

# Session Schedule

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## 5AM1-2: Information Security 1

Date: March 5, 9:00–10:20

Room: Kaiulani II

Chair: Hideyuki Torii (Kanagawa Institute of Technology)

### 5AM1-2-1 Linear Model Based Attack for Improved Arbiter PUF

Susumu Matsumi (Meijo University), Yusuke Nozaki ( Meijo University), Masaya Yoshikawa ( Meijo University)

### 5AM1-2-2 Response Cloning Method using Genetic Algorithm for Ring Oscillator PUF

Taichi Umeda (Meijo University), Yusuke Nozaki ( Meijo University), Masaya Yoshikawa ( Meijo University)

### 5AM1-2-3 Area Overhead aware Neural Network Physical Unclonable Function

Kazuya Shibagaki (Meijo University), Yusuke Nozaki ( Meijo University), Masaya Yoshikawa ( Meijo University)

### 5AM1-2-4 Coding for a Binary Piecewise-Identically-Distributed Markov Source

Yi An Chen (The University of Electro-Communications), Tsutomu Kawabata ( The University of Electro-Communications)

## 5AM1-3: Complex Network and Systems

Date: March 5, 9:00–10:20

Room: Kaiulani III

Chair: Tomoya Suzuki (Ibaraki University)

### 5AM1-3-1 Weight shift prediction of pregnant women by a collaborative filtering

Hiroki Takakusagi (Maebashi Institute of Technology), Tomomi Ogawa ( Maebashi Institute of Technology), Hiroki Matsumoto ( Maebashi Institute of Technology)

### 5AM1-3-2 An Approach to Software Testing by Using Program Nets

Biao Wu (Yamaguchi University), Hiromu Morita ( Yamaguchi University), Mitsuru Nakata ( Yamaguchi University), Qi-Wei Ge ( Yamaguchi University)

### 5AM1-3-3 Proposal of remote operation architecture of drone with an overlay network

Naoki Yamamoto (Aichi Institute of Technology), Ayumu Kurata ( Aichi Institute of Technology), Ryota Murate ( Aichi Institute of Technology), Hiroto Mori ( Aichi Institute of Technology), Kohei Tanaka ( No organization), Katsuhiko Naito ( Aichi Institute of Technology)

### 5AM1-3-4 Mobile Robot Motion Planning Based on Discrete-time Numerical Model

Mio Kobayashi (National Institute of Technology, Anan College)

## 5AM2-1: Adaptive Systems

Date: March 5, 10:40-12:20

Room: Kaiulani I

Chair: Takashi Yasuno (Tokushima University)

### 5AM2-1-1 A proposal of a blind adaptive equalization with noise reduction function

Makito Murata (Maebashi Institute of Technology), Minoru Komatsu ( Maebashi Institute of Technology), Hiroki Matsumoto ( Maebashi Institute of Technology)

**5AM2-1-2 Proposal of BSS method to estimate nonlinear function adaptively**

Keisuke Iwasaki (Maebashi Institute of Technology), Minoru Komatsu ( Maebashi Institute of Technology), Hiroki Matsumoto ( Maebashi Institute of Technology)

**5AM2-1-3 DISTORTION MEASUREMENT USING MUSIC**

Tatsuya Hayashi (Hiroshima City University), Shunsuke Ishimitsu ( Hiroshima City University)

**5AM2-1-4 A stable spline adaptive recursive filter using positive realness**

Yusuke Miwa (Nagaoka University of Technology), Yasunori Sugita ( Nagaoka University of Technology)

## 5AM2-2: Information Security 2

Date: March 5, 10:40-12:20

Room: Kaiulani II

Chair:Atsushi Inoie (Kanagawa Institute of Technology)

**5AM2-2-1 The Shannon Cipher System over Noisy Channel with Causal Disclosure**

Qipeng Wu (The University of Electro-Communications), Hideki Yagi ( The University of Electro-Communications)

**5AM2-2-2 On the Capacity Region of an SRAM-PUF 2-Enrollment Rate-Constrained System without Cell-Permutation Symmetry**

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

**5AM2-2-3 Power Analysis Countermeasures for PRINCE and its Evaluation**

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

**5AM2-2-4 Synchronized Authentication Method for CAN Communication**

Kanata Nishida (Meijo University), Yusuke Nozaki ( Meijo University), Masaya Yoshikawa ( Meijo University)

**5AM2-2-5 Performance Evaluation of Energy Harvesting PUF using Photovoltaic Generation**

Yusuke Nozaki (Meijo University), Masaya Yoshikawa ( Meijo University)

## 5AM2-3: Estimation 1

Date: March 5, 10:40-12:20

Room: Kaiulani III

Chair:Hideyuki Kato (Oita University)

**5AM2-3-1 The Rock-Scissors-Paper game strategy estimation method using homology search**

Takahiro Komai (Tokyo University of Technology), Song-Ju Kim ( Keio University), Takuji Kousaka ( Chukyo University), Hiroaki Kurokawa ( Tokyo University of Technology)

**5AM2-3-2 Auto-extraction of Influential Keywords Included in Financial News Headlines**

Masahiro Miyoshi (Ibaraki University), WENKAI SHI ( Ibaraki University), Yui Hosoki ( Ibaraki University), Junichi Eguchi ( Daiwa Asset Management Co. Ltd), Minoru Sasaki ( Ibaraki University), Tomoya Suzuki ( Ibaraki University)

**5AM2-3-3 Prediction of Rapid Wind Speed Fluctuation by LSTM Using Observed Data of Multiple Points**

Rui Fukuoka (Tokushima University), Hiroshi Suzuki ( Tokushima University), Takahiro Kitajima ( Tokushima University), Akinobu Kuwahara ( Tokushima University), Takashi Yasino ( Tokushima University), Kiyoshi Takigawa ( Shikoku

Research Institute Inc.)

