

# Provisional Session Schedule as of February 22, 2016

	Kaiulani I	Kaiulani II	Kaiulani III	Hawaii
March 7, 10:00–11:30	7AM1-1: Speech Processing 1	7AM1-2: Complex Networks and Systems	7AM1-3: Estimation 1	7AM1-4: Bio-Signal Processing 1
March 7, 13:00–14:30	7PM1-1: Image Processing 1	7PM1-2: Optical Communications 1	7PM1-3: Estimation 2	7PM1-4: Computer Vision and Speech Synthesys
March 7, 14:50–16:40	7PM2-1: Speech Processing 2	7PM2-2: Wireless Communication 1	7PM2-3: Evolutionary Computation	7PM2-4: Filter and Modeling
March 8, 9:10–10:40	8AM1-1: [Special Session] Signal Processing for Social Welfare 1	8AM1-2: Information Security	8AM1-3: Circuit and Design 1	8AM1-4: Computer Vision
March 8, 11:00–12:30	8AM2-1: [Special Session] Signal Processing for Social Welfare 2	8AM2-2: Optical Communications 2	8AM2-3: Circuit and Design 2	8AM2-4: Bio-Signal Processing 2
March 8, 13:30–15:00	8PM1-1: Image Processing 2	8PM1-2: Wireless Communication 2	8PM1-3: Synchronization	8PM1-4: Adaptive Systems and Learning System
March 8, 15:20–16:50	8PM2-1: Signal Processing and Applications	8PM2-2: Wireless Communications 3	8PM2-3: Optimization	8PM2-4: Error Control Coding
March 9, 9:10–10:40	9AM1-1: Image Processing 3	9AM1-2: [Special Session] Computer Network Technologies	9AM1-3: Nonlinear Systems and Networks 1	
March 9, 11:00–12:30	9AM2-1: Detection and Positioning 1	9AM2-2: Sensor Network and Ad-hoc Network 1	9AM2-3: Nonlinear Systems and Networks 2	
March 9, 13:30–15:00	9PM1-1: Detection and Positioning 2	9PM1-2: Wireless Communications 4	9PM1-3: Nonlinear Systems and Networks 3	
March 9, 15:20–16:40	9PM2-1: Sensor Network and Ad-hoc Network 2	9PM2-2: Wireless Communications 5	9PM2-3: Control and Fuzzy Systems	

## 7AM1-1: Speech Processing 1

Date: March 7, 10:00–11:30

Room: Kaiulani I

Chair: Shuichi Sakamoto (Tohoku University)

### 7AM1-1-1 Blind Source Separation Using Silent Interval of Human Speech in Noisy Environments

Takaaki Ishibashi (National Institute of Technology, Kumamoto College)

### 7AM1-1-2 Robust Voice Activity Detection Method Using MFS Criteria

Shunsuke Fukuoka (Tokyo Denki University), Shigeo Wada (Tokyo Denki University)

### 7AM1-1-3 Interactive Directivity Control Using Dodecahedron Loudspeaker Array

Kazuna Bando (The University of Electro-Communications), Yoichi Haneda (The University of Electro-Communications)

### 7AM1-1-4 A Study on Quality Improvement of HMM-based Synthesized Voices Using Asymmetric Bilinear Model

Tuan Dinh-Anh (Japan Advanced Institute of Science and Technology), Daisuke Morikawa (Japan Advanced Institute of Science and Technology), Masato Akagi (Japan Advanced Institute of Science and Technology)

### 7AM1-1-5 Automatic Speech Emotion Recognition in Chinese Using a Three-layered Model in Dimensional Approach

Xingfeng Li (Japan Advanced Institute of Science and Technology), Masato Akagi (Japan Advanced Institute of Science and Technology)

## 7AM1-2: Complex Networks and Systems

Date: March 7, 10:00–11:30

Room: Kaiulani II

Chair: Hironori Kumeno (National Institute of Technology, Matsue College)

### 7AM1-2-1 Indoor-environmental Sound Discrimination Based on Deep Neural Network with Mel-cepstrum

Sakiko Mishima (Ritsumeikan University), Yukoh Wakabayashi (Ritsumeikan University), Takahiro Fukumori (Ritsumeikan University), Masato Nakayama (Ritsumeikan University), Takano Nishiura (Ritsumeikan University)

### 7AM1-2-2 Detection of Abnormal Stock Prices with Autoencoder

Hiroyuki Gotou (Ibaraki University), Tomoya Suzuki (Ibaraki University)

### 7AM1-2-3 Authentication System Using Pattern Dynamics of Coupled Chaotic Maps

Shintaro Tanaka (Konan University), Masahiro Wada (Konan University)

### 7AM1-2-4 Synchronization in Complex Networks with Dispersion by Coupled Parametrically Excited Oscillators

Kosuke Oi (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

### 7AM1-2-5 Synchronization of Small-World Coupled Chaotic Circuits with or without Parameter Mismatch

Kenta Ago (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

## 7AM1-3: Estimation 1

Date: March 7, 10:00–11:30

Room: Kaiulani III

Chair: Tomoya Suzuki (Ibaraki University)

### 7AM1-3-1 Line Wait-Time Estimation Method among Cooperated User's Smartphones Using BLE

Yujin Miyagawa (Sophia University), Masakatsu Ogawa (Sophia University)

### 7AM1-3-2 A New Matrix Decomposition Method for DOSY Based on Both the Column Space Estimation and the Eigenvalue Decomposition

Yuhō Tanaka (Tokyo University of Science), Tomoki Nakao (JEOL RESONANCE Inc.), Kazunori Uruma (Tokyo University of Science), Kenya Izumi (JEOL RESONANCE Inc.), Hiroaki Utumi (JEOL RESONANCE Inc.), Toshihiro Furukawa (Tokyo University of Science)

### 7AM1-3-3 Pedestrian Motion Estimation Based on Just-In-Time Method

Alateeq Salman (Kogakuin University), Katsumi Konishi (Kogakuin University)

### 7AM1-3-4 SINR Estimation Based on Subspace Projection

Norisato Suga (Tokyo University of Science), Toshihiro Furukawa (Tokyo University of Science)

### 7AM1-3-5 Evaluation of Acoustic Measurement System Based on Intensity Fluctuation of Reflected Laser

Tomoyuki Mizuno (Ritsumeikan University), Yukoh Wakabayashi (Ritsumeikan University), Takahiro Fukumori (Ritsumeikan University), Masato Nakayama (Ritsumeikan University), Takano Nishiura (Ritsumeikan University)

## 7AM1-4: Bio-Signal Processing 1

Date: March 7, 10:00–11:30

Room: Hawaii

Chair: Satoshi Suzuki (Tokyo Denki University)

### 7AM1-4-1 Reliability Function of Discrete Memoryless Biometrical Identification Systems

Vamoua Yachongka (The University of Electro-Communications), Hideki Yagi (The University of Electro-Communications)

### 7AM1-4-2 The Development of e-Learning System for English Rhythm by the Biosignals

Kotaro Wada (Kyushu Institute of Technology), Kiyoshisa Natsume (Kyushu Institute of Technology)

### 7AM1-4-3 Nonlinear Analysis of Brain Wave During Eyes-open and Eyes-Closed Conditions in the Visual Cortex

Hiromi Sasaki (Meiji University), Kyohei Kamiyama (Meiji University), Yumie Ono (Meiji University), Hiroyuki Kamata (Meiji University)

### 7AM1-4-4 Fetal Electrocardiographic Signal Extraction from Maternal Abdominal Electrical Potential with Principal Component Analysis and Template Subtraction

Takuya Tamura (University of Yamanashi), Yutaka Suzuki (University of Yamanashi), Masanori Hanawa (University of Yamanashi)

### 7AM1-4-5 Elemental Study on Noise-Reduction Method for Electrocardiogram by Using a Conductive Fabric Sensor

Yutaka Suzuki (University of Yamanashi), Osamu Sakata (University of Yamanashi), Masayuki Morisawa (University of Yamanashi)

