Suzuki (Tokushima University), Takahiro Kitajima (Tokushima University), Akinobu Kuwahara (Tokushima University), Takashi Yasuno (Tokushima University)

1PM2-2: Image Processing and Recognition 2

Date: February 28, 14:50–16:20
Room: Room2
Chair: Azian Azamimi Abdullah (Universiti Malaysia Perlis)

1PM2-2-1 **Improving the Accuracy of Self-Positioning by RANSAC Using Reinforcement Learning**

Taka Yamanaka (Meiji University), Hiroyuki Kamata (Meiji University)

1PM2-2-2 **Study on robust estimation method in high-precision matching between photographed images with disturbance and map images**

Tatsuya Kanda (Meiji University), Yuta Ozeki (Meiji University), Hiroyuki Kamata (Meiji University)

1PM2-2-3 **Bit-Depth Enhancement via Predictive Filter Flow**

Daiki Arai (Tamagawa University), Taishi Iriyama (Tamagawa University), Masatoshi Sato (Tamagawa University), Hisashi Aomori (Chukyo University), Tsuyoshi Otake (Tamagawa University)

1PM2-2-4 **Implementation of Automatic Number Plate Recognition for Car Parking System**

Fara Ashikin Ali (Universiti Teknikal Malaysia Melaka), Ahmad Fairuz Muhammad Amin (Universiti Teknikal Malaysia Melaka), Afif Ikmal Mohamad (Universiti Teknikal Malaysia Melaka)

1PM2-2-5 **Facial Recognition Based Class Attendance for Institutions in Malaysia**

Fara Ashikin Ali (Universiti Teknikal Malaysia Melaka), Ahmad Fairuz Muhammad Amin (Universiti Teknikal Malaysia Melaka), Muhammad Syahrizzat Adnan (Universiti Teknikal Malaysia Melaka)

1PM3-1: Special Session: Swarm and Evolutionary Optimization

Date: February 28, 16:35–18:41
Room: Room1
Chair: Yoshikazu Yamanaka (Utsunomia University)

1PM3-1-1 **A fundamental investigation of GPSA for tracking multiple optima in dynamic environment**

Yoshikazu Yamanaka (Utsunomiya University), Shoki Hirose (Utsunomiya University), Han Xinyu (Utsunomiya University), Katsutoshi Yoshida (Utsunomiya University)

1PM3-1-2 **A Study of Controlling Multiple Drones Based on the Artificial Bee Colony Algorithm**

Hiroto Kurosawa (Nippon Institute of Technology), Takuya Shindo (Nippon Institute of Technology)

1PM3-1-3 **Proposal for Periodic Particle Swarm Optimization with Trigonometric Function**

Kosuke Mori (NIT, Suzuka College), Chihiro Ikuta (NIT, Suzuka College)

| 1PM3-1-4 | **Toward multi-objective optimization of recurrent neural networks**

Kazuma Morishita (Hosei University), Kento Saka (HOSEI University), Toshimichi Saito (Hosei University)

| 1PM3-1-5 | **Training Multilayer Neural Networks with PSO**

Riku Takato (Tokyo City University), Kenya Jin'no (Tokyo City University)

| 1PM3-1-6 | **Emergence of the Boid Swarm**

Yusuke Nakazato (Tokyo City University), Kenya Jin'no (Tokyo City University)

| 1PM3-1-7 | **Basic Search Performance of Optimizer based on Spiking Oscillator Networks**

Tomoyuki Sasaki (Shonan Institute of Technology), Hidehiro Nakano (Tokyo City University)

1PM3-2: Wireless Communications

Date: February 28, 16:35–18:23
Room: Room2
Chair: Kien Nguyen (Chiba University)

| 1PM3-2-1 | **Layered Division Multiplexing of Next Generation Advanced Broadcasting in the Time Domain under ISDB-T**

Takehiro Toratani (Tokyo University of Science), Akira Nakamura (Kanagawa University), Makoto Itami (Tokyo University of Science)

| 1PM3-2-2 | **Enhancement of VN-CodeSK with VSS System on RGB Illumination-Light Parallel Communication**