**5AM2-3-4 Prediction of Foreign Exchange Best Rates by Using Collective Knowledge of Counterparty Banks**

Kazuto Yano (Ibaraki University), Takehiro Suzuki (Ibaraki University), Tomoya Suzuki (Ibaraki University)

**5AM2-3-5 Time-delay Estimation using Persistent Homology focusing on the number of Landmarks**

Keisuke Fukagai (Meiji University), Kenji Nakamura (Meiji University), Yuta Kase (Meiji University), Hiroyuki Kamata (Meiji University)

## 5PM1-1: Control and Fuzzy Systems

Date: March 5, 14:00-15:40

Room: Kaiulani I

Chair:Shunsuke Ishimura (Hiroshima City University)

**5PM1-1-1 Autonomous Traveling Control of Agricultural Mobile Robot using Depth Camera in Greenhouse**

Satoshi Yamashita (Tokushima University), Hiroshi Suzuki (Tokushima University), Akinobu Kuwahara (Tokushima University), Takahiro Kitajima (Tokushima University), Takashi Yasuno (Tokushima University)

**5PM1-1-2 Motion Control of 2-link Robot Manipulator with Simple Bi-articular Muscle Mechanism**

Kodai Kato (Tokushima University), Hiroshi Suzuki (Tokushima University), Akinobu Kuwahara (Tokushima University), Takahiro Kitajima (Tokushima University), Takashi Yasuno (Tokushima University)

**5PM1-1-3 Basic Characteristic Analysis of Variable Elasticity Cushion with MR Fluid and Bubble Wrap Packaging**

Masahide Denawa (Tokyo Denki University), Ki Ando (Tokyo Denki University), Hiroshi Igarashi (Tokyo Denki University)

**5PM1-1-4 Jumping Movement of Biped Robot Using Closed Link Legs and Spring Mechanism**

Yu Yamanaka (Tokushima University), Hiroshi Suzuki (Tokushima University), Takashi Yasuno (Tokushima University)

**5PM1-1-5 Quantitative Analysis of Knee-Joints Burden of Nursing Care Motion in Case of Using Waist-Joint Power Assistive Orthosis**

Yuki Emoto (Tokushima University), Hiroshi Suzuki (Tokushima University), Ayaka Sumoto (Tokushima University), Akinobu Kuwahara (Tokushima University), Takahiro Kitajima (Tokushima University), Mito Kori (Tokushima University), Takashi Yasuno (Tokushima University)

## 5PM1-2: Optical Communications

Date: March 5, 14:00-15:40

Room: Kaiulani II

Chair:Hiroyuki Yashima (Tokyo University of Science)

**5PM1-2-1 Underwater Visible Light Simultaneous Wireless Information and Power Transfer using Inverse Pulse Position Modulation Scheme**

Ryota Kimoto (Tokyo University of Science), Yusuke Kozawa (Ibaraki University), Yohtarō Umeda (Tokyo University of Science), Hiromasa Habuchi (Ibaraki University)

**5PM1-2-2 High Accuracy Positioning System on Indoor Optical Wireless VN-CSK System**

Hikari Iizuka (Ibaraki University), Ran Sun (Ibaraki University), Hiromasa Habuchi (Ibaraki University), Yusuke Kozawa (Ibaraki University)

**5PM1-2-3 Comparison of co-channel interference power between A-ZCZ sequence sets and GMO-ZCZ sequence sets by computer simulation**

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

**5PM1-2-4 Effective Frame Error Detecting Scheme for Optical-Wireless Advanced Framed-DOOK System**

Yuta Asano (Ibaraki University), Hiromasa Habuchi ( Ibaraki University), Yusuke Kozawa ( Ibaraki University)

**5PM1-2-5 High efficiency visible light communications using a frequency diversity effect of CAZAC-OFDMs**

Takanobu Onoda (Tokyo University of Science), Ryoichi Kanayama ( Tokyo University of Science), Masahiro Muraguchi ( Tokyo University of Science)

## 5PM1-3: Estimation 2

Date: March 5, 14:00-15:40

Room: Kaiulani III

Chair:Hiroshi Suzuki (Tokushima University)

**5PM1-3-1 Prediction of Contract Prices at Auto Auction with Time Series Models**

Risa Yamashita (Ibaraki University), Hiromichi Sakurai ( Ibaraki University), Yuma Hayami ( Ibaraki University), Eriko Hasegawa ( PROTO CORPORATION), Rikizou Shimoyama ( PROTO CORPORATION), Ryosuke Fukunishi ( PROTO CORPORATION), Hiroki Mayuzumi ( PROTO CORPORATION), Tomoya Suzuki ( Ibaraki University)

**5PM1-3-2 Time-Varying Collaborative Filtering Based on the Variational Bayes**

Manabu Kobayashi (Waseda University), Toshiyasu Matsushima ( Waseda University), Youko Yoshizawa ( Mizuho Bank, Ltd.)

