# Session Schedule (*tentative ed. as of February 20, 2020)

| | | Kaiulani I | Kaiulani II | Kaiulani III | Molokai |
|---|---|---|---|---|---|
| Feb. 29 | 09:00 \| 10:30 | [Special Session] Human Attributes Estimation from Behavior and Its Application<br>Chair: Takayuki Nagai<br><29AM1-1: Page 1> | Nonlinear Circuits and Systems 1<br>Chair: Yoko Uwate<br><29AM1-2: Page 1> | Wireless Communications 1<br>Chair: Yusuke Kozawa<br><29AM1-3: Page 2> | |
| | | Coffee break | | | |
| | 10:50 \| 12:20 | Estimation 1<br>Chair: Hiroto Saito<br><29AM2-1: Page 2> | Nonlinear Circuits and Systems 2<br>Chair: Tadashi Tsubone<br><29AM2-2: Page 3> | Wireless Communications 2<br>Chair: Shigeki Shiokawa<br><29AM2-3: Page 3> | Medical Applications<br>Chair: Yasue Mitsukura<br><29AM2-4: Page 4> |
| | 13:40 \| 15:10 | Estimation 2<br>Chair: Hiroshi Suzuki<br><29PM1-1: Page 4> | Neural and Bio-Inspired Networks 1<br>Chair: Kuniyasu Shimizu<br><29PM1-2: Page 5> | Speech Processing and Recognition 1<br>Chair: Yosuke Sugiura<br><29PM1-3: Page 5> | Optimization<br>Chair: Kazuo Komatsu<br><29PM1-4: Page 6> |
| | | Coffee break | | | |
| | 15:30 \| 17:00 | Estimation 3<br>Chair: Yoshifumi Ukita<br><29PM2-1: Page 6> | Neural and Bio-Inspired Networks 2<br>Chair: Katsumi Tateno<br><29PM2-2: Page 7> | Speech Processing and Recognition 2<br>Chair: Masato Akagi<br><29PM2-3: Page 7> | Detection<br>Chair: Hiroaki Hashiura<br><29PM2-4: Page 8> |
| Mar. 1 | 09:00 \| 10:30 | [Special Session] Machine Learning for IoT and Superconductivity<br>Chairs: Masakatsu Ogawa, Tomoaki Takao<br><1AM1-1: Page 8> | Complex Networks 1<br>Chair: Takafumi Matsuura<br><1AM1-2: Page 9> | Speech Processing and Recognition 3<br>Chair: Masashi Unoki<br><1AM1-3: Page 10> | |
| | | Coffee break | | | |
| | 10:50 \| 12:20 | Adaptive System<br>Chair: Yosuke Sugiura<br><1AM2-1: Page 10> | Complex Networks 2<br>Chair: Takuya Shindo<br><1AM2-2: Page 11> | Wireless Communications 3<br>Chair: Hiromasa Habuchi<br><1AM2-3: Page 11> | |
| | 13:40 \| 15:10 | Computer Vision 2<br>Chair: Takafumi Tanaka<br><1PM1-1: Page 12> | Bifurcation and Chaos<br>Chair: Yuu Miino<br><1PM1-2: Page 12> | Wireless Communications 4<br>Chair: Shintaro Arai<br><1PM1-3: Page 13> | |
| Mar. 2 | 09:00 \| 10:30 | [Special Session] Education Technology<br>Chairs: Takashi Tachino, Anthony Madden<br><2AM1-1: Page 13> | Learning and Modeling 1<br>Chair: Takayuki Kimura<br><2AM1-2: Page 14> | Optical Communications and Coding<br>Chair: Mariko Inamori<br><2AM1-3: Page 15> | |
| | | Coffee break | | | |
| | 10:50 \| 12:20 | Image Processing 1<br>Chair: Tomohiro Fujita<br><2AM2-1: Page 15> | Learning and Modeling 2<br>Chair: Masaharu Adachi<br><2AM2-2: Page 16> | Information Security 1<br>Chair: Hitoshi Tokushige<br><2AM2-3: Page 16> | |
| | 13:40 \| 15:10 | Image Processing 2<br>Chair: Takeshi Kumaki<br><2PM1-1: Page 17> | Power and Energy Systems 1<br>Chair: Katsuhiro Naito<br><2PM1-2: Page 17> | Information Security 2<br>Chair: Takeshi Fujino<br><2PM1-3: Page 18> | |
| | | Coffee break | | | |
| | 15:30 \| 17:00 | Image Processing 3<br>Chair: Taishi Iriyama<br><2PM2-1: Page 18> | Power and Energy Systems 2<br>Chair: Masahiro Wada<br><2PM2-2: Page 19> | Speech Processing and Recognition 4<br>Chair: Shoji Makino<br><2PM2-3: Page 19> | |

# Technical Program (*tentative ed. as of February 20, 2020)

## 29AM1-1: [Special Session] Human Attributes Estimation from Behavior and Its Application

Date: Feb. 29, 09:00-10:30
Room: Kaiulani I
Chair: Takayuki Nagai (Osaka University)

29AM1-1-1 **HSMM-SA-based Analysis of Childcare Worker's Interaction Strategy**

Yoshiki Higuchi (The University of Electro-Communications), Kasumi Abe (The University of Electro-Communications), Masatoshi Nagano (The University of Electro-Communications), Rena Kanai (J.F. Oberlin University), Masahiro Shiomi (ATR), Takayuki Nagai (Osaka University), Tomoaki Nakamura (The University of Electro-Communications)

29AM1-1-2 **Estimation of group activity participation from a video of nursery school**

Ryo Aoyagi (Tamagawa University), Yukimi Asari (Tamagawa University), Masahiro Miyata (Tamagawa University), Tetsuji Yamada (Tamagawa University), Takashi Omori (Tamagawa University)

29AM1-1-3 **Estimating Human Attributes by Clustering Moving Histories in Commercial Facilities**

Tsubasa Nakagawa (Kyoto Institute of Tecnology), Natsuki Oka (Kyoto Institute of Tecnology), Masahiro Araki (Kyoto Institute of Tecnology), Kaito Oka (Adinte Corporation)

29AM1-1-4 **Robust Human Trajectory Estimation Using Hidden Markov Models**

Ryo Matsumoto (The University of Electro-Communications), Tomoaki Nakamura (The University of Electro-Communications), Bin Zhang (Kanagawa University), Takayuki Nagai (Osaka University), Takashi Omori (Tamagawa University), Natsuki Oka (Kyoto Institute of Technology)

29AM1-1-5 **Prediction of Future Locations Based on Moving Behavior Data in Commercial Facilities**

Kazuki Oi (Kyoto Inst. of Tech), Natsuki Oka (Kyoto Inst. of Tech), Masahiro Araki (Kyoto Inst. of Tech), Kaito Oka (Adinte Inc.)