Ryohei Hazu (Ibaraki University), Keisuke Manaka (Ibaraki University), Hiromasa Habuchi (Ibaraki University), Yusuke Kozawa (Ibaraki University)

| 1PM3-2-3 | **72kbps Terrestrial Acoustic Communications Employing Transmit Precoding and Channel Interpolation**

Katsuyoshi Yamamoto (Ritsumeikan University), Hiroshi Kubo (Ritsumeikan University)

| 1PM3-2-4 | **Differential OFDM Employing Multiple Differential Detection with Channel Prediction and Out-of-Band Emission Suppression**

Kota Iwamoto (Ritsumeikan University), Hiroshi Kubo (Ritsumeikan University)

| 1PM3-2-5 | **A Study on Improving Performance Scheme and Adaptive Modulation of DS-CDMA IVC in Urban Environment**

Shinnosuke Iino (Tokyo University of Science), Makoto Itami (Tokyo University of Science)

| 1PM3-2-6 | **Comparison of Sequential Decoding and Direct Decoding of LDM in Next Generation Digital Terrestrial Television Broadcasting**

Yoko Tanaka (Tokyo University of Sceince), Akira Nakamura (Kanagawa University), Makoto Itami (Tokyo University of Sceince)

2AM1-1: Control and Fuzzy Systems

Date: March 1, 9:00–10:30
Room: Room1
Chair: Takuya Shindo (Nippon Institute of Technology)

2AM1-1-1 **Evaluation of Multiple Ultrasonic Sensors Based on Estimated Lyapunov Exponents**

Mio Kobayashi (NIT, Anan College), Satoshi Himura (NIT, Anan College), Takaya Ozaki (NIT, Anan College)

2AM1-1-2 **Evaluation of Real-time Electrochemical Impedance Estimation and Deterioration Analysis System for Li-ion Batteries**

Yuichiro Nishimura (Ritsumeikan University), Hideaki Ito (Ritsumeikan University), Shohei Irikuchi (Ritsumeikan University), Masahiro Fukui (Ritsumeikan University)

2AM1-1-3 **An area reproduction method using semicircular speaker array and masking sound**

Genki Harashima (Nagaoka University of Technology), Yasunori Sugita (Nagaoka University of Technology)

2AM1-1-4 **Accuracy Verification of Self-Positioning and Environmental Map Construction on Uneven Terrain for Weeding Robot**

Kyosuke Hamaguchi (Tokushima University), Hiroshi Suzuki (Tokushima University), Takahiro Kitajima (Tokushima University), Akinobu Kuwahara (Tokushima University), Takashi Yasuno (Tokushima University)

2AM1-1-5 **A Study on Human Detection Method using LiDAR Sensor for a Mobile Robot**

Yuki Matsuo (Konan University), Masahiro Wada (Konan University)

2AM1-2: Image Processing and Recognition 3

Date: March 1, 9:00–10:30
Room: Room2
Chair: Taishi Iriyama (Tamagawa University)

2AM1-2-1 **Parallel and cascaded connections of multi-scale convolutional neural networks for reconstruction-based anomaly detection**

Sochiro Terasaki (Kobe University), Nobutaka Kuroki (Kobe University), Masahiro Numa (Kobe University)

2AM1-2-2 **Steganography based Trojan Horse Malware**

Ryo Kumagai (Meijo University), Shu Takemoto (Meijo University), Yusuke Nozaki (Meijo University), Masaya Yoshikawa (Meijo University)

2AM1-2-3 **Improvement of the Sweet Potato Selection Accuracy Using K-Means Clustering**

Taichi Asaka (Shikoku University), Ayumu Takahashi (Shikoku University), Shunsuke Aoki (Shikoku University), Reina Harada (Shikoku University), Yasuteru Hosokawa (Shikoku University)