**5PM1-3-3 Application of the Selective Desensitization Neural Network to Concept Drift Problems**

Tomoki Ichiba (Tsukuba University), Kazumasa Horie ( Tsukuba University), Shoichi Someno ( Tsukuba University), Tomohiro Aki ( Tsukuba University), Masahiko Morita ( Tsukuba University)

**5PM1-3-4 Direct Prediction of individual Contract Prices at Auto Auction with Deep Neural Network**

Yuuma Hayami (Ibaraki University), Hiromichi Sakurai ( Ibaraki University), Daiki Kudou ( Ibaraki University), Eriko Hasegawa ( PROTO CORPORATION), Rikizou Shimoyama ( PROTO CORPORATION), Ryosuke Fukunishi ( PROTO CORPORATION), Hiroki Mayuzumi ( PROTO CORPORATION), Tomoya Suzuki ( Ibaraki University)

**5PM1-3-5 Improving time series prediction by the selective desensitization neural network based on synaptic weight analysis**

Shoichi Someno (Tsukuba University), Kazumasa Horie ( Tsukuba University), Tomoki Ichiba ( Tsukuba University), Tomohiro Aki ( Tsukuba University), Masahiko Morita ( Tsukuba University)

## 5PM2-1: Image Processing 1

Date: March 5, 16:00-17:40

Room: Kaiulani I

Chair:Tomohiro Takahashi (Tokai University)

**5PM2-1-1 Image Enhancement with Lightness Correction Considering Human Visual Characteristics**

Tadahiro Azetsu (Yamaguchi Prefectural University), Noriaki Suetake ( Yamaguchi University)

**5PM2-1-2 Color Filter Array Interpolation Considering Self-Congruence Based on Sub-Pixel Matching**

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

**5PM2-1-3 Fast Approach for Image Colorization Using Locally Linear Embedding**

Takeshi Aiyoshizawa (Tokyo university of science), Kazunori Uruma ( Kogakuin university), Katsumi Konishi ( Hosei university), Tomohiro Takahashi ( Tokai university), Toshihiro Furukawa ( Tokyo university of science)

**5PM2-1-4 Multi resolution block Hankel matrices rank minimization based image inpainting**

Tomohiro Takahashi (Tokai university research & information center), Katsumi Konishi ( Hosei university), Kazunori Uruma ( Kogakuin university), Toshihiro Furukawa ( Tokyo university of science)

## 5PM2-2: Wireless Communications 1

Date: March 5, 16:00-17:40

Room: Kaiulani II

Chair: Masahiro Muraguchi (Tokyo University of Science)

**5PM2-2-1 Construction of Matched Filter Bank of Multiphase ZCZ Code reaches mathematical upper bound**

Sho Kuroda (Yamaguchi University), Takahiro Matsumoto ( Yamaguchi University), Yuta Ida ( Yamaguchi University), Shinya Matsufuji ( Yamaguchi University)

**5PM2-2-2 On a Soft-decision Recursive Decoding Algorithm for  $u+u+v$  Codes**

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

**5PM2-2-3 A Generation Method of a Two-Dimensional Optical ZCZ Sequence with the Smallest Zero-Correlation Zone**

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

**5PM2-2-4 A Study on efficient decoder design using EXIT chart for polar code-concatenated chaos-MIMO transmission scheme**

Keita Ito (Nagoya Institute of Technology), Eiji Okamoto ( Nagoya Institute of Technology), Yoshihiro Masuda ( Nagoya Institute of Technology), Tetsuya Yamamoto ( Panasonic Corporation)

**5PM2-2-5 Multi-path Content Acquisition Method for Information-Centric MANET**

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

## 5PM2-3: Circuit Design and Analysis

Date: March 5, 16:00-17:40

Room: Kaiulani III

Chair: Kuniyasu Shimizu (Chiba Institute of Technology)

**5PM2-3-1 Design Method of Load-Independent Class-E Inverter**

Shu Suzuki (Chiba Institute of Technology), Kosuke Takahashi ( Chiba Institute of Technology), Fumiya Ebihara ( Chiba Institute of Technology), Keisuke Kitazawa ( Chiba Institute of Technology), Yusuke Ogi ( Chiba Institute of Technology), Xiuqin Wei ( Chiba Institute of Technology)

**5PM2-3-2 A Robust Wireless Power Transfer System for IoT devices**

Yoshiki Tsuchida (Ritsumeikan University), Soichiro Ito ( Ritsumeikan University), Masahiro Fukui ( Ritsumeikan University)

### 5PM2-3-3 Simple mathematical model for Pierce oscillator circuit: Simulation and experiment

Naoto Komeno (Ritsumeikan University), Ryota Inden ( Ritsumeikan University), Kazuyoshi Ishimura ( Ritsumeikan University), Isao Theodore Tokuda ( Ritsumeikan University)

### 5PM2-3-4 Fail safe DC-DC converter with thermoelectric modules

Hiroyuki Asahara (Okayama University of Science), Nobuyuki Kasa ( Okayama University of Science), Takuji Kousaka ( Chukyo University), Shota Uchino ( Chukyo University), Takashi Fujii ( Okayama University of Science), Tsutomu Iida ( Tokyo University of Science)

### 5PM2-3-5 Simulation of All-Optical OR Gate Using Quantum-Dot Semiconductor Optical Amplifier

Kosuke Komatsu (Tokyo university of science), Gou Hosoya ( Tokyo university of science), Hiroyuki Yashima ( Tokyo university of science)

## 6AM1-1: Image Processing 2

Date: March 6, 9:00-10:20

Room: Kaiulani I

Chair:Takeshi Ogura (Ritsumeikan University)

### 6AM1-1-1 Flexible Edge Component Detection by Image Power Spectrum Sparsity

Naw Jacklin Nyunt (Saitama University), Sugiura Yosuke ( Saitama University), Shimamura Tetsuya ( Saitama University)

### 6AM1-1-2 Re-compressible Hierarchical Lossless Image Compression Scheme using Cellular Neural Network Predictors Optimized by PSO-RP

Yuki Nagano (Chukyo University), Yuki Kawai ( Chukyo University), Hideharu Toda ( Chukyo University), Hisashi Aomori ( Chukyo University), Masatoshi Sato ( Tamagawa University), Tuyoshi Otake ( Tamagawa University), Ichiro Matsuda ( Tokyo University of Science), Susumu Itoh ( Tokyo University of Science)