## 7PM1-1: Image Processing 1

Date: March 7, 13:00–14:30

Room: Kaiulani I

Chair: Nobutaka Kuroki (Kobe University)

### 7PM1-1-1 Evaluation of the Iterative Reconstruction of CT Images Using Channelized Hotelling Observer

Toru Ishibashi (Teikyo University), Takahide Okamoto (Teikyo University), Shigehiko Katsuragawa (Teikyo University), Hiroshi Tomizawa (Teikyo University), Hideaki Haneishi (Chiba University)

### 7PM1-1-2 Implementation of Cellular Automata-Based Pixel-Level Snakes on CAM<sup>2</sup>

Shogo Nishida (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University), Tomohiro Fujita (Ritsumeikan University), Takeshi Ogura (Ritsumeikan University)

### 7PM1-1-3 Nearest-Neighbor Sparsely Connected Multi-Layer Perceptron for PAD Calibration

Marianne Hromalik (State University of New York at Oswego), Ben Paretzky (State University of New York at Oswego), Hugh Philipp (Cornell University), Kate Shank (Cornell University), Mark Tate (Cornell University), Sol Gruner (Cornell University)

### 7PM1-1-4 Morphological Pattern Spectrum-Based Image Manipulation Detection for Compression Data

Yoshitaka Nakashima (Ritsumeikan University), Yuki Mizuno (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University), Takeshi Fujino (Ritsumeikan University)

### 7PM1-1-5 Kindergartener Guarding by a New Proposed Identification Method Using Clothes Feature

Lifeng Zhang (Kyushu Institute of Technology), Nozomi Matsuda (Kyushu Institute of Technology), Qian Fan (Kyushu Institute of Technology), Seiichi Serikawa (Kyushu Institute of Technology)

## 7PM1-2: Optical Communications 1

Date: March 7, 13:00–14:30

Room: Kaiulani II

Chair: Hiroyuki Yashima (Tokyo University of Science)

### 7PM1-2-1 Proposal on How to Implement Visible Light Communication System

Tatsuya Yonezaki (Sophia University), Masakatsu Ogawa (Sophia University), Yuta Ikeda (Ryukoku University), Wataru Uemura (Ryukoku University)

### 7PM1-2-2 A Study of Dimming Scheme for Digital Color Shift Keying

Naoya Murata (Tokyo University of Science), Yusuke Kozawa (Tokyo University of Science), Yohtaro Umeda (Tokyo University of Science)

### 7PM1-2-3 Data-Rate-Enhanced Optical-Wireless Code-Shift-Keying System Having Two-Stage Demodulation

Shota Takayanagi (Ibaraki University), Hiromasa Habuchi (Ibaraki University), Yusuke Takamaru (Ibaraki University),

Yusuke Kozawa (Tokyo University of Science)

**7PM1-2-4 Rigorous Symbol Error Rate Analysis of Hierarchical MPPM-CNK through Optical Wire-less Channel**

Atsuhiko Takahashi (Ibaraki University), Hiromasa Habuchi (Ibaraki University), Yusuke Kozawa (Tokyo University of Science)

**7PM1-2-5 Localization on Spatial Sound Image with Multiple Parametric Loudspeakers**

Shinya Komori (Ritsumeikan University), Daisuke Ikefuji (Ritsumeikan University), Takahiro Fukumori (Ritsumeikan University), Masato Nakayama (Ritsumeikan University), Takanobu Nishiura (Ritsumeikan University)

## 7PM1-3: Estimation 2

Date: March 7, 13:00–14:30

Room: Kaiulani III

Chair: Takashi Yasuno (Tokushima University)

**7PM1-3-1 Pseudo-Formal Linearization of Polynomial Type Using Automatic Choosing Function and its Application to Nonlinear Filter**

Kazuo Komatsu (National Institute of Technology, Kumamoto College), Hitoshi Takata (Kagoshima University)

**7PM1-3-2 Latent Class Model Analysis Based on the Variational Bayes**

Manabu Kobayashi (Shonan Institute of Technology), Masayuki Goto (Waseda University), Toshiyasu Matsushima (Waseda University), Shigeichi Hirasawa (Waseda University)

**7PM1-3-3 PSF Estimation for Restoration of Zoom-Blurred Endoscope Images**

Kenshi Otsuzumi (Meiji University), Yasutoshi Ishihara (Meiji University)

**7PM1-3-4 Development and Usability Evaluation of App to Manage Children's Health Based on Activity Recognition**

Nobuyuki Abe (Tokyo Denki University), Shuhei Kurashima (Tokyo Denki University), Satoshi Suzuki (Tokyo Denki University)

**7PM1-3-5 Highly Accurate Method for Estimating Movement State of Smartphone Users**

Keisuke Yoshida (Tokyo Denki University), Shogo Matsuno (The University of Electro-Communications), Minoru Ohyama (Tokyo Denki University)

## 7PM1-4: Computer Vision and Speech Synthesis

Date: March 7, 13:00–14:30

Room: Hawaii

Chair: Masashi Unoki (JAIST)

**7PM1-4-1 Rain Noise Detection Based on Kalman Filter for Image Processing**

Chi-An Chen (Waseda University), Yun-Ting Liao (Waseda University), Kui-Ting Chen (Waseda University), Takaaki Baba (Waseda University)

**7PM1-4-2 Estimation of Walking Movement of Human by Applying Particle Filter**

Shota Kikuchi (Tokyo University of Science), Katsumi Konishi (Kogakuin University), Tomohiro Takahashi (Tokyo Uni-

versity of Science), Toshihiro Furukawa (Tokyo University of Science)

**7PM1-4-3 Implementation of a Sensor Fusion Algorithm for Fast Target Recognition with Camera and Radar Sensors**

Yohei Oishi (The University of Kitakyushu), Isamu Matsunami (The University of Kitakyushu)

**7PM1-4-4 Study on the Analysis and Synthesis of Phoneme Based on Chaotic Characteristic**

Keisuke Karijuku (Meiji University), Naoyuki Watanabe (Meiji University), Kyohei Kamiyama (Meiji University), Hiroyuki Kamata (Meiji University)

**7PM1-4-5 A Study on Applying Target Prediction Model to Parameterize Power Envelope of Emotional Speech**

Yawen Xue (Japan Advanced Institute of Science and Technology), Masato Akagi (Japan Advanced Institute of Science and Technology)

## 7PM2-1: Speech Processing 2

Date: March 7, 14:50–16:40

Room: Kaiulani I

Chair: Youichi Haneda (The University Electro-Communications)

**7PM2-1-1 Polyphonic Music Transcription Using Supervised Nonnegative Matrix Factorization Combined with Musical Key Estimation**

Kodai Fujita (Meiji University), Takahiro Murakami (Meiji University)

**7PM2-1-2 Study on IIR Implementation for Modulation Transfer Function of Room Impulse Response**

Yuta Kashihara (Japan Advanced Institute of Science and Technology), Masashi Unoki (Japan Advanced Institute of Science and Technology)

**7PM2-1-3 Study on Effects of Speech Production during Delayed Auditory Feedback for Air-conducted and Bone-Conducted Speech**

Teruki Toya (Japan Advanced Institute of Science and Technology), Daisuke Ishikawa (Japan Advanced Institute of Science and Technology), Ryota Miyauchi (Japan Advanced Institute of Science and Technology), Kazushi Nishimoto (Japan Advanced Institute of Science and Technology), Masashi Unoki (Japan Advanced Institute of Science and Technology)

**7PM2-1-4 Design of a Real-time Sound Field Rendering Processor**

Tan Yiyu (Japan Advanced Institute of Science and Technology), Yasushi Inoguchi (Japan Advanced Institute of Science and Technology), Makoto Otani (Kyoto University), Yukio Iwaya (Tohoku Gakuin University), Takao Tsuchiya (Doshisha University)