2AM1-2-4 **A Proposal of Non-destructive Measurement Method for Plant Growth Prediction**

Muhammad Anas bin Norizan (Ritsumeikan University), Taiga Abe (Ritsumeikan University), Tatsuki Yamagishi (Ritsumeikan University), Shugo Saito (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University)

`2AM1-2-5` **Multi-angle Data Augmentation using Deep Canonical Correlation Analysis**

Shinnosuke Isobe (Gifu University), Satoshi Tamura (Gifu University), Yuuto Gotoh (Ricoh), Masaki Nose (Ricoh)

2AM2-1: Speech Processing and Recognition 1

Date: March 1, 10:45–12:15
Room: Room1
Chair: Yosuke Sugiura (Saitama University)

`2AM2-1-1` **Source Selection Using Multiple Directions of Arrival Estimation Based on Blind Source Separation**

Koudai Mogi (Tokyo Metropolitan University), Taishi Nakashima (Tokyo Metropolitan University), Kouei Yamaoka (Tokyo Metropolitan University), Yukoh Wakabayashi (Tokyo Metropolitan University), Nobutaka Ono (Tokyo Metropolitan University)

`2AM2-1-2` **Optimized Ideal Ratio Mask Using Thresholds for Single-Channel Speech Separation Based on Wavelet Transform and Deep Neural Network**

Peng Chen (Ritsumeikan University), Haonan Wang (Ritsumeikan University), Kenta Iwai (Ritsumeikan University), Takanobu Nishiura (Ritsumeikan University)

`2AM2-1-3` **Study on Expressiveness of Speech Synthesis Using Multi-resolution Modulation-filtered Cochleagram**

Kaili Zhang (Japan Advanced Institute of Science and Technology), Masashi Unoki (Japan Advanced Institute of Science and Technology)

`2AM2-1-4` **Real-time Japanese Speech In-painting using Phoneme recognition**

Ayumu Moriya (Nagaoka University of Technology), Yasunori Sugita (Nagaoka University of Technology)

`2AM2-1-5` **A Generative Model for Vocal Tract Inversion Using Lower Formant Bandwidths and Empirical Mode Constraint**

Akito Nakamura (Tokai University), Tomohiro Takahashi (Tokai University)

2AM2-2: Information Security

Date: March 1, 10:45–12:15
Room: Room2
Chair: Yoko Uwate (Tokushima University)

`2AM2-2-1` **Study on robustness evaluation of Chaotic stream cipher against transmission errors**

Ren Namba (Meiji University), Hiroyuki Kamata (Meiji University)

`2AM2-2-2` **High-Level Synthesis against Authenticated Lightweight Cryptography Finalists**

Shu Takemoto (Meijo University), Yoshiya Ikezaki (Meijo University), Yusuke Nozaki (Meijo University), Masaya Yoshikawa (Meijo University)

`2AM2-2-3` **Round Number driven Evaluation for Low-Latency Cryptography MANTIS on FPGA**

Kosuke Hamaguchi (Meijo University), Shu Takemoto (Meijo University), Yusuke Nozaki (Meijo University), Masaya Yoshikawa (Meijo University)

`2AM2-2-4` **WDDL based Countermeasure of Midori and its Implementation Evaluation**

Shunsuke Miwa (Meijo University), Shu Takemoto (Meijo University), Yusuke Nozaki (Meijo University), Masaya Yoshikawa (Meijo University)

`2AM2-2-5` **Waveform Data Augmentation using Conditional VAE for Deep Learning Side-Channel Attacks against AES circuit**

Yuta Fukuda (Ritsumeikan University), Kota Yoshida (Ritsumeikan University), Kunihiro Kuroda (Ritsumeikan University), Takeshi Fujino (Ritsumeikan University)

2PM1-1: Medical Applications 2

Date: March 1, 13:05–14:35
Room: Room1
Chair: Chihiro Ikuta (NIT, Suzuka College)

`2PM1-1-1` **Classification of Multiple Classes for Chest X Ray Images Using Pre Trained CNN with Machine Learning Methods**