### 6AM1-1-3 Large-Scale CA Processing Using CAM2 on FPGA

Ryota Katsuma (ritsumeikan University), Takeshi Kumaki ( ritsumeikan University), Tomohiro Fujita ( ritsumeikan University), Takeshi Ogura ( ritsumeikan University)

### 6AM1-1-4 Contour Line Extraction of Retinal Vein for Diagnosis of Arteriosclerosis Using Energy Function and Evaluation of V2/V1 Ratio

Yuki Okami (Yamaguchi University), Mashiho Mukaida ( Yamaguchi University), Hiroaki Koga ( Yamaguchi University), Reiji Kawata ( Kawata Clinic), Noriaki Suetake ( Yamaguchi University), Eiji Uchino ( Yamaguchi University)

## 6AM1-2: Ranging and Positioning

Date: March 6, 9:00-10:20

Room: Kaiulani II

Chair:Masakatsu Ogawa (Sophia University)

### 6AM1-2-1 Development of a sound based drone detection application

Kenichi Suzuki (Aichi Institute of Technology), Katsuhiro Naito ( Aichi Institute of Technology)

### 6AM1-2-2 Time Delay Estimation Performance of Direct Spread Chirp Signal

Mohammad Mikal Amrul Halim Gan (Meiji University), Tetsushi Ikegami ( Meiji University)

### 6AM1-2-3 Study of Ultrasonic-Range-Sensor System with Resistance to Spoofing Attack

Hayato Nishimura (Ritsumeikan University), Yuta Kajitani ( Ritsumeikan University), Kota Yoshida ( Ritsumeikan University), Mitsuru Shiozaki ( Ritsumeikan University), Masayoshi Shirahata ( Ritsumeikan University), Takaya Kubota ( Ritsumeikan University), Takeshi Fujino ( Ritsumeikan University)

**6AM1-2-4 Study of Countermeasure Using Time-Series Data against Physical Spoofing Attack on Range Sensor**

Yuta Kajitani (Ritsumeikan University), Hayato Nishimura ( Ritsumeikan University), Kota Yoshida ( Ritsumeikan University), Mitsuru Shiozaki ( Ritsumeikan University), Takaya Kubota ( Ritsumeikan University), Takeshi Fujino ( Ritsumeikan University)

## 6AM1-3: Bio-Signal Processing 1

Date: March 6, 9:00-10:20

Room: Kaiulani III

Chair:Keisuke Fukagai (Meiji University)

**6AM1-3-1 An extraction method of DPOAE using sparse estimation**

Yokota Yukari (Nagaoka University of Technology), Yasunori Sugita ( Nagaoka University of Technology)

**6AM1-3-2 Heart rate analysis toward the development of conversation support robot**

Hidekazu Aizawa (Tokyo Metropolitan University), Reona Gomi ( Tokyo Metropolitan University), Eri Sato-Shimokawa ( Tokyo Metropolitan University), Toru Yamaguchi ( Tokyo Metropolitan University)

**6AM1-3-3 Block BSS for Pulse Wave Extraction**

Takuya Higo (Maebashi Institute of Technology), Takashi Ishiguro ( TAIYO YUDEN CO. LTD. R&D Center), Tomomi Ogawa ( Maebashi Institute of Technology), Hiroki Matsumoto ( Maebashi Institute of Technology)

**6AM1-3-4 Study on Perception of Speaker Age by Semantic Differential Method**

Yang Li (Japan Advanced Institute of Science and Technology), Maori Kobayashi ( Japan Advanced Institute of Science and Technology), Masato Akagi ( Japan Advanced Institute of Science and Technology)

## 6AM2-1: Speech Processing and Recognition 1

Date: March 6, 10:40-12:20

Room: Kaiulani I

Chair:Masashi Unoki (JAIST)

**6AM2-1-1 Variation of Formant Amplitude and Frequencies in Vowel Spectrum uttered under Various Noisy Environments**

Shumpei Matsumoto (Japan Advanced Institute of Science and Technology), Masato Akagi ( Japan Advanced Institute of Science and Technology)

**6AM2-1-2 Study on Relationship between Degree of Emphasis and Acoustic Feature for Synthesizing Emphasized Speech**

Yasuhiro Ohtani (Japan Advanced Institute of Science and Technology), Masato akagi ( Japan Advanced Institute of Science and Technology)

**6AM2-1-3 Noise Suppression Using Beamformer and Transfer-function-gain Nonnegative Matrix Factorization with Distributed Stereo Microphones**

Yutaro Matsui (University of Tsukuba), Shoji Makino ( University of Tsukuba), Nobutaka Ono ( Tokyo Metropolitan University), Takeshi Yamada ( University of Tsukuba)

**6AM2-1-4 Performance Evaluation of Time-Frequency-Bin-Wise Switching Beamformer in Reverberant Environments**



Kouei Yamaoka (University of Tsukuba), Nobutaka Ono (Tokyo Metropolitan University), Shoji Makino (University of Tsukuba), Takeshi Yamada (University of Tsukuba)

**6AM2-1-5 Extraction of Multiple Sound Signals using Two-Channel Microphone System with Variable Arbitrary Multi-Directional Pattern**

Yu Oshiro (Kumamoto National Institute of Technology), Takaaki Ishibashi (Kumamoto National Institute of Technology), Kiyoteru Hayama (Kumamoto National Institute of Technology), Chiharu Okuma (Kumamoto National Institute of Technology), Kei Eguchi (Fukuoka Institute of Technology)

## 6AM2-2: Wireless Communications 2

Date: March 6, 10:40-12:20

Room: Kaiulani II

Chair: Yusuke Kozawa (Ibaraki University)