**7PM2-1-5 Peak-Detection-Based Tempo Estimation Method**

Jun Futohashi (Ritsumeikan University), Kazuhiko Nakajima (Ritsumeikan University), Tomohiro Fujita (Ritsumeikan University)

**7PM2-1-6 Discrimination Between Infant-Directed and Adult-Directed Speech Using Neural Networks**

Keisuke Miyata (Tokyo University of Science), Kaori Kuroda (Tokyo University of Science), Mikio Hasegawa (Tokyo University of Science), Kazuyuki Shinohara (Graduate School of Biomedical Sciences)

## 7PM2-2: Wireless Communication 1

Date: March 7, 14:50–16:40

Room: Kaiulani II

Chair: Masakatsu Ogawa (Sophia University)

### 7PM2-2-1 Transmitter Identification Sensing in Cognitive Radio using Energy Detection with the Statistical Information

Vannapha Southivong (The University of Electro-Communications), Takeo Fujii (The University of Electro-Communications)

### 7PM2-2-2 A White-Space Width Estimation with Windowed FFT Based Energy Detection

Mai Ohta (Fukuoka University), Osamu Takyu (Shinshu University), Takeo Fujii (The University of Electro-Communications), Makoto Taromaru (Fukuoka University)

### 7PM2-2-3 A Study of UWB Interference Avoidance using GFDM Technique

Masakazu Kizawa (Meiji University), Tetsushi Ikegami (Meiji University)

### 7PM2-2-4 CSMA/CA Evaluation for Packet Error Rate of ZigBee

Naoki Shimada (Meiji University), Tetsushi Ikegami (Meiji University)

### 7PM2-2-5 Discomfort Reduction Based on Mitigation of Time Fluctuation for Infant Cry

Aomi Kobayashi (Ritsumeikan University), Daisuke Ikefuji (Ritsumeikan University), Takahiro Fukumori (Ritsumeikan University), Masato Nakayama (Ritsumeikan University), Takanobu Nishiura (Ritsumeikan University)

### 7PM2-2-6 Effect of Relay Position in Full-Duplex Cooperative Communication Based on Spatial Modulation

Kagetora Ieyoshi (Kagawa University), Koji Ishii (Kagawa University)

## 7PM2-3: Evolutionary Computation

Date: March 7, 14:50–16:40

Room: Kaiulani III

Chair: Hiroshi Suzuki (Tokushima University)

### 7PM2-3-1 AMSPSO with a Boundary Customer Assignment for Multi-Depot Vehicle Routing Problem

Yang Zeng (Waseda University), Yun-Ting Liao (Waseda University), Kui-Ting Chen (Waseda University), Takaaki Baba (Waseda University)

### 7PM2-3-2 A Particle Swarm Optimization with Hybrid Multi-Swarm Strategy

Yun-Ting Liao (Waseda University), Naoya Akieda (Waseda University), Kui-Ting Chen (Waseda University), Takaaki Baba (Waseda University)

### 7PM2-3-3 A Decoding Method of AMSPSO for CVRPPD

Liang Qi (Waseda University), Yun-Ting Liao (Waseda University), Kui-Ting Chen (Waseda University), Takaaki Baba (Waseda University)

### 7PM2-3-4 Dual Processing Multi-Objective Particle Swarm Optimization Using Improved Crowding Distance Assignment

Yuki Hasegawa (Nippon Institute of Technology), Takayuki Kimura (Nippon Institute of Technology), Kenya Jin'no (Nippon Institute of Technology)

**7PM2-3-5 A Study on Directional Repair of Infeasible Solutions for Multi-Objective Knapsack Problems**

Minami Miyakawa (The University of Electro-Communications), Keiki Takadama (The University of Electro-Communications), Hiroyuki Sato (The University of Electro-Communications)

**7PM2-3-6 A Study on Evolutionary Multi-level Robust Solution Search for Multi-objective Optimization Involving Multi-dimensional Noise**

Tomohisa Hashimoto (The University of Electro-Communications), Minami Miyakawa (The University of Electro-Communications), Keiki Takadama (The University of Electro-Communications), Hiroyuki Sato (The University of Electro-Communications)

## 7PM2-4: Filter and Modeling

Date: March 7, 14:50–16:40

Room: Hawaii

Chair: Hiroaki Kurokawa (Tokyo University of Technology)

**7PM2-4-1 Evaluation of Robustness of the SENZI 3D Sound Space Acquisition System Using a Spherical Microphone Array**

Yuuto Wada (Tohoku University), Shuichi Sakamoto (Tohoku University), Yôiti Suzuki (Tohoku University)

**7PM2-4-2 Applicability of Equalized FDM System Using Mach-Zehnder Filters**

Isamu Wakabayashi (Tokyo University of Science), Ryo Oiwa (Tokyo University of Science), Takayuki Kawahara (Tokyo University of Science)

**7PM2-4-3 Compression of Spherical Microphone Array Recordings Using Eigenvalue Decomposition**

Hironori Sato (Tohoku University), Arif Wicaksono (Tohoku University), Shuichi Sakamoto (Tohoku University), Cesar Salvador (Tohoku University), Jorge Trevino (Tohoku University), Yôiti Suzuki (Tohoku University)

**7PM2-4-4 The Relationship Between the Classification Performance and Response Distribution of Neurons on Neocognitron**

Shoichiro Sato (Tokyo University of Technology), Masayuki Kikuchi (Tokyo University of Technology)

**7PM2-4-5 Non-Task-Oriented Dialogue System Using AIML - Calculating Similarities of Sentences by Word2Vec, Thesaurus and Syntactic Analysis -**

Shinnosuke Motegi (Tokyo University of Technology), Atsushi Hayashi (Tokyo University of Technology), Shino Iwashita (Tokyo University of Technology)

## 8AM1-1: [Special Session] Signal Processing for Social Welfare 1

Date: March 8, 9:10–10:40

Room: Kaiulani I

Organizer: Seiichi Serikawa (Kyusyu Institute of Technology)

Chair: Seiichi Serikawa (Kyusyu Institute of Technology)

**8AM1-1-1 Depth Measurement Method using Perspective to Single Obstacle-Sensor**

Shingo Aramaki (Yamaguchi University), Kenkichiro Okamoto (Yamaguchi University), Shenglin Mu (National Institute of Advanced Industrial Science and Technology)



tion of Technology), Kanya Tanaka (Hiroshima College), Shota Nakashima (Yamaguchi University)

**8AM1-1-2 A Neuro-Fuzzy Reinforcement Learning System for Autonomous Robot Dealing with Continuous Space**

Takashi Kuremoto (Yamaguchi University), Kazuhiro Tsubaki (Yamaguchi University), Masanao Obayashi (Yamaguchi University), Shingo Mabu (Yamaguchi University), Kunikazu Kobayashi (Aichi Prefectural University)

**8AM1-1-3 Two-Axis Drive of Automatic Fire Extinguish System for Residential Use**

Koki Yamaguchi (National Institute of Technology, Kitakyushu College), Hayato Takahashi (National Institute of Technology, Kitakyushu College), Masahiko Hanada (Hanada Setsubi), Hiromichi Hanada (Hanada Setsubi), Kanya Mizuguchi (Hanada Setsubi), Lifeng Zhang (Kyushu Institute of Technology), Seiichi Serikawa (Kyushu Institute of Technology), Yuhki Kitazono (National Institute of Technology, Kitakyushu College)

**8AM1-1-4 Comparison of Intelligent PID Control of Ultrasonic Motor for Welfare Applications**

Shenglin Mu (National Institution of Technology, Hiroshima College), Kanya Tanaka (Yamaguchi University), Shota Nakashima (Yamaguchi University), Hiromosa Tomimoto (Yamaguchi University), Shingo Aramaki (Yamaguchi University)