Hsin Yi Tseng (I-Shou University), Takahide Okamoto (Teikyo University), Akari Matsushima (Teikyo University), Yung Hui Huang (I-Shou University), Chi Yuan Wang (I-Shou University), Tai Been Chen (I-Shou University)

`2PM1-1-2` **Segmentation of LV on MDCT by Using Fully Convolutional Network**

Yi Qin Zhu (I-Shou University), Takahide Okamoto (Teikyo University), Akari Matsushima (Teikyo University), Yung Hui Huang (I-Shou University), Chi Yuan Wang (I-Shou University), Tai Been Chen (I-Shou University)

`2PM1-1-3` **Detection of Breast Cancer with Contrast Mammography Using YOLO**

Pei-Ying Lin (I-Shou University), Takahide Okamoto (Teikyo University), Akari Matsushima (Teikyo University), Chen-Pin Chou (Kaohsiung Veterans General Hospital), Yung-Hui Huang (I-Shou University), Tai-Been Chen (I-Shou University)

`2PM1-1-4` **Effect of Social Distancing on COVID-19 Infection Using a Multi-Agent Simulation**

Masaki Saito (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

`2PM1-1-5` **Sensor Fusion-based Emotion Classification In Virtual Reality Using Machine Learning**

Yi Liu (Tokyo Metropolitan University), Eri Sato-Shimokawara (Tokyo Metropolitan University), Toru Yamaguchi (Tokyo Metropolitan University)

2PM1-2: Sensor Network and Spread Spectrum

Date: March 1, 13:05–14:35
Room: Room2
Chair: Anuar bin Mohamed Kassim (Universiti Teknikal Malaysia Melaka)

2PM1-2-1 **Building an IoT system using AWS -the digitization of gateball as an example-**

Yasuhiro Sudo (Kanagawa Institute of Technology), Yuya Kubota (Kanagawa Institute of Technology), Ryo Takahashi (Kanagawa Institute of Technology), Syunsuke Shimokawa (Kanagawa Institute of Technology), Noriyuki Kawarazaki (Kanagawa Institute of Technology), Hiroshi Tanaka (Kanagawa Institute of Technology)

2PM1-2-2 **Spread Spectrum Based Image Watermarking with Morphological Component Analysis**

Yuki Yamada (Ehime University), Atsuya Tokunaga (Ehime University), Hiroki Okazaki (Ehime University), Toshiyuki Uto (Ehime University)

2PM1-2-3 **Impact of Packet Synchronization Timing Gaps on MC-CDMA based 3-modes On-demand WSN with Packet Combining Scheme**

Masanori Suetake (Ibaraki University), Gen Li (Ibaraki University), Hiromasa Habuchi (Ibaraki University), Yusuke Kozawa (Ibaraki University)

2PM1-2-4 **Design and Development of Intelligent Fertiliser Optimizer System for Small-scale Smart Fertigation Farm**

Nur-Al Aswad bin Zulkefli (UTeM), Anuar bin Mohamed Kassim (UTeM), Wan Mohd Bukhari Wan Daud (UTeM), Mohd Rusdy bin Yaacob (UTeM), Muhammad As Shakirin bin Abd Aziz (UTeM), Muhammad Mustaqiim bin Roslan (UTeM), Nur Syahmi binti Adzlan (UTeM), Awangku Khairul Ridzwan Awangku Jaya (Auro Technologies PLT), Takashi Yasuno (Tokushima University)

2PM1-2-5 **Design and development of in-situ soil and crop monitoring system for wide range plantation application**

Muhammad As Shakirin bin Abd Aziz (UTeM), Anuar bin Mohamed Kassim (UTeM), Wan Mohd Bukhari Wan Daud (UTeM), Mohd Rusdy bin Yaacob (UTeM), Muhammad Mustaqiim bin Roslan (UTeM), Nur-Al Aswad bin Zulkefli (UTeM), Awangku Khairul Ridzwan Awangku Jaya (Auro Technologies PLT), Takashi Yasuno (Tokushima University)