**6AM2-2-1 Reduction in complexity of MPA detection with codebook using null symbol in SCMA systems**

Yoshitaka Takeuchi (Chiba Institute of Technology), Shintaro Ebi (Chiba Institute of Technology), Takahiko Saba (Chiba Institute of Technology)

**6AM2-2-2 Reliable Wireless Communication Using Diversity Reception for Factory in 920 MHz Band**

Ryo Iizuka (Meiji University), Tetsushi Ikegami (Meiji University)

**6AM2-2-3 A Study on Demodulation Method of Non-Orthogonal Frequency Division Multiplex using Unbalanced Power of Even and Odd Numbered Sub-Carriers**

Tomoaki Karasawa (Tokyo University of Science), Akira Nakamura (Tokyo University of Science), Makoto Itami (Tokyo University of Science)

**6AM2-2-4 Proposal of SPF-MIMO scheduling for DPS-CoMP in LTE System**

Hiroki Kotake (Sophia University), Takeshi Hattori (Sophia University), Masakatsu Ogawa (Sophia University)

**6AM2-2-5 PAPR Reduction Effects of CAZAC-OFDM under the 4G-LTE Standards**

Hiroaki Waraya (Tokyo University of Science), Yasuhiro Shimazu (Tokyo University of Science), Masahiro Muraguchi (Tokyo University of Science)

## 6AM2-3: Bio-Signal Processing 2

Date: March 6, 10:40-12:20

Room: Kaiulani III

Chair: Yoko Uwate (Tokushima University)

**6AM2-3-1 Comparison of Image Processing Methods for Extracting Region of Interest of Ultrasound Video for Swallowing Evaluation**

Takato Matsuzaki (University of Yamanashi), Yutaka Suzuki (University of Yamanashi), Morimasa Tanimoto (University of Yamanashi), Keisuke Masuyama (University of Yamanashi), Mari Takahashi (University of Yamanashi), Osamu Sakata (Tokyo University of Science), Masayuki Morisawa (University of Yamanashi)

**6AM2-3-2 Diagnosis system for respiratory diseases of pigs using body-conducted sound**

Cheng Yibing (Hiroshima City University), Kenta Narusawa (Hiroshima City University), Shunsuke Ishimitsu (Hiroshima City University), Satoshi Iijima (Hiroshima City University), Masashi Nakayama (Hiroshima City University), Hiroaki Inoue (National Agriculture and Food Research Organization), Osamu Mikami (National Agriculture and Food Research Organization)

**6AM2-3-3 Investigation of Analytical Method by Multi-channelization of Swallowing Sound for Swallowing Evaluation**

Shun Maruyama (University of Yamanashi), Yutaka Suzuki (University of Yamanashi), Morimasa Tanimoto (University of Yamanashi), Keisuke Masuyama (University of Yamanashi), Mari Takahashi (University of Yamanashi), Osamu Sakata (Tokyo University of Science), Masayuki Morisawa (University of Yamanashi)

**6AM2-3-4 Detection Method of Body Touch on Fingerprint Authenticating User using Intra-Body Propagation Characteristics for Spoof Detection**

Takuya Suehiro (Tokyo University of Science), Takahiro Yoshida (Tokyo University of Science), Seiichiro Hangai (Tokyo University of Science)

**6AM2-3-5 Study on motion direction classification by EEG based on chaotic and frequency characteristics**

Kenji Nakamura (Meiji University), Yuta Kase (Meiji University), Keisuke Fukagai (Meiji University), Hiroyuki Kamata (Meiji University)

## 6PM1-1: Speech Processing and Recognition 2

Date: March 6, 14:00-15:40

Room: Kaiulani I

Chair: Masato Akagi (JAIST)

**6PM1-1-1 Relationship between discomfort sound and its physical correlates**

Yumiko Takahashi (Japan Advanced Institute of Science and Technology), Masato Akagi (Japan Advanced Institute of Science and Technology)

**6PM1-1-2 Experimental Evaluation of WaveRNN Predictor for Audio Lossless Coding**

Shota Amada (Tsukuba University), Ryosuke Sugiura (NTT Communication Science Laboratories), Yutaka Kamamoto (NTT Communication Science Laboratories), Noboru Harada (NTT Communication Science Laboratories), Takehiro Moriya (NTT Communication Science Laboratories), Takeshi Yamada (Tsukuba University), Shoji Makino (Tsukuba University)

**6PM1-1-3 Directivity control using two circular loudspeaker arrays**

Yi Ren (The University of Electro-Communications), Yoichi Haneda (The University of Electro-Communications)

**6PM1-1-4 Feasibility of audio information hiding using linear-time variant IIR filter based on cochlear delay**

Candy Olivia Mawalim (Japan Advanced Institute of Science and Technology), Masashi Unoki (Japan Advanced Institute of Science and Technology)

**6PM1-1-5 Study on speech watermarking method based on spread-spectrum using linear prediction residue**

Reiya Namikawa (JAIST), Masashi Unoki (JAIST)

## 6PM1-2: [Special Session] Networking and Computing Technologies

Date: March 6, 14:00-15:40

Room: Kaiulani II

Chair: Hidehiro Kanemitsu (Tokyo University of Technology)

**6PM1-2-1 Adaptive In-Network Caching Strategy Based on Popularity and Playback Sequence for VoD Streaming over CCN**

Masaki Hanada (Tokyo University of Information Sciences), Akira Toyozaki (Internet Initiative Japan), Hidehiro Kane-

mitsu (Tokyo University of Technology)

**6PM1-2-2 MPR Selection and Routing Algorithm Based on Link Disconnection Prediction and Hop Count in OLSR Protocol**

Wataru Nagata (Tokyo University of Information Sciences), Masaki Hanada (Tokyo University of Information Sciences), Hidehiro Kanemitsu (Tokyo University of Technology), Hideo Suzuki (Tokyo University of Information Sciences), Yasuo Nagai (Tokyo University of Information Sciences)