## 29AM1-2: Nonlinear Circuits and Systems 1

Date: Feb. 29, 09:00-10:30
Room: Kaiulani II
Chair: Yoko Uwate (Tokushima University)

29AM1-2-1 **A Circuit Transformation of an Inductor with OTA's Suitable for Gm-C Complex Filter Design**

Tatsuya Fujii (University of Tsukuba), Kazuhiro Shouno (University of Tsukuba)

29AM1-2-2 **Study for MPPT Algorithm with Amplitude Optimization of Periodic Border to DC-DC Converter with Photovoltaic Module**

Kenta Shinohara (Okayama University of Science), Takuji Kousaka (Chukyo University), Nobuyuki Kasa (Okayama University of Science), Hirokazu Ohtagaki (Okayama University of Science), Hiroyuki Asahara (Okayama University of Science)

29AM1-2-3 **A New Embedded Battery Impedance Measurement System with Temperature Compensation**

Yuichiro Nishimura ( Ritsumeikan University ), Hideaki Ito ( Ritsumeikan University ), Lei Lin ( Ritsumeikan University ), Masahiro Fukui ( Ritsumeikan University )

29AM1-2-4 **Design of Class $E^2$ DC-DC Converter for Further Miniaturization**

Koyo Nagashima (Chiba Institute of Technology), Togo Konno (Chiba Institute of Technology), Yusuke Ogi (Chiba Institute of Technology), Fumiya Ebihara (Chiba Institute of Technology), Xiuqin Wei (Chiba Institute of Technology)

## 29AM1-3: Wireless Communications 1

Date: Feb. 29, 09:00-10:30
Room: Kaiulani III
Chair: Yusuke Kozawa (Ibaraki University)

29AM1-3-1 **A Study on Reduction of Inter-symbol Interference in DS-CDMA IVC based on Location Oriented Code Allocation**

Shohei Fukatsu (Tokyo University of Science), Akira Nakamura (Kanagawa University), Makoto Itami (Tokyo University of Science)

29AM1-3-2 **Non-coherent Detection Study for UWB Transmission in Interference Environments**

Kensuke Tanaka (Meiji University), Tetsushi Ikegami (Meiji University)

29AM1-3-3 **Improvement of Vehicle-to-Network Communications Utilizing In-Advance Quality of Service Notification**

Ryo Hasegawa (Nagoya Institute of Technology), Eiji Okamoto (Nagoya Institute of Technology), Hidenori Akita (DENSO CORPORATION)

29AM1-3-4 **Extraction of radio fingerprinting from software defined radio devices for development of specific emitter identification system**

Junya Nasaka (Ritsumeikan University), Tsukasa Sugimoto (Ritsumeikan University), Koji Nakamura (Ritsumeikan University), Sei Arima (Ritsumeikan University), Masaaki Kobayashi (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University)

29AM1-3-5 **A study on Specific Emitter Identification method using Allan deviation**

Tsukasa Sugimoto (Ritsumeikan university), Junya Nasaka (Ritsumeikan university), Koji Nakamura (Ritsumeikan university), Sei Arima (Ritsumeikan university), Takeshi Kumaki (Ritsumeikan university), Masaaki Kobayashi (Ritsumeikan university)

## 29AM2-1: Estimation 1

Date: Feb. 29, 10:50-12:20
Room: Kaiulani I
Chair: Hiroto Saito (Tokyo Denki University)

29AM2-1-1 **Wind Speed Prediction Model by Convolutional Neural Network Using Optical Flow of Clouds**

Mao Toyonaga (Tokushima University), Hiroshi Suzuki (Tokushima University), Takahiro Kitajima (Tokushima University), Akinobu Kuwahara (Tokushima University), Takashi Yasuno (Tokushima University), Kiyoshi Takigawa (Shikoku Research Institute Inc)

29AM2-1-2 **Correction Method for Numerical Forecast Wind Speed Data of MSM-GPV Using CNN**

Daichi Horihata (Tokushima Universuty), Hiroshi Suzuki (Tokushima Universuty), Takahiro Kitajima (Tokushima Universuty), Akinobu Kuwahara (Tokushima Universuty), Takashi Yasuno (Tokushima Universuty), Kiyoshi Takigawa (Shikoku Research Institute Inc.)

29AM2-1-3 **Failure Prediction Method for Mechanical Equipment from Vibration Data With LSTM-Autoencoder and GMM**

Shota Asahi (Gifu University), Ayaka Matsui (Gifu University), Satoshi Tamura (Gifu University), Satoru Hayamizu (Gifu University), Ryosuke Isashi (KYB Corporation), Akira Furukawa (KYB Corporation), Takayoshi Naito (KYB Corporation)

29AM2-1-4 **Workspace Enlargement of Cable Haptic Device using Linear Actuator**

Bastien Poitrimol (Tokyo Denki University), Hiroshi Igarashi (Tokyo Denki University)

## 29AM2-2: Nonlinear Circuits and Systems 2

Date: Feb. 29, 10:50-12:20
Room: Kaiulani II
Chair: Tadashi Tsubone (Nagaoka University of Technology)

29AM2-2-1 **Hybrid Euler method for discretizing continuous-time tomographic dynamical system**

Ryosuke Kasai (Tokushima University), Yusaku Yamaguchi (Shikoku Medical Center for Children and Adults), Takeshi Kojima (Tokushima University), Tetsuya Yoshinaga (Tokushima University)

29AM2-2-2 **Proposal of content addressable memory-based massive-parallel SIMD matrix core**

Kyosuke Kageyama (Ritsumeikan Univ.), Akira Sekino (Ritsumeikan Univ.), Kensuke Watanabe (Ritsumeikan Univ.), Akimitsu Hamai (Ritsumeikan Univ.), Tetsushi Koide (Ritsumeikan Univ.), Takeshi Kumaki (Ritsumeikan Univ.)