2PM2-1: Computer Vision

Date: March 1, 14:50–16:20
Room: Room1
Chair: Yoshitaka Itoh (Hokkaido University of Science)

2PM2-1-1 **Image Recognition of HDR Images Taken with Dual-Gain CIS**

Takuya Kitamura (Ritsumeikan University), Kota Yoshida (Ritsumeikan University), Tetsushi Ikeda (Ritsumeikan University), Shinichi Ikenaga (Brillnics Japan Inc), Isao Takayanagi (Brillnics Japan Inc), Shunsuke Okura (Ritsumeikan University)

2PM2-1-2 **Design and Development of Vision-Based Pest Identification for Crop Condition Monitoring**

Muhammad Mustaqiim bin Roslan (UTeM), Anuar bin Mohamed Kassim (UTeM), Wan Mohd Bukhari Wan Daud (UTeM), Mohd Rusdy bin Yaacob (UTeM), Muhammad As Shakirin bin Abd Aziz (UTeM), Nur-Al Aswad bin Zulkefli (UTeM), Awangku Khairul Ridzwan Awangku Jaya (Auro Technologies PLT), Takashi Yasuno (Tokushima University)

| 2PM2-1-3 | **Two-stage filter response normalization network for real image denoising** |

Yuwen Tai (Saitama University), Sugiura Yosuke (Saitama University), Yasui Nozomiko (Saitama University), Shimamura Tetsuya (Saitama University)

| 2PM2-1-4 | **HarDUnet++ for polyp segmentation** |

Kiet Tuan Do (Nagaoka University of Technology), Yasunori Sugita (Nagaoka University of Technology)

| 2PM2-1-5 | **The Effects of Sound Distance Attenuation and Light Intensity on Sound Recovery via Visual Microphone** |

Toshiaki Sugiura (Shizuoka University), Kohei Kunitate (Shizuoka University), Kaito Sekine (Shizuoka University), Yosuke Tatekura (Shizuoka University)

2PM2-2:   Speech Processing and Recognition 2

Date: March 1, 14:50–16:20
Room: Room2
Chair: Kenta Iwai (Ritsumeikan University)

| 2PM2-2-1 | **Semi-Supervised Learning Using Weakly Labeled Data Generated by GAN in Sound Event Detection** |

Kazuya Ouma (University of Tsukuba), Takeshi Yamada (University of Tsukuba), Shoji Makino (Waseda University)

| 2PM2-2-2 | **Blind Source Separation of Moving Sound Sources in Reverberant Indoor Environments** |

Ting Yu (Waseda University), Tetsuya Ueda (University of Tsukuba), Shoji Makino (Waseda University)

| 2PM2-2-3 | **Feature Mapping of Throat Microphone Considering Speaker Information** |

Ryoga Murate (Shiuzoka University), Masafumi Nishida (Shiuzoka University), Takashi Tsunakawa (Shiuzoka University), Masafumi Nishimura (Shiuzoka University)

| 2PM2-2-4 | **Evaluation of Feedback Methods for Speakers in Speech Rate Converted Conversation** |

Tamami Mizuta (Tokyo Denki University), Hiroto Saito (Tokyo Denki University)

| 2PM2-2-5 | **Replay Attack Detection using MFCC and ResNeWt18 for Automatic Speaker Verification** |

Anuwat Chaiwongyen (Japan Advanced Institute of Science and Technology), Waree Kongprawechnon (Sirindhorn International Institute of Technology Thammasat University), Jessada Karnjana (National Science and Technology Development Agency), Suradej Suradej (National Science and Technology Development Agency), Masashi Unoki (Japan Advanced Institute of Science and Technology)

2PM3-1:   Complex Systems

Date: March 1, 16:35–17:47
Room: Room1
Chair: Daisuke Ito (Gifu University)

| 2PM3-1-1 | **Synchronization and Clustering of Chaotic Circuit Networks with Hebbian Rule** |