**6PM1-2-3 Clustering-based Allocation of Virtualized Functions for Service Function Chaining**

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

**6PM1-2-4 Evaluation of Inundation Area for 16 Years in Bangladesh by MODIS Data**

JongGeol Park (Tokyo University of Information Sciences), Masaki Hanada (Tokyo University of Information Sciences), Hidehiro Kanemitsu (Tokyo University of Technology)

## 6PM1-3: Learning Systems

Date: March 6, 14:00-15:40

Room: Kaiulani III

Chair: Yoshifumi Ukita (Yokohama College of Commerce)

**6PM1-3-1 Recognition of Landing Target of UAV by Vision using Machine Learning**

Yuya Homma (University of Fukui), Seiichiro Moro (University of Fukui)

**6PM1-3-2 A method for automatically determining whether to display articles based on RNN for SNS linked digital signage**

Yuki Nagashima (University of Shizuoka), Yuji Ito (MarBIT Ltd.), Hiroshi Kosaka (SKY Perfect JSAT Holdings Inc.), Hiroaki Yuze (University of Shizuoka), Takayuki Watanabe (University of Shizuoka, MarBIT Ltd.)

**6PM1-3-3 FPGA-based FORCE Learning Accelerator Towards Real-time Online Reservoir Computing**

Koyo Minamikawa (Hokkaido University), Shinya Takamaeda-Yamazaki (Hokkaido University), Masayuki Ikebe (Hokkaido University), Masato Motomura (Hokkaido University), Tetsuya Asai (Hokkaido University)

**6PM1-3-4 Reinforcement Learning Model Using Resistive Memory Devices**

Song-Ju Kim (Keio University), Kaori Ohkoda (Keio University), Masashi Aono (Keio University)

**6PM1-3-5 A Note on Simultaneous Experiments for Related Multiple Models based on an Orthonormal System**

Yoshifumi Ukita (Yokohama College of Commerce)

## 6PM2-1: Image Processing 3

Date: March 6, 16:00-17:20

Room: Kaiulani I

Chair: Yasunori Sugita (Nagoya University of Technology)

**6PM2-1-1 Evaluation of Training Accuracy in Color Cut Out Images Using Convolutional Neural Network**

Yuichi Miyata (Tokushima University), Ryuta Yoshimura (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

**6PM2-1-2 Design of Convolutional Neural Network for Classifying Depth Prediction Images from Overhead with Some Training Data Sets**

Shu Sumimoto (Tokushima University), Yuichi Miyata ( Tokushima University), Ryuta Yoshimura ( Tokushima University), Yoko Uwate ( Tokushima University), Yoshifumi Nishio ( Tokushima University)

**6PM2-1-3 Sign language recognition using OpenPose**

Ryota Kawamata (Nagaoka University of Tec), Yasunori Sugita ( Nagaoka University of Technology)

**6PM2-1-4 The Effect of High Dynamic Range Images on Image Recognition Using Deep Learning**

Takumi Hashimoto (Ritsumeikan University), Kota Yoshida ( Ritsumeikan University), Shunsuke Okura ( Brillnics Japan Inc.), Shinichi Ikenaga ( Brillnics Japan Inc.), Masayoshi Shirahata ( Ritsumeikan University), Isao Takayanagi ( Brillnics Japan Inc.), Takeshi Fujino ( Ritsumeikan University)

## 6PM2-3: Optimization

Date: March 6, 16:00-17:20

Room: Kaiulani III

Chair: Song-Ju Kim (Keio University)

**6PM2-3-1 Artificial Bee Colony Algorithm for Time-Varying Optimization**

Ken Kamiyotsumoto (Tokushima University), Thomas Ott ( Zurich University of Applied Sciences), Yoko Uwate ( Tokushima University), Yoshifumi Nishio ( Tokushima University)

**6PM2-3-2 Application of Particle Swarm Optimization for Calculating Local Bifurcation Point in Two-dimensional Continuous Dynamical Systems**

Wataru Kinoshita (Oita University), Hideyuki Kato ( Oita University), Hiroaki Kurokawa ( Tokyo University of Technology), Haruna Matsushita ( Kagawa University), Takuji Kousaka ( Chukyo University)

**6PM2-3-3 Optimization of Evacuation Sign Arrangement using Multi-Agent Simulation**

Yuki Fujita (Tokyo University of Technology), Hiroaki Kurokawa ( Tokyo University of Technology)

**6PM2-3-4 Construction Method for Solving Multiple Covering Salesman Problem with Nodes and Segments**

Takafumi Matsuura (Nippon Institute of Technology)

## 7AM2-1: Image Processing 4

Date: March 7, 10:40-12:20

Room: Kaiulani I

Chair: Tsuyoshi Otake (Tamagawa University)

**7AM2-1-1 Tissue Characterization of Coronary Plaque by Using Multiple SVMs with Tree Structure Branched by the Degree of Difficulty of Classification**

Kota Hirano (Yamaguchi University), Hiroaki Koga ( Yamaguchi University), Noriaki Suetake ( Yamaguchi University), Eiji Uchino ( Yamaguchi University)

**7AM2-1-2 Cloud Image Prediction Using Fully-Convolutional Neural Network with 3D-CNN and 2D-CNN**

Naoto Fujioka (Tokushima University), Hiroshi Suzuki ( Tokushima University), Takahiro Kitajima ( Tokushima University), Akinobu Kuwahara ( Tokushima University), Takashi Yasuno ( Tokushima University), Kiyoshi Takigawa ( Shikoku Research Institute Inc.)