## 8AM1-2: Information Security

Date: March 8, 9:10–10:40

Room: Kaiulani II

Chair: Hideyuki Torii (Kanagawa Institute of Technology)

**8AM1-2-1 Electromagnetic Analysis for a Lightweight Block Cipher PRESENT in Frequency Domain**

Yusuke Nozaki (Meijo University), Ryoma Matsuhisa (Meijo University), Kohei Nohara (Meijo University), Kensaku Asahi (Meijo University), Masaya Yoshikawa (Meijo University)

**8AM1-2-2 Verification of Tamper Resistance for Cryptographic Circuit Using a Random Number Masking**

Ryoma Matsuhisa (Meijo University), Yusuke Nozaki (Meijo University), Kohei Nohara (Meijo University), Kensaku Asahi (Meijo University), Masaya Yoshikawa (Meijo University)

**8AM1-2-3 Study on the Chaotic 64-bit Block Cipher**

Yasuaki Tsuruoka (Meiji University), Tomofumi Nakasone (Meiji University), Kyohei Kamiyama (Meiji University), Hiroyuki Kamata (Meiji University)

**8AM1-2-4 Fault Injection Attack for Authenticated Encryption AES-OTR**

Kohei Nohara (Meijo University), Ryoma Matsuhisa (Meijo University), Yusuke Nozaki (Meijo University), Kensaku Asahi (Meijo University), Masaya Yoshikawa (Meijo University)

**8AM1-2-5 Face Anti-spoofing Using Histogram of Oriented Gradients**

Hyunho Kang (Tokyo University of Science), Isamu Wakabayashi (Tokyo University of Science), Keiichi Iwamura (Tokyo University of Science)

## 8AM1-3: Circuit and Design 1

Date: March 8, 9:10–10:40

Room: Kaiulani III

Chair: Tetsushi Ueta (Tokushima University)

### 8AM1-3-1 Chaotic Delta Sigma Modulator with Pseudo MASH Structure for Using Low Frequency Sensors

Nozomi Watanabe (Aoyama Gakuin University), Ryo Makishima (Aoyama Gakuin University), Eri Ioka (Aoyama Gakuin University)

### 8AM1-3-2 Design of Low Power AFE Circuit supporting IR Array Sensor for Human Detection

Shota Ueguchi (Ritsumeikan University), Mitsuhiro Nagao (Ritsumeikan University), Toshio Kumamoto (Osaka Sangyo University), Masayoshi Shirahata (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University), Takeshi Fujino (Ritsumeikan University)

### 8AM1-3-3 Effect of Coupling Coefficient on Phase Noise in Multi-Phase CMOS LC Oscillators Coupled by Mutual Inductors

Tatsuya Imanishi (University of Fukui), Seiichiro Moro (University of Fukui)

### 8AM1-3-4 Optimization of DSM Sampling Frequency and Interleaving Frequency for Bi-level Quadrature-modulation EPWM Transmitter

Takashi Noda (Tokyo University of Science), Yohtaro Umeda (Tokyo University of Science), Yusuke Kozawa (Tokyo University of Science)

### 8AM1-3-5 Hardware Implementation of AMSPSO Based on Asynchronous Technology

Kui-Ting Chen (Waseda University), Peikun Wang (Waseda University), Yun-Ting Liao (Waseda University), Takaaki Baba (Waseda University)

## 8AM1-4: Computer Vision

Date: March 8, 9:10–10:40

Room: Hawaii

Chair: Kiyoshi Hashimoto (Keio University)

### 8AM1-4-1 Automatic Match Analysis in Sports Videos Using Bayesian Network and Random Forest

Junji Kurano (Keio University), Masaki Hayashi (Keio University), Masamoto Tanabiki (Panasonic), Junko Furuyama (Panasonic), Yoshimitsu Aoki (Keio University)

### 8AM1-4-2 Non-Contact and Non-Invasive Swallowing Function Evaluation System by Adam's Apple Tracking

Ayaka Tomonari (Keio University), Yoshimitsu Aoki (Keio University)

### 8AM1-4-3 Parts Based Shape Model Generation for Robust Human Tracking

Kiyoshi Hashimoto (Keio University), Yuji Sato (Panasonic Corporation), Masamoto Tanabiki (Panasonic Corporation), Yoshimitsu Aoki (Keio University)

### 8AM1-4-4 Multi-View Action Recognition by Extracting Posture Features Using Convolutional Neural Networks

Yuta Kudo (Keio University), Takehiko Sashida (KONICA MINOLTA Inc.), Yoshimitsu Aoki (Keio University)

### 8AM1-4-5 **Autonomous Robot Navigation System with General Maps and Camera Images**

Yukiya Matsuoka (Meiji University), Kazuyuki Morioka (Meiji University)

## 8AM2-1: [Special Session] Signal Processing for Social Welfare 2

Date: March 8, 11:00–12:30

Room: Kaiulani I

Organizer: Seiichi Serikawa (Kyusyu Institute of Technology)

Chair: Seiichi Serikawa (Kyusyu Institute of Technology)

### 8AM2-1-1 **Text-reading Support System for the Visually Impaired on Web Sites**

Takumi Misawa (Kyushu Institute of Technology), Yuto Tanaka (Kyushu Institute of Technology), Yoshihisa Nakatoh (Kyushu Institute of Technology)

### 8AM2-1-2 **Improvement of Word Intelligibility Based on ITD and ILD Control on Binaural Hearing Aids**

Ryota Fujiwara (Kyushu Institute of Technology), Yuto Tanaka (Kyushu Institute of Technology), Yoshihisa Nakatoh (Kyushu Institute of Technology)

### 8AM2-1-3 **Development of Wearable Speech Enhancement System for Laryngectomees**

Kenta Kimura (Osaka Institute of Technology), Kenji Matsui (Osaka Institute of technology), Yoshihisa Nakatoh (Kyushu Institute of Technology), Yumiko Ono Kato (St. Marianna University School of Medicine)

### 8AM2-1-4 **Improvement of Speech Intelligibility for Elderly People Based on Formant Frequency Shift**

Yuto Tanaka (Kyushu Institute of Technology), Mitsunori Mizumachi (Kyushu Institute of Technology), Yoshihisa Nakatoh (Kyushu Institute of Technology)

## 8AM2-2: Optical Communications 2

Date: March 8, 11:00–12:30

Room: Kaiulani II

Chair: Kohei Ohno (Meiji University)

### 8AM2-2-1 **Impact of Improved On-Off-Keyed Turbo-Code System in Optical Wireless Channel**

Yuto Matsuda (Ibaraki University), Hiromasa Habuchi (Ibaraki University), Yusuke Kozawa (Tokyo University of Science)

### 8AM2-2-2 **All-Optical NOR Gate Using XPM and XGM in QD-SOA Based MZI**

Fumiya Sato (Tokyo University of Science), Gou Hosoya (Tokyo University of Science), Hiroyuki Yashima (Tokyo University of Science)

### 8AM2-2-3 **Differential-OOK System for Underwater Visible light Communications**

Mitsuru Saotome (Tokyo University of Science), Yusuke Kozawa (Tokyo University of Science), Yohtaro Umeda (Tokyo University of Science), Hiromasa Habuchi (Ibaraki University)

### 8AM2-2-4 **All Optical CDMA Using All Optical Device**

Masahiro Nishino (Tokyo University of Science), Gou Hosoya (Tokyo University of Science), Hiroyuki Yashima (Tokyo University of Science)

University of Science)

**8AM2-2-5 Study on Construction of a Matched Filter Bank for an Optical ZCZ Sequence Set with Zero-Correlation Zone 2<sup>z</sup>**

Yasuaki Ohira (Yamaguchi University), Takahiro Matsumoto (Yamaguchi University), Hideyuki Torii (Kanagawa Institute of Technology), Yuta Ida (Yamaguchi University), Shinya Matsufuji (Yamaguchi University)