29AM2-2-3 **Effectiveness of plant growth under 1 / f fluctuation LED light based on Photosynthetic Photon Flux Density**

Wataru Hokkyo (Ritsumeikan university), Takeshi Kumaki (Ritsumeikan university)

29AM2-2-4 **Design of 13.56 MHz Class-E Inverter by Using eGaN**

Yoshiki Sakurayama (Chiba Institute of Technology), Fumiya Ebihara (Chiba Institute of Technology), Yusuke Ogi (Chiba Institute of Technology), Xiuqin Wei (Chiba Institute of Technology)

## 29AM2-3: Wireless Communications 2

Date: Feb. 29, 10:50-12:20
Room: Kaiulani III
Chair: Shigeki Shiokawa (Kanagawa Institute of Technology)

29AM2-3-1 **Accelerating Computation Time of Shortest Route Searching using Physarum Solver Considering Convergence of Each Node in Content-oriented Networks**

Tsubasa Takaoka (Tamagawa University), Masatoshi Sato (Tamagawa University), Tsuyoshi Otake (Tamagawa University)

29AM2-3-2 **Multi-pass content acquisition method using overhear in ICN**

Kaede Shinohara (Kanagawa Institute of Technology), Shigeki Shiokawa (Kanagawa Institute of Technology)

29AM2-3-3 **Transmission Control Method using Hierarchical Clustering in Information-Centric Sensor Networks**

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

29AM2-3-4 **A Study of Device Discovery Performance at Network Formation of Device to Device(D2D) UWB Communications**

Go Saito (Meiji University), Tetsushi Ikegami (Meiji University)

29AM2-3-5 **A Study of Collision Avoidance Control Method for Multi-Rate Communication**

Asuna Yamasaki (Nippon Institute of Technology), Isamu Shitara (Nippon Institute of Technology), Takuya Shindo (Nippon Institute of Technology), Takefumi Hiraguri (Nippon Institute of Technology)

## 29AM2-4: Medical Applications

Date: Feb. 29, 10:50-12:20
Room: Molokai
Chair: Yasue Mitsukura (Keio University)

29AM2-4-1 **Comparison between Denoising Convolutional Neural Networks and Simple Convolutional Neural Networks for Denoising of Medical Images**

Aika Ohno (Tokushima University), Yuichi Miyata (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

29AM2-4-2 **Convergence Study of Iterative Image Reconstruction Algorithm with Power Exponent for Computed Tomography**

Yusaku Yamaguchi (Shikoku Medical Center for Children and Adults), Moe Kudo (Tokushima University), Takeshi Kojima (Tokushima University), Tetsuya Yoshinaga (Tokushima University)

29AM2-4-3 **Automatic Fixing of Start Point for Contour Line Tracking of Vein in Eye Fundus Image**

Yuki Okami (Yamaguchi University), Mashiho Mukaida (Yamaguchi University), Noriaki Suetake (Yamaguchi University), Eiji Uchino (Yamaguchi University)

29AM2-4-4 **Evaluation of Vitreous Opacity in Motion Video of Slit Lamp Examination**

Kana Ishibashi (Yamaguchi University), Noriaki Suetake (Yamaguchi University), Eiji Uchino (Yamaguchi University), Chiemi Yamashiro (Yamaguchi University), Kazuhiro Kimura (Yamaguchi University)

29AM2-4-5 **Shape Classification of Retinal Vein for Diagnosis of Arteriosclerosis Using SOM$^2$ with Automatic Affine Translation**

Hiroaki Koga (National Institute of Technology, Kurume College), Yuki Okami (Yamaguchi University), Mashiho Mukaida (Yamaguchi University), Eiji Uchino (Yamaguchi University)

## 29PM1-1: Estimation 2

Date: Feb. 29, 13:40-15:10
Room: Kaiulani I
Chair: Hiroshi Suzuki (Tokushima University)

29PM1-1-1 **Signal Recovery Algorithm based on Gaussian Mixture Model and Maximum Likelihood Approach to Hankel Matrix Completion**

Shota Kurokawa (Hosei University), Tomoki Shise (Tokyo University of Science), Ryohei Sasaki (Tokyo University of Science), Katsumi Konishi (Hosei University), Toshihiro Furukawa (Tokyo University of Science)

29PM1-1-2 **Simultaneous noise smoothing method in two-dimensional partial differential equations**

Masaki Kamikubo (Kogakuin University), Katsumi Konishi (Hosei University), Takashi Takekawa (Kogakuin University), Koji Koyamada (Kyoto University)

29PM1-1-3 **A Note on the Posterior Variance in Linear Basis Function Models for Experimental Designs**

Yoshifumi Ukita (Yokohama College of Commerce), Tomohiko Saito (Shonan Institute of Technology)

29PM1-1-4 **Anomaly detection in mechanical vibration using combination of signal processing and autoencoder**

Ayaka Matsui (Gifu University), Shota Asahi (Gifu University), Satoshi Tamura (Gifu University), Satoru Hayamizu (Gifu University), Ryosuke Isashi (KYB Corporation), Akira Furukawa (KYB Corporation), Takayoshi Naitou (KYB Corporation)

## 29PM1-2: Neural and Bio-Inspired Networks 1

Date: Feb. 29, 13:40-15:10
Room: Kaiulani II
Chair: Kuniyasu Shimizu (Chiba Institute of Technology)

29PM1-2-1 **Effects of Omitting Pruning Procedure on Extreme Learning Machine for Bifurcation Diagrams Reconstruction**

Arata Itaki (Tokyo Denki University), Yoshitaka Itoh (Hokkaido University of Science), Masaharu Adachi (Tokyo Denki University)

29PM1-2-2 **Electronic implementation of a physical reservoir composed of discrete semiconductor devices**

Shunya Suzuki (Hokkaido University), Koyo Minamikawa (Hokkaido University), Megumi Akai-Kasaya (Hokkaido University), Tetsuya Asai (Hokkaido University)

29PM1-2-3 **26-bits 400-neurons 0.3-ksps FORCE Learning FPGA Core for Reservoir Computing**

Koyo Minamikawa (Hokkaido University), Shunya Suzuki (Hokkaido University), Megumi Akai-Kasaya (Hokkaido University), Tetsuya Asai (Hokkaido University)

29PM1-2-4 **Dynamic Mode Decomposition Using Neural Ordinary Differential Equations**

Hiroaki Terao (Osaka University), Sho Shirasaka (Osaka University), Hideyuki Suzuki (Osaka University)

29PM1-2-5 **Mixed gas concentration estimation using a spiking neural network model**

Osamu Nakamura (University of Tsukuba), Katsumi Tateno (Kyushu Institute of Technology)

## 29PM1-3: Speech Processing and Recognition 1

Date: Feb. 29, 13:40-15:10
Room: Kaiulani III
Chair: Yosuke Sugiura (Saitama University)

29PM1-3-1 **Speech Separation Using DNN Based Mask Filtering**

Shoma Itagaki (Tokyo Denki University), Shigeo Wada (Tokyo Denki University)

29PM1-3-2 **Blind Source Separation with Low-Latency for In-Car Communication**

Tetsuya Ueda (University of Tsukuba), Shota Inoue (University of Tsukuba), Shoji Makino (University of Tsukuba), Mitsuo Matsumoto (University of Tsukuba), Takeshi Yamada (University of Tsukuba)

29PM1-3-3 **Crow call detection using gated convolutional recurrent neural network**