**7AM2-1-3 Multiclass classification of similar moon images using Deep Learning**

Takeo Miki (Meiji University), Yosuke Komatsubara ( Meiji University), Keisuke Tsuda ( Meiji University), Akari Uehara ( Meiji University), Hiroyuki Kamata ( Meiji University)

#### **7AM2-1-4 Convolutional Neural Network for Blind Image Quality Assessment**

Yadanar Khaing (Saitama University), Sugiura Yosuke ( Saitama University), Shimamura Tetsuya ( Saitama University)

### **7AM2-2: Wireless Communications 3**

Date: March 7, 10:40-12:20

Room: Kaiulani II

Chair:Takahiko Saba (Chiba Institute of Technology)

#### **7AM2-2-1 A Study on Mobile Reception Characteristics in Partial Reception Band of Next-Generation DTTB**

Ryota Kimura (Tokyo University of Science), Akira Nakamura ( Tokyo University of Science), Makoto Itami ( Tokyo University of Science)

#### **7AM2-2-2 An effective single-carrier transmitter technique using CAZAC-OFDM scheme**

Kazuki Miyazawa (Tokyo University of Science), Masahiro Muraguchi ( Tokyo University of Science)

#### **7AM2-2-3 The Effect of IBI in Windowed-OFDM Systems and Time Domain Equalization**

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

#### **7AM2-2-4 A Frequency Domain Equalization Technique for CAZAC-OFDM Systems**

Yoshitsugu Sugai (Tokyo University of Science), Koichi Matsumoto ( Tokyo University of Science), Masahiro Muraguchi ( Tokyo University of Science)

#### **7AM2-2-5 A verification of the effect of removing narrow-band interference in CAZAC-OFDM**

Tota Funado (Tokyo University of Science), Masahiro Muraguchi ( Tokyo University of Science)

### **7AM2-3: Neural and Bio-Inspired Networks**

Date: March 7, 10:40-12:20

Room: Kaiulani III

Chair:Hiroo Sekiya (Chiba University)

#### **7AM2-3-1 Anomaly Detection for sewer pipe images using Convolutional Neural Network**

Yusuke Yoshie (Maebashi Institute of Technology), Hiroki Matsumoto ( Maebashi Institute of Technology), Tomomi Ogawa ( Maebashi Institute of Technology)

#### **7AM2-3-2 Experimental demonstration of physical reservoir computing with nonlinear electronic devices**

Shunya Suzuki (Hokkaido University), Seungwoo Rim ( Hokkaido University), Shinya Takamaeda-Yamazaki ( Hokkaido University), Masayuki Ikebe ( Hokkaido University), Masato Motomura ( Hokkaido University), Tetsuya Asai ( Hokkaido University)

#### **7AM2-3-3 Time Series Classification with Time Delay Coordinate System Using Convolutional Neural Network**

Tomoya Takata (Tokushima University), Ken Kamiyotsumoto ( Tokushima University), Kazuki Nagao ( Tokushima University), Yoko Uwate ( Tokushima University), Yoshifumi Nishio ( Tokushima University)

#### **7AM2-3-4 Hardware-Oriented Algorithm and Architecture for Generative Adversarial Networks**

Tatsuya Kaneko (Hokkaido University), Masayuki Ikebe ( Hokkaido University), Shinya Takamaeda-Yamazaki ( Hokkaido University), Masato Motomura ( Hokkaido University), Tetsuya Asai ( Hokkaido University)

#### **7AM2-3-5 Time Series Analysis of Neurons and Visualization of Network Characteristics**

Yoko Uwate (Tokushima University), Marie Engelen J. Obien ( MaxWell Biosystems), Urs Frey ( MaxWell Biosystems), Yoshifumi Nishio ( Tokushima University)

## 7PM1-1: Video Signal Processing

Date: March 7, 14:00-15:40

Room: Kaiulani I

Chair:Masatoshi Sato (Tamagawa University)

### 7PM1-1-1 A method for transcoding of HEVC to MPEG-2 with picture structure information

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

### 7PM1-1-2 A method for real-time transcoding of MPEG-2 to HEVC with picture structure information

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

### 7PM1-1-3 An Impatient Queuing Model for High-Speed Interactive Media Streaming Networks

Atsushi Inoue (Kanagawa Institute of Technology)

## 7PM1-2: Wireless Networks 1

Date: March 7, 14:00-15:40

Room: Kaiulani II

Chair:Shintaro Mori (Fukuoka University)

### 7PM1-2-1 Routing Control Considering Hot Spots in Wireless Chargeable Sensor Network

Yamato Takahashi (Kanagawa Institute of Technology), Shigeki Shiokawa ( Kanagawa Institute of Technology)

### 7PM1-2-2 Study on field sensing system using power saving microcomputer

Masatoshi Tamura (Aichi Institute of Technology), Takahiro Nimura ( Aichi Institute of Technology), Katsuhiro Naito ( Aichi Institute of Technology)

### 7PM1-2-3 Proposal of automated direct communication scheme among smartphones based on BLE technology

Toru Yoshizaki (Aichi Institute of Technology), Yuki Yamada ( Aichi Institute of Technology), Shinya Sugiura ( Aichi Institute of Technology), Katsuhiro Naito ( Aichi Institute of Technology)

### 7PM1-2-4 Proposal of digital bulletin board system among remote users

Yuki Yamada (Aichi Institute of Technology), Toru Yoshizaki ( Aichi Institute of Technology), Shinya Sugiura ( Aichi Institute of Technology), Katsuhiro Naito ( Aichi Institute of Technology)

### 7PM1-2-5 A Study on Evaluation and Visualization for Baseball Swings using Wearable Sensors

Hisanori Takai (Konan University), Masahiro Wada ( Konan University)

## 7PM1-3: Nonlinear Circuits and Systems

Date: March 7, 14:00-15:40

Room: Kaiulani III

Chair:Mio Kobayashi (National Institute of Tehnology, Anan College)