## 8AM2-3: Circuit and Design 2

Date: March 8, 11:00–12:30

Room: Kaiulani III

Chair: Masatoshi Sato (Tokyo Metropolitan University)

**8AM2-3-1 A Hardware Architecture of CORDIC with Improved Rotation Strategy**

Yu Zhang (Waseda university), Yun-Ting Liao (Waseda university), Kui-Ting Chen (Waseda university), Takaaki Baba (Waseda university)

**8AM2-3-2 Evaluation of Inductor Copper Loss Impact on Boost Ratio Using System-Level Simulation of Switching Converter**

Kota Miyadokoro (Ritsumeikan University), Hironori Kubo (Ritsumeikan University), Mizuri Niwano (Ritsumeikan University), Ami Tanaka (Ritsumeikan University), Tomohiro Fujita (Ritsumeikan University)

**8AM2-3-3 Evaluation of Ternary Content Addressable Memory with Individuality on FPGA**

Shinya Kimura (Ritsumeikan University), Takuma Watanabe (Ritsumeikan University), Ryohei Yukawa (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University), Tomohiro Fujita (Ritsumeikan University), Takeshi Ogura (Ritsumeikan University)

**8AM2-3-4 Implementation of a Crater Matching Algorithm Using ETSM in FPGA**

Izuru Nomura (Meiji University), Tatsuya Takino (Meiji University), Misako Moribe (Meiji University), Hiroyuki Kamata (Meiji University)

**8AM2-3-5 Analytical Expression of Phase-Controlled Class-D Inverter at Any Duty Ratio**

Yuta Yamada (Chiba University), Tomoharu Nagashima (Chiba University), Hiroo Sekiya (Chiba University)

## 8AM2-4: Bio-Signal Processing 2

Date: March 8, 11:00–12:30

Room: Hawaii

Chair: Kaori Kuroda (Tokyo University of Science)

**8AM2-4-1 Low-cost and Highly Reliable MIMAMORI Device for Patient Monitoring Using Depth Sensor - Detection of sleep apnea syndrome -**

Yasuhiro Otda (National Institute of Technology, Nara College), Kenichi Iida (National Institute of Technology, Nara College), Etsuko Ueda (Osaka Institute of Technology), Takayuki Nakamura (Wakayama University), Atsutoshi Ikeda (Kinki University), Shinichi Kosugi (Nara Prefecture Western Medical Center)

**8AM2-4-2 Estimation of Learner's Preference to Learning Contents Based on Eye Measurement**

Seina Amagi (Tokyo Denki University), Kohei Yoshio (Tokyo Denki University), Satoshi Suzuki (Tokyo Denki University)

**8AM2-4-3 Study-Support Method to Enhance Effective Instructions Utilizing Psychological State Estimated from Brain Wave**

Masato Anakubo (Tokyo Denki University), Satoshi Suzuki (Tokyo Denki University)

**8AM2-4-4 Diagnosis System for Abnormal Respiratory Sound Using Divided Pulmonary Sound Wave**

Yuki Nakagawa (Tokyo Denki University), Shigeo Wada (Tokyo Denki University)

**8AM2-4-5 Method for Measuring Intentional Eye Blinks by Focusing on Momentary Movement around the Eyes**

Shogo Matsuno (The University of Electro-Communications), Tota Mizuno (The University of Electro-Communications), Naoaki Itakura (The University of Electro-Communications)

## 8PM1-1: Image Processing 2

Date: March 8, 13:30–15:00

Room: Kaiulani I

Chair: Hisashi Aomori (Chukyo University)

**8PM1-1-1 Total  $p$ -powered Variation Approach to Intra-Frame Super-Resolution**

Mitsuhiro Komiya (Tokyo University of Science), Katsumi Konishi (Kogakuin University), Kazunori Uruma (Tokyo University of Science), Tomohiro Takahashi (Tokyo University of Science), Toshihiro Furukawa (Tokyo University of Science)

**8PM1-1-2 Crater Detection Using PCA and High Accuracy Estimation of Center Position and the Size**

Tatsuya Takino (Meiji University), Izuru Nomura (Meiji University), Misako Moribe (Meiji University), Hiroyuki Kamata (Meiji University)

**8PM1-1-3 Investigation of the Suitable Principal Component Vector for Crater Detection**

Misako Moribe (Meiji University), Tatsuya Takino (Meiji University), Izuru Nomura (Meiji University), Hiroyuki Kamata (Meiji University)

**8PM1-1-4 Anomalous Behavior Detection in Videos based on Deformable Part Models**

Tamotsu Sugimoto (Kobe University), Nobutaka Kuroki (Kobe University), Tetsuya Hirose (Kobe University), Masahiro Numa (Kobe University)

**8PM1-1-5 Crack Extraction from Noisy Images with Fractal Dimension Analysis**

Ryo Hanaki (Kobe University), Nobutaka Kuroki (Kobe University), Tetsuya Hirose (Kobe University), Masahiro Numa (Kobe University)

## 8PM1-2: Wireless Communications 2

Date: March 8, 13:30–15:00

Room: Kaiulani II

Chair: Takeo Fujii (University of Electro-Communications)

**8PM1-2-1 Delay Profile Measurements in Indoor Radio Propagation Using MB-OFDM-UWB Signal**

Takuya Okamoto (Meiji University), Tetsushi Ikegami (Meiji University)

**8PM1-2-2 Performance Evaluation of UWB RAKE Reception for Body Area Network under Walking Scenario**

Kazuya Momose (Meiji University), Tetsushi Ikegami (Meiji University)

**8PM1-2-3 PSK and QAM Classification by Likelihood under Unknown SNR Condition**

Shinji Nishijima (Osaka City University), Ikuo Oka (Osaka City University), Shingo Ata (Osaka City University)

**8PM1-2-4 Simple Decision-Feedback Multiple Differential Detection Employing First-Order Channel Prediction and its Applications to Underwater Acoustic Communications**

Ritsuko Miyazaki (Ritsumeikan University), Nanase Yumoto (Ritsumeikan University), Hiroshi Kubo (Ritsumeikan University)

**8PM1-2-5 A Channel Sounder Employing Commercial Electronic Acoustic Equipments and its Applications to Underwater Acoustic Communications**

Takahide Ichikawa (Ritsumeikan University), Dai Aizawa (Ritsumeikan University), Shunichi Ueda (Ritsumeikan University), Souichiro Morita (Ritsumeikan University), Akinobu Murayama (Ritsumeikan University), Hiroshi Kubo (Ritsumeikan University)

## 8PM1-3: Synchronization

Date: March 8, 13:30–15:00

Room: Kaiulani III

Chair: Seiichiro Moro (Fukui University)

**8PM1-3-1 Investigation of Simulation Frequencies and Theoretical Frequencies of Synchronization States by Using Electric Power**

Ryoji Fukumasa (Hiroshima Institute of Technology), Masayuki Yamauchi (Hiroshima Institute of Technology), Yoshifumi Nishio (Tokushima University)

**8PM1-3-2 Occurring Phenomena between A Center Oscillator and Each Adjacent Oscillator on A Cross of Coupled Van Der Pol Oscillators**

Mikiya Tanaka (Hiroshima Institute of Technology), Masayuki Yamauchi (Hiroshima Institute of Technology)

**8PM1-3-3 Synchronization in Oscillators Coupled by Transmission Line Model with Different Length**

Yoko Uwate (Tokushima University), Yuichi Tanji (Kagawa University), Yoshifumi Nishio (Tokushima University)

**8PM1-3-4 Intermittency Chaos of Two Coupled Maps with Delay Coupling**

Yuki Fujisawa (Tokushima University), Kenta Ago (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

**8PM1-3-5 Synchronization of Coupled Oscillators Containing Ring and Star Structures**

Kazuki Ueta (Tokushima University), Seiya Kita (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

## 8PM1-4: Adaptive Systems and Learning System

Date: March 8, 13:30–15:00

Room: Hawaii

Chair: Masayuki Kikuchi (Tokyo University of Technology)

### 8PM1-4-1 Cloud Movement Prediction of Meteorological Satellite Images Using Hierarchical Neural Network

Nobuto Okubo (Tokushima University), Takahiro Kitajima (Tokushima University), Hiroshi Suzuki (Tokushima University), Takashi Yasuno (Tokushima University), Kiyoshi Takigawa (Shikoku Research Institute Inc.)