Yuki Okamoto (Ritsumeikan University), Keisuke Imoto (Ritsumeikan University), Naoki Tsukahara (CrowLab), Ken Nagata (CrowLab), Koh Sueda (National University of Singapore), Ryosuke Yamanishi (Ritsumeikan University), Yoichi Yamashita (Ritsumeikan University)

29PM1-3-4 **Spatial Feature Extraction Based on Convolutional Neural Network with Multiple Microphone Inputs for Monitoring of Domestic Activities**

Yuki Kaneko (University of Tsukuba), Rika Kurosawa (University of Tsukuba), Takeshi Yamada (University of Tsukuba), Shoji Makino (University of Tsukuba)

## 29PM1-4: Optimization

Date: Feb. 29, 13:40-15:10
Room: Molokai
Chair: Kazuo Komatsu (National Institute of Technology, Kumamoto College)

29PM1-4-1 **Whale Optimization Algorithm with Increased Number of Agents for Global Search**

Hidehiro Sugioka (Tokushima University), Ken Kamiyotsumoto (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

29PM1-4-2 **A Study on the Cultivation Method Using Sound Waves**

Yuki Hoshino (Nippon Institute of Technology), Takuya Shindo (Nippon Institute of Technology), Hiroyuki Shimizu (Nippon Institute of Technology), Kenko Ota (Nippon Institute of Technology), Msanori Kimoto (Nippon Institute of Technology), Takefumi Hiraguri (Nippon Institute of Technology)

29PM1-4-3 **An Artificial Bee Colony Algorithm Based on Reinsert Neighborhood Search for The Capacitated Vehicle Routing Problem**

Kazushi Hachisuka (Nippon Institute of Technology), Takafumi Matsuura (Nippon Institute of Technology)

29PM1-4-4 **A Nonlinear Observer Applied to an Electric Power System via a Pseudo-Formal Linearization of Polynomial Type**

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

## 29PM2-1: Estimation 3

Date: Feb. 29, 15:30-17:00
Room: Kaiulani I
Chair: Yoshifumi Ukita (Yokohama College of Commerce)

29PM2-1-1 **Prediction Model of Satellite Cloud Images Using PredNet**

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

29PM2-1-2 **Real-time Human Skelton Signal Prediction based on IPMS Algorithm**

Atsushi Kanayama (Kogakuin University), Tomoki Shise (Tokyo University of Science), Takashi Takekawa (Kogakuin University), Katsumi Konishi (Hosei University)

29PM2-1-3 **Investigate Physical Human Interaction Key Factor using Cooperative Model**

Genki Sasaki (Tokyo Denki University), Hiroshi Igarashi (Tokyo Denki University)

29PM2-1-4 **Identifying cooking activities using sensor data**

Chiaki Ogiwara (Tokyo Denki University), Hiroto Saito (Tokyo Denki University)

29PM2-1-5 **Nowcasting of Solar Radiation Using CNN with Changing Input Range of Meteorological Satellite Image**

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

## 29PM2-2: Neural and Bio-Inspired Networks 2

Date: Feb. 29, 15:30-17:00
Room: Kaiulani II
Chair: Katsumi Tateno (Kyushu Institute of Technology)

29PM2-2-1 **Synchronous firing in the 3-coupled Izhikevich neuron model**

Yuu Miino (Tokyo University of Technology), Tetsushi Ueta (Tokushima University)

29PM2-2-2 **Measurement of MMN using Inaudible Sound**

Akira Takeuchi (Hiroshima City University), Tatsuji Tokiwa (Hiroshima City University)

29PM2-2-3 **Detailed spectral profile analysis of electrocorticograms during freezing against penicillin G-induced epileptiform discharges in an anesthetized primate**

Ken-ei Matsuo (Hiroshima city University), Tatsuji Tokiwa (Hiroshima city University), Lev ZIMIN (Waseda University), Takao INOUE (Yamaguchi University), Sadahiro NOMURA (Yamaguchi University), Michiyasu SUZUKI (Yamaguchi University), Takeshi YAMAKAWA (Fuzzy Logic Systems Institute)

29PM2-2-4 **Modeling of Bursting Neurons and Its Characteristic using Nonlinear Time Series Analysis**

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

## 29PM2-3: Speech Processing and Recognition 2

Date: Feb. 29, 15:30-17:00
Room: Kaiulani III
Chair: Masato Akagi (JAIST)

29PM2-3-1 **Recognition of Multiple Speaker's Emotion using Continuous Emotion Intensity and Creating Emotional Speech Dataset for Deep Learning**

Ryota Sato (Tokyo University of Science), Ryohei Sasaki (Tokyo University of Science), Norisato Suga (Tokyo University of Science), Toshihiro Furukawa (Tokyo University of Science)

29PM2-3-2 **Labeling and Analysis of Perceived Emotion for Japanese Large-Scale Emotional Speech Database JTES**

Mai Yamanaka (Tohoku University), Takashi Nose (Tohoku University), Yuya Chiba (Tohoku University), Akinori Ito (Tohoku University)

29PM2-3-3 **E2E Streaming Speech Recognition Using CTC and Local Attention**

Jiahao Chen (Tokushima University), Ryota Nishimura (Tokushima University), Norihide Kitaoka (Toyohashi University of Technology)

29PM2-3-4 **Acquisition speaker individuality using VQ-VAE with latent space classifier for voice conversion**

Taiho Takeuchi (Shizuoka University), Yosuke Tatekura (Shizuoka University)

## 29PM2-4: Detection

Date: Feb. 29, 15:30-17:00
Room: Molokai
Chair: Hiroaki Hashiura (Nippon Institute of Technology)

29PM2-4-1 **An Image Selection Method from Image Sequence Collected by Remotely Operated Robot for Efficient 3D Reconstruction**

Toshihide Hanari (Japan Atomic Energy Agency), Kuniaki Kawabata (Japan Atomic Energy Agency), Keita Nakamura (University of Aizu), Keitaro Naruse (University of Aizu)

29PM2-4-2 **A learning data collection using a simulator for point cloud based identification system**

Yuta Tanifuji (Japan Atomic Energy Agency), Kuniaki Kawabata (Japan Atomic Energy Agency)

29PM2-4-3 **Evaluation of Movability of Shoulder Abduction and Ankle Joints from Depth Images and Its Application to Diagnosis of Hemiplegia**

Tomoya Ohnishi (Konan University), Masahiro Tanaka (Konan University)

29PM2-4-4 **A Study on Visualization and Evaluation for Various Exercises using Wireless Wearable Sensors**

Masahiro Wada (Konan University)

29PM2-4-5 **Application of depth data to physical movement screening**

Tomohiro Iwasaki (Konan University), Masahiro Tanaka (Konan University)