Yoko Uwate (Tokushima University), Thomas Ott (ZHAW), Yoshifumi Nishio (Tokushima University)

| 2PM3-1-2 | **Study on Calculation Cost Reduction of Time Delay Estimation of Dynamical System using the Distance between Points by Sampling** |

Atsuhi Aikyo (Meiji University), Riki Watabe (Meiji University), Hiroyuki Kamata (Meiji University)

| 2PM3-1-3 | **Evaluation of Human Visual Characteristics Using Visual Recognition Measurement Device with Full Color LED** |

Koki Hamaguchi (National Institute of Technology, Anan College), Kamano Masaru (National Institute of Technology, Anan College), Emiko Yasuno (National Institute of Technology, Anan College)

| 2PM3-1-4 | **Application of synchronized backscatter sensors to sign language motion classification** |

Tsukasa Wakao (Kanagawa Institute of Technology), Tatsuya Sato (Kanagawa Institute of Technology), Wataru Odagiri (Kanagawa Institute of Technology), Yuusuke Kawakita (Kanagawa Institute of Technology), Hiromitsu Nishimura (Kanagawa Institute of Technology), Hiroshi Tanaka (Kanagawa Institute of Technology), Jin Mitsugi (Keio University)

2PM3-2: Detection

Date: March 1, 16:35–18:05
Room: Room2
Chair: Arman Hadi Azahar (Universiti Teknikal Malaysia Melaka)

| 2PM3-2-1 | **Anomalous Sound Detection by Non-linear Adaptation** |

Junya Yamashita (Gifu university), Hayato Mori (Gifu university), Satoshi Tamura (Gifu university), Satoru Hayamizu (Gifu university)

| 2PM3-2-2 | **Pothole Detection Based on Deep Learning** |

Weiyu Wang (Takushoku University), Yihsin Ho (Takushoku University)

| 2PM3-2-3 | **Design and Analysis: Ultrasonic Sensor for Car Drive Head Positioning Detection** |

HAZMAN HAKIM HASAN (UNIVERSITI TEKNIKAL MALAYSIA MELAKA), ARMAN HADI AZAHAR (UNIVERSITI TEKNIKAL MALAYSIA MELAKA), ANUAR MOHAMED KASSIM (UNIVERSITI TEKNIKAL MALAYSIA MELAKA), MUHAMAD AIZAT ZULKIFLI (UNIVERSITI TEKNIKAL MALAYSIA MELAKA), AMAR FAIZ ZAINAL ABIDIN (UNIVERSITI TEKNIKAL MALAYSIA MELAKA), MUHAMMAD IZZAT ZAKWAN MOHD ZABIDI (UNIVERSITI TEKNIKAL MALAYSIA MELAKA), MOHD BADRIL NOR SHAH (UNIVERSITI TEKNIKAL MALAYSIA MELAKA), SAIFULLAH SALAM (UNIVERSITI TEKNIKAL MALAYSIA MELAKA), ROZILAWATI MOHD NOR (UNIVERSITI TEKNIKAL MALAYSIA MELAKA), WAN MOHD BUKHARI WAN DAUD (UNIVERSITI TEKNIKAL MALAYSIA MELAKA)

| 2PM3-2-4 | **Development of Spectacles-type Obstacle Detection System Using a Depth Camera for Visually Impaired Persons** |

Yuki Yamazaki (Tokushima University), Hiroshi Suzuki (Tokushima University), Takahiro Kitajima (Tokushima University), Akinobu Kuwahara (Tokushima University), Takashi Yasuno (Tokushima University), Masahide Hojo (Tokushima University)

| 2PM3-2-5 | **Detection of pulmonary vein reconnection by anoGAN** |

Daisuke Munakata (Yamaguchi University, Yamaguchi Prefectural Grand Medical Center), Takeshi Ueyama (Yamaguchi Prefectural Grand Medical Center), Noriaki Suetake (Yamaguchi University), Eiji Uchino (Yamaguchi University)