**7PM1-3-1 Amplitude decaying characteristic in an one-dimensional continuous micro-cantilever probe model**

Akira Sewaki (Chiba Institute of Technology), Kuniyasu Shimizu ( Chiba Institute of Technology)

**7PM1-3-2 Synchronization Phenomena in Coupled van der Pol Oscillators Chains with Hourglass Structure**

Takumi Nara (Tokushima University), Daiki Nariai ( Tokushima University), Yoko Uwate ( Tokushima University), Yoshifumi Nishio ( Tokushima University)

**7PM1-3-3 A Nonlinear Observer via Pseudo-Formal Linearization using Chebyshev Interpolation for Nonlinear Scalar-Measurement Systems**

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

**7PM1-3-4 Numerical study of mechanical oscillating behavior of Kelvin probe force microscope model**

Daiki Uchida (Chiba Institute of Technology), Akira Sewaki ( Chiba Institute of Technology), Kuniyasu Shimizu ( Chiba Institute of Technology)

**7PM1-3-5 Edge Model Embedding Method for Planar Filter Synthesis**

Kosuke Katayama (Waseda University), Kiyoto Takahata ( Waseda University), Takashi Ohsawa ( Waseda University), Takaaki Baba ( Waseda University)

## 7PM2-1: Speech Processing and Recognition 3

Date: March 7, 16:00-17:40

Room: Kaiulani I

Chair:Masashi Unoki (JAIST)

**7PM2-1-1 Multimodal Feature Conversion for Visual Speech Recognition using Deep Canonical Correlation Analysis**

Masaki Shimonishi (Gifu University), Satoshi Tamura ( Gifu University), Satoru Hayamizu ( Gifu University)

**7PM2-1-2 Study on Relations between Emotion Perception and Acoustic Features using Speech Morphing Techniques**

ZI Wang (Japan Advanced Institute of Science and Technology), Maori Kobayashi ( Japan Advanced Institute of Science and Technology), Masato Akagi ( Japan Advanced Institute of Science and Technology)

**7PM2-1-3 Categorizing Error Causes Related to Utterance Characteristics in Speech Recognition**

Jennifer Santoso (University of Tsukuba), Takeshi Yamada ( University of Tsukuba), Shoji Makino ( University of Tsukuba)

**7PM2-1-4 Study on the method for estimating perceptual age using sound quality metrics**

Tatsuya Hatakeyama (JAIST), Masashi Unoki ( JAIST)

**7PM2-1-5 Study on Nonlinear Relationships between Semantic Primitives and Emotional Dimensions for Improving Three-layered Model**

Xingyu Liu (JAIST), Reda Elsaid Elbarougy ( JAIST, Damietta University,), Masato Akagi ( JAIST)

## 7PM2-2: Wireless Networks 2

Date: March 7, 16:00-17:40

Room: Kaiulani II

Chair:Katsuhiro Naito (Aichi Institute of Technology)

**7PM2-2-1 A Study on Lightweight Blockchain-based Secure Caching Scheme for Information-centric Network-based Unmanned Aerial Vehicle-assisted Wireless Sensor Networks**

Shintaro Mori (Fukuoka University)

**7PM2-2-2 Power Saving Using Sleep Control in DTN**

Hiroto Michitsuji (Kanagawa Institute of Technology), Shigeki Siokawa ( Kanagawa Institute of Technology)

**7PM2-2-3 Effective Charging Method Considering Hotspot in Wireless Rechargeable Sensor Networks**

Masumi Tadokoro (Kanagawa Institute of Technology), Shigeki Shiokawa ( Kanagawa Institute of Technology)

**7PM2-2-4 A Nobel Routing Method Using the Slime Mold Algorithm for Content-oriented Networks**

Tsubasa Takaoka (Tamagawa University), Masatoshi Sato ( Tamagawa University), Tsuyoshi Otake ( Tamagawa University), Takuya Asaka ( Tokyo Metropolitan University)

**7PM2-2-5 Accurate Analytical Model of Saturated Throughput of the IEEE 802.11p EDCA**

Shintaro Ikuma (Chiba University), Kien Nguyen ( Chiba University), Hiroo Sekiya ( Chiba University)

## 7PM2-3: Bifurcation and Chaos

Date: March 7, 16:00-17:40

Room: Kaiulani III

Chair:Mikio Hasegawa (Tokyo University of Science)

**7PM2-3-1 Bifurcations related to transient EAD in a mathematical cardiac model**

Yuichiro Ito (Kagawa University), Hiroyuki Kitajima ( Kagawa University), Toru Yazawa ( Kagawa University)

**7PM2-3-2 Investigation of Coupled Chaotic Circuits with Ladder and Ring Structures**

Katsuya Nakabai (Tokushima University), Katsuki Nakashima ( Tokushima University), Yoko Uwate ( Tokushima University), Yoshifumi Nishio ( Tokushima University)

**7PM2-3-3 Experimental study of propagating wave phenomena in five-coupled bistable oscillators**

Masaru Takanashi (Chiba Institute of Technology), Kuniyasu Shimizu ( Chiba Institute of Technology)

**7PM2-3-4 Synchronization Phenomena in Coupled Chaotic Circuits with Coupling Strength Depending on Difference of Number of Links on Nodes**

Kyohei Fujii (Tokushima University), Shuhei Hashimoto ( Tokushima University), Yoko Uwate ( Tokushima University), Yoshifumi Nishio ( Tokushima University)

**7PM2-3-5 Influence of a heterogeneous sample surface in a driven micro-cantilever probe model**

Yuma Sato (Chiba Institute of Technology), Kuniyasu Shimizu ( Chiba Institute of Technology)