## 1AM1-1: [Special Session] Machine Learning for IoT and Superconductivity

Date: Mar. 1, 09:00-10:30
Room: Kaiulani I
Chair: Masakatsu Ogawa (Sophia University), Tomoaki Takao (Sophia University)

1AM1-1-1 **Development of Test Device for Aluminum Metal Melting by Induction Heating Using DC HTS Coils**

Satoshi Fukui (Niigata University), Jun Ogawa (Niigata University), Tomonori Watanabe (Chubu Electric Power Co. Inc.), Shigeo Nagaya (Chubu Electric Power Co. Inc.), Mitsuho Furuse (National Institute of Advanced Industrial Science and Technology)

1AM1-1-2 **Attempt to Make Uniform Magnetic Fields on HTS Bulk Magnet Activated by Pulsed-Field Magnetization**

Tetsuo Oka (shibaura Institute of Technology), Natsuki Inoue (shibaura Institute of Technology), Shunta Tsunoda (Niigata University), Jun Ogawa (Niigata University), Satishi Fukui (Niigata University), Kazuya Yokoyama (Ashikaga University), Naomichi Sakai (shibaura Institute of Technology), Masato Murakami (shibaura Institute of Technology), Masato Takahashi (RIKEN), Takashi Nakamura (RIKEN)

1AM1-1-3 **Human Flow Prediction with Wi-Fi CSI using Machine Learning**

Hirofumi Munetomo (Sophia University), Masakatsu Ogawa (Sophia University)

1AM1-1-4 **Study and evaluation of noise reduction method for alarm sound classification**

Yuuki Hashizume (Kanagawa Institute of Technology), Takeru Kadokura (Kanagawa Institute of Technology), Yuusuke Kawakita (Kanagawa Institute of Technology), Hiroshi Tanaka (Kanagawa Institute of Technology)

## 1AM1-2: Complex Networks 1

Date: Mar. 1, 09:00-10:30
Room: Kaiulani II
Chair: Takafumi Matsuura (Nippon Institute of Technology)

1AM1-2-1 **Switched-Capacitor Circuit Implementation of the Chaotic Neural Network Reservoir**

Maakito Inoue (Tohoku University), Keisuke Fukuda (Tohoku University), Yoshihiko Horio (Tohoku University)

1AM1-2-2 **Memory Capacity of Scale-free Highly Clustered Echo-state Network with a Mixture of Deterministic and Stochastic Data Inputs**

Masahiko Sano (Tokyo Denki University), Masaharu Adachi (Tokyo Denki University)

1AM1-2-3 **Deep Reinforcement Learning Control of an Underactuated Large Population of Coupled Oscillators**

Maaki Nakasaka (Osaka University), Sho Shirasaka (Osaka University), Hideyuki Suzuki (Osaka University)

1AM1-2-4 **Proposal of management cloud software supporting multi-thread processing for overlay network protocol**

Shuhei Isomura (Aichi Institute of Technology), Yuki Yamada (Aichi Institute of Technology), Taiki Yoshikawa (Aichi Institute of Technology), Kohei Tanaka (unaffiliated), Katsuhiro Naito (Aichi Institute of Technology)

1AM1-2-5 **Proposal of mobile transparency protocol framework for smartphone**

Yuki Yamada (Aichi Institute of Technology), Shuhei Isomura (Aichi Institute of Technology), Taiki Yoshikawa (Aichi Institute of Technology), Kohei Tanaka (Unaffiliated), Katsuhiro Naito (Aichi Institute of Technology)

## 1AM1-3: Speech Processing and Recognition 3

Date: Mar. 1, 09:00-10:30
Room: Kaiulani III
Chair: Masashi Unoki (JAIST)

1AM1-3-1 **A Study on Automatic English Prosody Evaluation Using Attention-based Bidirectional LSTM**

Shota Ueda (Tohoku University), Yuya Chiba (Tohoku University), Takashi Nose (Tohoku University), Akinori Ito (Tohoku University)

1AM1-3-2 **Study on relationship between warmness of speech and valence, activation or dominance**

Natsumi Miyagawa (Japan Advanced Institute of Science and Technology), Masato Akagi (Japan Advanced Institute of Science and Technology)

1AM1-3-3 **Influence of auditory feedback on uttering vowel speech under noisy environment**

Tomoya Nishigaki (Japan Advanced Institute of Science and Technology), Masato Akagi (Japan Advanced Institute of Science and Technology)

1AM1-3-4 **Voice Recognition Using Surrogate Data Method with Neural Network**

Tomiyuki Furugaki (Tokushima University), Tomoya Takata (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

1AM1-3-5 **Analysis of Acoustic Features Affected by Conditions of the Vocal Tract**

Masahiro Koto (Chiba University), Tomoki Hosoyama (Chiba University), Masafumi Nishimura (Shizuoka University), Masafumi Nishida (Shizuoka University), Yasuo Horiuchi (Chiba University), Shingo Kuroiwa (Chiba University)

## 1AM2-1: Adaptive System

Date: Mar. 1, 10:50-12:20
Room: Kaiulani I
Chair: Yosuke Sugiura (Saitama University)

1AM2-1-1 **Reducing Discomfort of Dental Treatment Sound based on Simultaneous Auditory Masking with Environmental Sound**

Marori Yoshioka (Ritsumeikan University), Shunsuke Endo (Ritsumeikan University), Kenta Iwai (Ritsumeikan University), Takanobu Nishiura (Ritsumeikan University)

1AM2-1-2 **Parameter identification of IIR adaptive filters by using particle swarm optimization and its application to HRIR**

Yutaro Arai (Nagaoka University of Technology), Yasunori Sugita (Nagaoka University of Technology), Tadashi Tsubone (Nagaoka University of Technology)

1AM2-1-3 **Simulation evaluation of autonomous robot using CMAC+ threshold learning cell**

Iori Koizumi (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University), Takeshi Ogura (Ritsumeikan University), Tomohiro Fujita (Ritsumeikan University)

1AM2-1-4 **Performance Evaluation of Reflex Control System with Threshold Learning Cell**

Soichiro Yamada (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University), Takeshi Ogura (Ritsumeikan University), Tomohiro Fujita (Ritsumeikan University)

## 1AM2-2: Complex Networks 2

Date: Mar. 1, 10:50-12:20
Room: Kaiulani II
Chair: Takuya Shindo (Nippon Institute of Technology)

1AM2-2-1 **Simulation of a Dynamic Taxi Ridesharing Problem Considering with Refusal of Ride**

Hisashi Abiko (Nippon Institute of Technology), Takafumi Matsuura (Nippon Institute of Technology)