### 8PM1-4-2 Study on Multichannel Active Sound Quality Control Paid Attention to Order Components

Takuma Sagawa (Hiroshima City University), Shunsuke Ishimitsu (Hiroshima City University), Ayato Yamamoto (Hiroshima City University), Yoshihiro Aramaki (Hiroshima City University), Tomoki Ito (Hiroshima City University), Keisuke Namekawa (Suzuki Motor Corporation), Toshihisa Takagi (Suzuki Motor Corporation), Takanori Chino (Suzuki Motor Corporation), Kazuki Yoshida (Suzuki Motor Corporation), Kenta Suzuki (Suzuki Motor Corporation)

### 8PM1-4-3 Estimation of Teamwork in Cooperative Tasks by Multiple Persons

Shunya Nii (Tokyo Denki University), Hiroshi Igarashi (Tokyo Denki University)

### 8PM1-4-4 Multi-objective Optimization for Balancing Speed and Safeness in Car Racing Game

Naoto Kanazawa (Japan Advanced Institute of Science and Technology), Kokolo Ikeda (Japan Advanced Institute of Science and Technology)

## 8PM2-1: Signal Processing and Applications

Date: March 8, 15:20–16:50

Room: Kaiulani I

Chair: Hyunho Kang (Tokyo University of Science)

### 8PM2-1-1 Visualization of Pseudo Acoustic Impedance Distribution on Organ Surface for Minimally Invasive Surgery

Satoki Zenbutsu (Chiba University), Kenji Yoshida (Chiba University), Tadashi Yamaguchi (Chiba University)

### 8PM2-1-2 Parallelization of Video Contents Analytics Algorithm for Mobile Environments

Hwan-hee Lee (Korea Aerospace University), Chang-hyun Lee (Korea Aerospace University), Byong-ho Yang (Danusys Co., Ltd.), Myeong-jin Lee (Korea Aerospace University)

### 8PM2-1-3 A Transcoding Method of MPEG-2 to HEVC with Picture Structure Information

Mitsuo Ikeda (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University), Takeshi Ogura (Ritsumeikan University)

### 8PM2-1-4 A Multiplicative Watermarking Technique with an Orthogonal Sequence

Rei Tanaka (Ehime University), Tomoki Tada (Ehime University), Toshiyuki Uto (Ehime University), Kenji Ohue (Ehime University)

### 8PM2-1-5 An Image Watermarking Scheme Based on Frequency Selective Watermark

Rei Tanaka (Ehime University), Taichi Nonoshita (Ehime University), Toshiyuki Uto (Ehime University), Kenji Ohue (Ehime University)

## 8PM2-2: Wireless Communications 3

Date: March 8, 15:20–16:50

Room: Kaiulani II

Chair: Ikuo Oka (Osaka City University)

### 8PM2-2-1 Traffic Distribution Scheme in Heterogeneous Wireless Network

Takahiro Sekii (Kagawa University), Shigeaki Ogose (Kagawa University)

### 8PM2-2-2 Evaluations of Cooperative Transmission System for 920 MHz Wireless Communication in a Factory Environments

Kosuke Tsumura (Meiji University), Tetsushi Ikegami (Meiji University)

### 8PM2-2-3 Joint Macro-to-Macro and Macro-to-Pico Inter-cell Interference Coordination in Heterogeneous Networks

Sho Takano (Tokyo University of Science), Kenichi Higuchi (Tokyo University of Science)

### 8PM2-2-4 Investigations on Improvement of Convergence for Decentralized Association Method in Heterogeneous Networks

Yoshitaka Ikeda (Tokyo University of Science), Kenichi Higuchi (Tokyo University of Science)

### 8PM2-2-5 Multiple Access based on Coded Spatial Modulation

Megumi Fukuma (Kagawa University), Koji Ishii (Kagawa University)

## 8PM2-3: Optimization

Date: March 8, 15:20–16:50

Room: Kaiulani III

Chair: Kenta Ago (Tokushima University)

### 8PM2-3-1 Theoretical Analyses on Atomic Switch-based Decision Maker

Song-Ju Kim (National Institute for Materials Science)

### 8PM2-3-2 An Effective Construction Algorithm for Steiner Tree Problem Based on Edge Betweenness

Misa Fujita (Nippon Institute of Technology), Takayuki Kimura (Nippon Institute of Technology), Kenya Jin'no (Nippon Institute of Technology)

### 8PM2-3-3 Investigation of Firefly Algorithm Distinguishing between Males and Females for Minimum Optimization Problems

Masaki Takeuchi (Tokushima University), Haruna Matsushita (Kagawa University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

### 8PM2-3-4 Heuristic Method for Covering Salesman Problem with Nodes and Segments

Takafumi Matsuura (Nippon Institute of Technology)

### 8PM2-3-5 A Flow-Based Resource Allocation Algorithm for LTE Downlink Networks

Takahiro Mitsuoka (Tokyo University of Science), Thong Huynh (Tokyo University of Science), Kaori Kuroda (Tokyo



University of Science), Mikio Hasegawa (Tokyo University of Science)

## 8PM2-4: Error Control Coding

Date: March 8, 15:20–16:50

Room: Hawaii

Chair: Nobuyoshi Komuro (Chiba University)

### 8PM2-4-1 On a Soft-decision Iterative Minimum Distance Search Decoding Algorithm for Binary Linear Block Codes

Hitoshi Tokushige (Kumamoto Gakuen University), Jun Asatani (Okayama University of Science)

### 8PM2-4-2 All Optical Error Correcting Code Using Horizontal and Vertical Parity Checks

Takuma Matsumoto (Tokyo University of Science), Gou Hosoya (Tokyo University of Science), Hiroyuki Yashima (Tokyo University of Science)

### 8PM2-4-3 Properties of Secret-Key Reconciliation Protocol “Cascade” with Parallel Processing

Takeshi Odatō (Tamagawa University), Koichi Yamazaki (Tamagawa University)

### 8PM2-4-4 All-Optical Error Correcting System Using (7,4) Hamming Code

Keiichi Iwamoto (Tokyo University of Science), Hiroyuki Yashima (Tokyo University of Science), Gou Hosoya (Tokyo University of Science)

### 8PM2-4-5 New Optimal A-ZCZ Sequence Sets Including Uncorrelated Sequences

Hideyuki Torii (Kanagawa Institute of Technology), Takahiro Matsumoto (Yamaguchi University), Makoto Nakamura (Kanagawa Institute of Technology)

## 9AM1-1: Image Processing 3

Date: March 9, 9:10–10:40

Room: Kaiulani I

Chair: Tomohiro Takahashi (Tokyo University of Science)

### 9AM1-1-1 Noise Reduction for Medical Tomographic Images based on Locally Weighted Averaging

Yu Kato (Kobe University), Nobutaka Kuroki (Kobe University), Tetsuya Hirose (Kobe University), Masahiro Numa (Kobe University)

### 9AM1-1-2 Three-Dimensional NL-Means Method for Denoising Continuous Shooting Photography

Hirokazu Kobori (Kobe University), Nobutaka Kuroki (Kobe University), Tetsuya Hirose (Kobe University), Masahiro Numa (Kobe University)