1AM2-2-2 **Prediction of Chaotic Time Series by Hybrid FORCE Learning**

Masaya Muramatsu (Osaka University), Sho Shirasaka (Osaka University), Masaki Nakagawa (Osaka University), Hideyuki Suzuki (Osaka University)

1AM2-2-3 **Numerical study on injection locked and unlocked states in two-coupled multi-phase ring oscillators**

Seiya Takano (Chiba Institute of Technology), Kuniyasu Shimizu (Chiba Institute of Technology)

1AM2-2-4 **Analytical study on a micro-cantilever probe model with one degree of freedom for atomic force microscopy**

Tsugumi Aikawa (Chiba Instiute of Technology), Kuniyasu Shimizu (Chiba Instiute of Technology)

1AM2-2-5 **Proposal of shared library supporting multi-platform for overlay network protocol**

Taiki Yoshikawa (Aichi Institute of Technology), Yuki Yamada (Aichi Institute of Technology), Shuhei Isomura (Aichi Institute of Technology), Kohei Tanaka (Unaffiliated), Katsuhiro Naito (Aichi Institute of Technology)

## 1AM2-3: Wireless Communications 3

Date: Mar. 1, 10:50-12:20
Room: Kaiulani III
Chair: Hiromasa Habuchi (Ibaraki University)

1AM2-3-1 **The experiment of Unmanned Aerial System Traffic Management by using satellite communication and the Solar Plane**

Tasuku Nagoya (SKYPerfecJSAT), Jumpei Kuboniwa (SKYPerfecJSAT), Tetsumi Takamori (SKYPerfecJSAT), Ryu Miura (NICT), Fumie Ono (NICT), Toshinori Kagawa (NICT), Shan Lin (NICT)

1AM2-3-2 **Location Estimation Study using Direct Sequence Chirp Signal**

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

1AM2-3-3 **A Study on Propagation and Interference Characteristics of Indoor Low Speed Communication in 920MHz Band**

Hiroki Suzuki (Meiji university), Tetsushi Ikegami (Meiji university)

1AM2-3-4 **13.6 dBi Stacked-Yagi Antenna on A PCB for Edge Computing**

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

## 1PM1-1: Computer Vision 2

Date: Mar. 1, 13:40-15:10
Room: Kaiulani I
Chair: Takafumi Tanaka (Tamagawa University)

1PM1-1-1 **CenterNet based Object Detection System for 360-degree Panorama Video System**

Yuki Kakiuchi (Tokuhsima University), Tian Song (Tokushima University), Takahumi Katayama (Tokushima University), Takashi Shimamoto (Tokushima University)

1PM1-1-2 **Detecting Backdoor Attacks on Deep Neural Networks by Saliency Map Clustering**

Takumi Iida (Ritsumeikan University), Kota Yoshida (Ritsumeikan University), Takeshi Fujino (Ritsumeikan University)

1PM1-1-3 **Semantic Image Synthesis of Complicated Objects using Line-drawing**

Natsuki Ogino (University of Tsukuba), Kazumasa Horie (University of Tsukuba), Hiroyuki Kitagawa (University of Tsukuba)

1PM1-1-4 **CNN-based Segmentation and Recognition of Traffic Signs with Parameter Regions**

Toshiki Haraguchi (Kobe University), Nobutaka Kuroki (Kobe University), Testuya Hirose (Osaka University), Masahiro Numa (Kobe University)

1PM1-1-5 **DNN-based Lipreading incorporating image and feature points**

Naruho Nakashima (Gifu University), Ryoma Yamashita (Gifu University), Satoshi Tamura (Gifu University), Satoru Hayamizu (Gifu University)

1PM1-1-6 **Black-Box Adversarial Attack Utilizing Quantized Probability Output against Deep Neural Network Classifier**

Haruki Masuda (Ritsumeikan university), Tsunato Nakai (Ritsumeikan university), Kota Yoshida (Ritsumeikan university), Takaya Kubota (Ritsumeikan university), Mitsuru Shiozaki (Ritsumeikan university), Takeshi Fujino (Ritsumeikan university)

## 1PM1-2: Bifurcation and Chaos

Date: Mar. 1, 13:40-15:10
Room: Kaiulani II
Chair: Yuu Miino (Tokyo University of Technology)

1PM1-2-1 **Investigating Dynamical Behavior with Higher Dimensions in Four Dimensional Hyper-chaotic Systems**

Tsuyoshi Isozaki (Tokushima University), Takumi Nara (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

1PM1-2-2 **Evaluation of Complexity of Chaos in Many Degrees of Freedom Chaotic Circuits Using Poincare Map**

Naoto Yonemoto (Tokushima University), Katsuya Nakabai (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

1PM1-2-3 **Experimental Study on Synchronization Phenomenon observed in Passive Walking Robots on a Hanging Base**

Naoya Suruga (Nagaoka University of Technology), Tadashi Tsubone (Nagaoka University of Technology)

1PM1-2-4 **Dynamical systems analysis of learning process in neural networks**

Satsuki Wada (Kagawa University), Takuma Ryugou (Kagawa University), Hiroyuki Kitajima (Kagawa University)

1PM1-2-5 **Synchronization in coupled heterogeneous neurons with star structure**

Taichi Toya (Shibaura Institute of Technology), Eri Ioka (Shibaura Institute of Technology)

## 1PM1-3: Wireless Communications 4

Date: Mar. 1, 13:40-15:10
Room: Kaiulani III
Chair: Shintaro Arai (Okayama University of Science)

1PM1-3-1 **Optimized CSK constellations for underwater SLIPT**

Takuma Kogo (Ibaraki University), Yusuke Kozawa (Ibaraki University), Hiromasa Habuchi (Ibaraki University)

1PM1-3-2 **Optimization of Frame Synchronization System for Optical Wireless Hybrid PPM-OOK Frame Communication**

Tomohiro Kiguchi (Ibaraki University), Ran Sun (Ibaraki University), Hiromasa Habuchi (Ibaraki University), Yusuke Kozawa (Ibaraki University)

1PM1-3-3 **Enhancement of Optical Wireless Punctured Turbo Code System in Strong Turbulence Channel**

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

1PM1-3-4 **PAPR Performance of CI-OFDM with Totally Blind Channel Estimation**

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

1PM1-3-5 **A MIMO Channel Simulator Employing Ray Tracing Methods for Underwater Acoustic Communications**

Yoshiki Tsukamoto (Ritsumeikan University), Hiroshi Kubo (Ritsumeikan University)

1PM1-3-6 **Audible-Band Spread Spectrum Acoustic Communications Adapting to Acoustic Communications Environment**

Yuichi Shirasu (Ritsumeikan University), Hiroshi Kubo (Ritsumeikan University)

## 2AM1-1: [Special Session] Education Technology

Date: Mar. 2, 09:00-10:30
Room: Kaiulani I
Chair: Takashi Tachino (Shoin University), Anthony Madden (Kanda Institute of Foreign Languages)

2AM1-1-1 **The Effect of Multitasking Behavior on Business Game Practice -Comparative Study Between Laptops, Tablets and Smartphones in a Business Game-**

Takashi Tachino (Shoin University), Noboru Wakayama (Teikyo University), Anthony Madden (Kanda Institute of Foreign Languages), Yasuhito Kishi (Shoin University), Takayuki Fujimaki (Mejiro University), Yuuki Kato (Sagami Women's University), Shogo Kato (Tokyo Woman's Christian University)

2AM1-1-2 **Second Life and Foreign Language Acquisition: Using Game Software to Enhance Engagement, Overcome Shyness, and Increase Speaking Opportunities of EFL Vocational Students**

Anthony Madden (Kanda Institute of Foreign Languages), Takashi Tachino (Shoin University), Masumi Yamaike (Kanda Institute of Foreign Languages), Yasuhito Kishi (Shoin University), Jaewook Kim (Shoin University)

2AM1-1-3 **A Study of Automated Keyword Extraction from Online Video Subtitles with Difficulty Scores for Self-Learning**

Yasuhito Kishi (Shoin University), Masumi Yamaike (Kanda Institute of Foreign Languages), Takashi Tachino (Shoin University), Anthony Madden (Kanda Institute of Foreign Languages)

2AM1-1-4 **Practice to improve non-cognitive abilities in an age of Digital Native -Consideration in the Effect of ``Fake News'' Reading as a Media Literacy Education-**

Noboru Wakayama (Teikyo University), Takashi Tachino (Shoin University), Anthony Madden (Kanda Institute of Foreign Languages), Takayuki Fujimaki (Mejiro University)

2AM1-1-5 **Introducing Terra Talk: Advanced Self-study with AI**

Masumi Yamaike (Kanda Institute of Foreign Languages), Yasuhito Kishi (Shoin University), Anthony Madden (Kanda Institute of Foreign Languages), Takashi Tachino (Shoin University), Jaewook Kim (Shoin University)

## 2AM1-2: Learning and Modeling 1

Date: Mar. 2, 09:00-10:30
Room: Kaiulani II
Chair: Takayuki Kimura (Nippon Institute of Technology)

2AM1-2-1 **Sharp sound image construction with high sound quality based on sound blending using parametric and dynamic loudspeakers**

Naoto Shimada (Ritsumeikan University), Kenta Iwai (Ritsumeikan University), Masato Nakayama (Osaka Sangyo University), Takanobu Nishiura (Ritsumeikan University)

2AM1-2-2 **Error-Pattern Mining from Learners' Conceptual Models Using Non-Negative Matrix Factorization**

Takafumi Tanaka (Tamagawa University), Hiroaki Hashiura (Nippon Institute of Technology)

2AM1-2-3 **Human Friendly Safe Driving Support System of Electric Wheelchair Based on Acceleration Information**

Yoshiki Sanada (Tokushima University), Hiroshi Suzuki (Tokushima University), Tomoki Matsuo (Tokushima University), Akinobu Kuwahara (Tokushima University), Takahiro Kitajima (Tokushima University), Takashi Yasuno (Tokushima University)

2AM1-2-4 **Driver Assistance Control Based on Recognition of Road Conditions**

Yotaro Oki (Tokushima University), Hiroshi Suzuki (Tokushima University), Kenji Yamanaka (Tokushima University), Akinobu Kuwahara (Tokushima University), Yasuno Takashi (Tokushima University)

2AM1-2-5 **Supporting Tool to Apply Software Frameworks in Software Design**

Ken Akagi (Nippon Institute of Technology), Hiroaki Hashiura (Nippon Institute of Technology), Takafumi Tanaka (Tamagawa University), Atsuo Hazeyama (Tokyo Gakugei University), Hiroshi Takase (Nippon Institute of Technology)

## 2AM1-3: Optical Communications and Coding

Date: Mar. 2, 09:00-10:30
Room: Kaiulani III
Chair: Mariko Inamori (Tokai University)

2AM1-3-1 **Multiple Access Capability of Einarsson Code based Optical-Wireless Code Shift Keying System**

Tomofumi Haruna (Ibaraki university), Hiromasa Habuchi (Ibaraki university), Yusuke Kozawa (Ibaraki university)

2AM1-3-2 **Performance Enhancement of Equal-Weight (2, 2) Visual Secret Sharing System with MPOMS on Illumination-Light VN-CSK Communication**

Keisuke Manaka (Ibaraki University), Liyuan Chen (Ibaraki University), Hiromasa Habuchi (Ibaraki University), Yusuke Kozawa (Ibaraki University)

2AM1-3-3 **Effect of Rank Deficiency in Optical Channel Estimation Using Pseudo-Inverse Matrix for Image Sensor Communication**

Tsuyoshi Kanemitsu (Okayama University of Science), Toshiyuki Komi (Okayama University of Science), Shintaro Arai (Okayama University of Science), Tomohiro Yendo (Nagaoka University of Technology)

2AM1-3-4 **On a Soft-input and Soft-output Iterative Decoding Algorithm for Reed-Muller Codes**

Hitoshi Tokushige (Kumamoto Gakuen University)

2AM1-3-5 **A Heuristic Algorithm for the Construction of 2-level Linear Unequal Error Protection Codes**

Tomohiko Saito (Shonan Institute of Technology), Yoshifumi Ukita (Yokohama College of Commerce), Toshiyasu Matsushima (Waseda University), Shigeichi Hirasawa (Waseda University)

## 2AM2-1: Image Processing 1

Date: Mar. 2, 10:50-12:20
Room: Kaiulani I
Chair: Tomohiro Fujita (Ritsumeikan University)

2AM2-1-1 **Developing Intuitive Control Function to Improve Reading Experiment**

Yan Ding (Takushoku University), Yihsin Ho (Takushoku University)

2AM2-1-2 **Extending Reading Content to Deepen Understanding by Hand Motion Control**

Han Xue (Takushoku University), Yihsin Ho (Takushoku University)

2AM2-1-3 **Development of flicker-noise-based lighting communication method**

Takuya Shimada (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University)

2AM2-1-4 **Bitrate Fluctuation Control Method for VVC-based Drone Video Coding System**

Soichiro Iino (Tokushima University), Tian Song (Tokushima University), Takahumi Katayama (Tokushima University), Takashi Shimamoto (Tokushima University)

2AM2-1-5 **Automatic Object Feature Extraction of Graph Cut Image Segmentation by Deep Learning**