### 9AM1-1-3 Color Filter Array Interpolation via Discrete-Time Cellular Neural Networks

Kosuke Hosaka (Tamagawa University), Tsuyoshi Otake (Tamagawa University), Hisashi Aomori (Chukyo University), Masatoshi Sato (Tokyo Metropolitan University), Mamoru Tanaka (Sophia University)

### 9AM1-1-4 Performance Analysis of Image Manipulation Identification Using Reversible Histogram Shift and LDA

Yuki Obara (Tokyo Denki University), Shigeo Wada (Tokyo Denki University)

**9AM1-1-5 Automatic Segmentation using Graph Cuts based on Skeleton Recognition of Kinect V2 for Human Detection**

Reio Onishi (Tokyo Metropolitan University), Shintaro Manome (Tokyo Metropolitan University), Masatoshi Sato (Tokyo Metropolitan University), Takuya Asaka (Tokyo Metropolitan University)

## 9AM1-2: [Special Session] Computer Network Technologies

Date: March 9, 9:10–10:40

Room: Kaiulani II

Organizers: Hidehiro Kanemitsu (Waseda University), Masaki Hanada (Tokyo University of Information Sciences) Chair: Hidehiro Kanemitsu (Waseda University)

**9AM1-2-1 P2P Streaming Method considering Processing Time of Hybrid P2P Server**

Masaki Hanada (Tokyo University of Information Sciences), Hidehiro Kanemitsu (Waseda University)

**9AM1-2-2 Analysis on Node Selection for Scheduling a DAG in a Heterogeneous System**

Hidehiro Kanemitsu (Waseda University), Masaki Hanada (Tokyo University of Information Science)

**9AM1-2-3 Comparative Study on Task Scheduling Methods on Various Heterogeneous Systems**

Kazuo Hajikano (Daiichi Institute of Technology), Hidehiro Kanemitsu (Waseda University), Moo Wan Kim (Tokyo University of Information Sciences), Hee-Dong Kim (Hankuk University of Foreign Studies)

**9AM1-2-4 Evaluation of Task Clustering Heuristic Algorithm in Heterogeneous Distributed System**

Kazuo Hajikano (Daiichi Institute of Technology), Hidehiro Kanemitsu (Waseda University), Hojun Moon (Tokyo University of Information Sciences), Moo Wan Kim (Tokyo University of Information Sciences), Hee-Dong Kim (Hankuk University of Foreign Studies )

## 9AM1-3: Nonlinear Systems and Networks 1

Date: March 9, 9:10–10:40

Room: Kaiulani III

Chair: Tomohiro Fujita (Ritsumeikan University)

**9AM1-3-1 Synchronization of Hindmarsh Rose Neurons by Temporal Evolution of Coupling Strengths**

Naoto Kanazawa (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

**9AM1-3-2 Cellular Neural Networks with Changing Templates for Edge Detection and Half-Toning**

Shohei Gotoda (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

**9AM1-3-3 Hardware Implementation of CNN for Accelerating Training Procedure**

Kui-Ting Chen (Waseda University), Shunsuke Sasaki (Waseda University), Yun-Ting Liao (Waseda University), Takaaki Baba (Waseda University)

**9AM1-3-4 Improving Back Propagation of Feed-Forward Neural Network with Changing Sigmoid Functions**

Shinsaburo Kittaka (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

sity)

#### 9AM1-3-5 Behavior of Artificial Slime Mould Model and its Application

Masafumi Uemura (Kagawa University), Haruna Matsushita (Kagawa University), Gerhard K. Kraetzschmar (Bonn-Rhein-Sieg University)

## 9AM2-1: Detection and Positioning 1

Date: March 9, 11:00–12:30

Room: Kaiulani I

Chair: Isamu Matsunami (University of Kitakyushu)

#### 9AM2-1-1 Vehicle Counting and Lane Estimation with ad-hoc Microphone Array in Real Road Environments

Takuya Toyoda (University of Tsukuba), Nobutaka Ono (National Institute of Informatics / SOKENDAI (The Graduate University for Advanced Studies)), Shigeki Miyabe (University of Tsukuba), Takeshi Yamada (University of Tsukuba), Shoji Makino (University of Tsukuba)

#### 9AM2-1-2 A Study for Exercise Support Robotic System: Lifestyle, Quality of Sleep and Exercise

Yihsin Ho (Tokyo Metropolitan University), Eri Sato-Shimokawara (Tokyo Metropolitan University), Toru Yamaguchi (Tokyo Metropolitan University), Norio Tagawa (Tokyo Metropolitan University)

#### 9AM2-1-3 Evidence of Enhancing Nonlinear Predictability of Stock Price Movements by the Principal Component Analysis

Kazuki Yanagisawa (Ibaraki University), Tomoya Suzuki (Ibaraki University)

#### 9AM2-1-4 Refinement of Time Difference Estimation with Sub-pixel Interpolation

Simayijiang Zhayida (Lund University), Kalle Åström (Lund University)

## 9AM2-2: Sensor Network and Ad-hoc Network 1

Date: March 9, 11:00–12:30

Room: Kaiulani II

Chair: Shintaro Mori (Fukuoka University)

#### 9AM2-2-1 Improving Chaotic CDMA for Mobile Ad Hoc Network

Kohei Ito (Tokyo University of Science), Hiroki Kato (Tokyo University of Science), Thong Huynh (Tokyo University of Science), Kaori Kuroda (Tokyo University of Science), Mikio Hasegawa (Tokyo University of Science)

#### 9AM2-2-2 Applying Noise-Induced Synchronization Phenomenon to Wireless Sensor Network Protocol

Ryuzo Kuwahara (Tokyo University of Science), Hiroyuki Yasuda (Tokyo University of Science), Mikio Hasegawa (Tokyo University of Science)

#### 9AM2-2-3 Neighboring Information Based Routing Using Mobile Agent in MANET

Joji Fujikawa (Kanagawa Institute of Technology), Shigeki Shiokawa (Kanagawa Institute of Technology)

#### 9AM2-2-4 Application to the Disaster Prevention with the Sensor Network

Ayaka Fukushima (Daiichi Institute of Technology), Takeshi Yamada (Daiichi Institute of Technology), Takumi Ok-

abayashi (Daiichi Institute of Technology)

**9AM2-2-5 Synchronization of Chaotic Oscillators by Natural Environmental Noises**

Hiroyuki Yasuda (Tokyo University of Science), Mikio Hasegawa (Tokyo University of Science)

## 9AM2-3: Nonlinear Systems and Networks 2

Date: March 9, 11:00–12:30

Room: Kaiulani III

Chair: Eri Ioka (Aoyama Gakuin University)

**9AM2-3-1 Technical Trading Strategy Using the Reaction to Price Jumps in American Stock Market**

Tokimaru Tsuruta (Ibaraki University), Hiroya Koizumi (Ibaraki University), Tomoya Suzuki (Ibaraki University)

**9AM2-3-2 Wind Speed Prediction System Using Multiple Time-Delayed Neural Networks**

Hiroshi Suzuki (Tokushima University), Takashi Yasuno (Tokushima University), Youhei Miyabe (Tokushima University), Takahiro Kitajima (Tokushima University)

**9AM2-3-3 Tremolo Effector Applying Chaotic Fluctuation**

Yusaku Kodake (Matsue College of Technology), Hironori Kumeno (Matsue College of Technology)

**9AM2-3-4 Detailed Investigation of Complex Waves on Van Der Pol Oscillators Coupled by Inductors as A Ring**

Ryouhei Takano (Hiroshima Institute of Technology), Masayuki Yamauchi (Hiroshima Institute of Technology)

**9AM2-3-5 Automatic Threshold Adjustment for Limit Cycles Holding a Specified Stability in Hybrid Systems**

Tetsushi Ueta (Tokushima University), Yuu Miino (Tokushima University)

## 9PM1-1: Detection and Positioning 2

Date: March 9, 13:30–15:00

Room: Kaiulani I

Chair: Yihsin Ho (Tokyo Metropolitan University)

**9PM1-1-1 Safe Driving Support of the Omni-Directional Mobile Vehicle Using Gaze Measurement**

Yuka Sato (Tokyo Denki University), Hiroshi Igarashi (Tokyo Denki University)

**9PM1-1-2 High Speed Gaze Tracking System with Multiple Light-emitting Elements**

Yohei Amano (Tokyo Denki University), Hiroshi Igarashi (Tokyo Denki University)

**9PM1-1-3 Information Including Flicker Noise with LED Lighting for Preventing Spy-Photos**

Kohei Sugiyama (Ritsumeikan University), Kyosuke Kageyama (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University), Takeshi Fujino (Ritsumeikan University)

**9PM1-1-4 1/f Fluctuation-Based Visible Light Beacon for Spy-Photo Prevention System**

Kyosuke Kageyama (Ritsumeikan University), Kohei Sugiyama (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University)

University), Takeshi Fujino (Ritsumeikan University)

#### 9PM1-1-5 Indoor Localization System with Robust Step Detection Algorithm

Hwan-hee Lee (Korea Aerospace University), Chang-hyun Lee (Korea Aerospace University), Myeong-jin Lee (Korea Aerospace University)

### 9PM1-2: Wireless Communications 4

Date: March 9, 13:30–15:00

Room: Kaiulani II

Chair: Mai Ota (Fukuoka University)

#### 9PM1-2-1 Investigation on Power Control Algorithm in Our Previously Reported Joint Control Method of Autonomous Cell Association and Power Control for Heterogeneous Networks

Soya Matsui (Tokyo University of Science), Kenichi Higuchi (Tokyo University of Science)

#### 9PM1-2-2 Information Mapping Parameter Control Method for Physical Wireless Parameter Conversion Sensor Networks

Taiki Nakayama (The University of Electro-Communications Japan), Takeo Fujii (The University of Electro-Communications Japan), Osamu Takyu (Shinshu University), Mai Ohta (Fukuoka University)

#### 9PM1-2-3 Power Saving for Wireless Communication in Multi-Agent Consensus Problem

Kenta Onishi (Kagawa University), Koji Ishii (Kagawa University)

#### 9PM1-2-4 Distributed Power Control Strategy for Reliable Control Quality

Kohei Senda (Kagawa University), Koji Ishii (Kagawa University)

#### 9PM1-2-5 Iterative Time-Domain Compression Method of MIMO Channel State Information

Tomohiro Nabeshima (Tokyo University of Science) Kenichi Higuchi (Tokyo University of Science)

### 9PM1-3: Nonlinear Systems and Networks 3

Date: March 9, 13:30–15:00

Room: Kaiulani III

Chair: Takayuki Kimura (Nippon Institute of Technology)

#### 9PM1-3-1 Chaos Propagation and Synchronization in Coupled Chaotic Circuits as Double Ring Combination

Takahiro Chikazawa (Tokushima University), Shogo Tamada (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

#### 9PM1-3-2 Synchronization State of Chaotic Circuit Containing Time Delay in One Direction

Seiya Kita (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

#### 9PM1-3-3 Estimating the Computational Cost of Maximum-Flow Neural Network

Hideharu Toda (Chukyo University), Masatoshi Sato (Tokyo Metropolitan University), Hisashi Aomori (Chukyo University)

#### 9PM1-3-4 **Bifurcations Related to QT Prolongation in a Mathematical Cardiac Model**

Ai Takahashi (Kagawa University), Hiroyuki Kitajima (Kagawa University), Toru Yazawa (Tokyo Metropolitan University)

#### 9PM1-3-5 **Synchronization Phenomena Between Triangle System and Two-Triangles System of FitzHugh-Nagumo Neurons with Diffusive Coupling**

Takato Sei (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

## 9PM2-1: Sensor Network and Ad-hoc Network 2

Date: March 9, 15:20–16:50

Room: Kaiulani I

Chair: Hiroyuki Yasuda (Tokyo University of Science)

#### 9PM2-1-1 **Fundamental Analysis for Genetic Placement Scheme in Unmanned Aircraft Vehicle-aided Wireless Sensor Network**

Shintaro Mori (Fukuoka University)

#### 9PM2-1-2 **Impact of Multilevel Factors to End-to-End Throughput of IEEE 802.11 Multi-hop Networks Through Analytical Expressions**

Tomoo Tanii (Chiba University), Kosuke Sanada (Chiba University), Nobuyoshi Komuro (Chiba University), Hiroo Sekiya (Chiba University)

#### 9PM2-1-3 **Study of Human Event Detection Algorithm by Infrared Array Sensor on Low Power Consumption Image Sensor Node**

Mitsuhiro Nagao (Ritsumeikan University), Shota Ueguchi (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University), Masayoshi Shirahata (Ritsumeikan University), Toshio Kumamoto (Osaka Sangyo University), Takeshi Fujino (Ritsumeikan University)

#### 9PM2-1-4 **Study on Design to Reduce Cost of Independent Power for Low Cost Field Environmental Monitoring**

Yoshio Niimi (National Institute of Technology, Anan College), Susumu Yoshida (National Institute of Technology, Anan College)

## 9PM2-2: Wireless Communications 5

Date: March 9, 15:20–16:50

Room: Kaiulani II

Chair: Yuusuke Kozawa (Tokyo University of Science)

#### 9PM2-2-1 **Improving Performance of CSMA/CA by Optimizing Temporal Structure of Back-off Time**

Hiroki Kato (Tokyo University of Science), Thong Huynh (Tokyo University of Science), Kaori Kuroda (Tokyo University of Science), Mikio Hasegawa (Tokyo University of Science)

#### 9PM2-2-2 **Performance Evaluations of Error-Correcting Codes for NOFDM Transmission with Successive Interference Canceller**

Kengo Otsuka (Tokyo City University), Tadatomo Sato (Tokyo City University)

#### 9PM2-2-3 **Performance Evaluations of Iterative Decoding Methods for Enhanced Coded SIM-OFDM**

Hiroto Sugata (Tokyo City University), Tadatomo Sato (Tokyo City University)

**9PM2-2-4 Design and Implementation of Optimization Scheme for Wireless LAN Networks Using Cognitive Cycle**

Masaki Satoh (Tokyo University of Science), Thong Huynh (Tokyo University of Science), Kaori Kuroda (Tokyo University of Science), Mikio Hasegawa (Tokyo University of Science)

## 9PM2-3: Control and Fuzzy Systems

Date: March 9, 15:20–16:50

Room: Kaiulani III

Chair: Masahiro Wada (Konan University)

**9PM2-3-1 Sensing System for Agricultural Environment Using Mobile Robot**

Tomoaki Inoue (National Institute of Technology, Nara College), Kenichi Iida (National Institute of Technology, Nara College), Etsuko Ueda (Osaka Institute of Technology), Takashi Yasuno (The University of Tokushima)

**9PM2-3-2 Semi-Active TVA with SMA Wires for Electrical-Device Vibration Reduction**

Yun-Ting Liao (Waseda University), Kui-Ting Chen (Waseda University), Chun-Ying Lee (National Taipei University of Technology), Takaaki Baba (Waseda University)

**9PM2-3-3 Investigation of Teleoperation Support System Using Environmental Recognition Sensors for Three-Parallel-Crawler-Type Mobile Robot**

Mizuki Higashi (Tokushima University), Hiroshi Suzuki (Tokushima University), Purnomo Sejati (Tokushima University), Takashi Yasuno (Tokushima University), Akinobu Kuwahara (Tokushima University)

**9PM2-3-4 Design Method of Hip Joint Power Assist Orthosis Based on Dynamic Simulation of Human Motion**

Takuya Agui (Tokushima University), Hiroshi Suzuki (Tokushima University), Anuar bin Mohamed Kassim (Tokushima University), Takashi Yasuno (Tokushima University)