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

## 2AM2-2: Learning and Modeling 2

Date: Mar. 2, 10:50-12:20
Room: Kaiulani II
Chair: Masaharu Adachi (Tokyo Denki University)

2AM2-2-1 **Modeling time series of inclination in caisson by deep neural network**

Kento Motomizu (Gifu University), Satoshi Tamura (Gifu University), Satoru Hayamizu (Gifu University), Masahiro Shindo (Oriental Shiraishi Corporation ), Toshihiro Kondo (Oriental Shiraishi Corporation ), Naoto Negishi (Oriental Shiraishi Corporation ), Akio Shoji (Oriental Shiraishi Corporation )

2AM2-2-2 **Effective Data Augmentation Method with Sequence Numbers from Chaos Phenomenon for Convolution Neural Network Learning**

Yuji Yamauchi (Tokushima University), Yuichi Miyata (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

2AM2-2-3 **Multiple Piecewise Affine Model Based Locally Low-Rank Approach to Image Inpainting**

Tomoki Shise (Tokyo University of Science), Katsumi Konishi (Hosei University), Ryohei Sasaki (Tokyo University of Science), Toshihiro Furukawa (Tokyo University of Science)

2AM2-2-4 **A Proposed Method for Recovering Traceability Links between Documents and Codes Written in Different Languages**

Yusuke Yoshida (Nippon Institute of Technology), Hiroaki Hashiura (Nippon Institute of Technology), Takafumi Tanaka (Tamagawa University), Atsuo Hazeyama (Tokyo Gakugei University), Hiroshi Takase (Nippon Institute of Technology)

2AM2-2-5 **A Solving Method using Chaotic Search Introducing Alleviation of Constraints for The Vehicle Routing Problems with Time Windows**

Kazunori Hagiwara (Nippon Institute of Technology), Toshichika Aoki (Nippon Institute of Technology), Takayuki Kimura (Nippon Institute of Technology)

## 2AM2-3: Information Security 1

Date: Mar. 2, 10:50-12:20
Room: Kaiulani III
Chair: Hitoshi Tokushige (Kumamoto Gakuen University)

2AM2-3-1 **LUT-Network based Physical Unclonable Function and its Evaluation**

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

2AM2-3-2 **Hierarchical GA based Modeling Analysis for RO PUF**

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

2AM2-3-3 **Dependency Evaluation between Performance Metrics and Response-Bit Length of a CIS-PUF**

Tatsuya Oyama (Ritsumeikan University), Masayoshi Shirahata (Ritsumeikan University), Mitsuru Shiozaki (Ritsumeikan University), Shunsuke Okura (Ritsumeikan University), Takeshi Fujino (Ritsumeikan University)

2AM2-3-4 **The Shannon Cipher System with Causal Disclosure over Separable Noisy Channels**

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

2AM2-3-5 **Sum-Capacity Region of a Multi-Enrollment Rate-Constrained System Using PUF Observations**

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

## 2PM1-1: Image Processing 2

Date: Mar. 2, 13:40-15:10
Room: Kaiulani I
Chair: Takeshi Kumaki (Ritsumeikan University)

2PM1-1-1 **Bayer pattern CFA Demosaicking with Channel-Wise Predictive Filter Flow**

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

2PM1-1-2 **RGB Color Image Super-Resolution Based on Iterative Back-Projection with Direction-Oriented Predictors**

Ryuya Ukai (Cyukyo University), Yuki Kawai (Cyukyo University), Hideharu Toda (Cyukyo University), Tsuyoshi Otake (Tamagawa University), Masatoshi Sato (Tamagawa University), Hisashi Aomori (Cyukyo University)

2PM1-1-3 **Hierarchical Lossless Image Coding using CNN Predictors having Extended Internal Representation Optimized by Adaptive Differential Evolution**

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

2PM1-1-4 **Edge Detection and Noise Removal in Cellular Neural Networks Using Switching Two-Type Templates**

Sosuke Nakano (Tokushima University), Kodai Kitamura (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

2PM1-1-5 **Image Sharpening for Blurred Images with Multiple Processes by Using Cellular Neural Networks**

Kodai Kitamura (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

## 2PM1-2: Power and Energy Systems 1

Date: Mar. 2, 13:40-15:10
Room: Kaiulani II
Chair: Katsuhiro Naito (Aichi Institute of Technology)

2PM1-2-1 **Controlling an Unstable Periodic Waveform Using Evolution of Perturbation in Hybrid Dynamical Systems**

Shota Uchino (Okayama University of Science), Hiroyuki Asahara (Okayama University of Science)

2PM1-2-2 **Experiment of communication method with three-phase motor cable**

Ryo Osawa (Tokai university), Hideki Ohguchi (Tokai university), Mamiko Inamori (Tokai university)

2PM1-2-3 **Proposal of reservoir computing architecture with ITCAM**

Tadashi Naito (Ritsumeikan University), Syogo Nakahara (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University)

2PM1-2-4 **Effecft of transport delay on charging/discharging dynamics of redox flow battery under load variation**

Toko Mannari (Kyoto University), Takashi Hikihara (Kyoto University)

## 2PM1-3: Information Security 2

Date: Mar. 2, 13:40-15:10
Room: Kaiulani III
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2PM1-3-1 **Study on a Chaotic stream cipher applying a Rabin cipher**

Taichi Sato (Meiji University), Takashi Arai (Meiji University), Hiroyuki Kamata (Meiji University)

2PM1-3-2 **A Small Size Oriented Countermeasure against Power Analysis on Low Latency Cryptography Implementation**

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

2PM1-3-3 **Vulnerability Evaluation of Mobile Robot with Sensors against Malicious Attacks**

Kanata Nishida (Meijo University), Yusuke Nozaki (Meijo University), Ryo Kurachi (Nagoya University), Shinya Honda (Nagoya University), Masaya Yoshikawa (Meijo University)

2PM1-3-4 **Deep Learning Attack against Large n-XOR PUFs on 180nm Silicon Chips**

Risa Yashiro (The University of Electro-Communications), Yohei Hori (National Institute of Advanced Industrial Science and Technology), Toshihiro Katashita (National Institute of Advanced Industrial Science and Technology), Kazuo Sakiyama (The University of Electro-Communications)

2PM1-3-5 **Tamper Resistance Evaluation of MLP with Software Implementation against Power Consumption based Model Extraction**

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

## 2PM2-1: Image Processing 3

Date: Mar. 2, 15:30-17:00
Room: Kaiulani I
Chair: Taishi Iriyama (Tamagawa University)

2PM2-1-1 **Personal identification using Doppler radar images of sit-to-stand and stand-to-sit movements**

Keitaro Shioiri (Toyama Prefectural University), Keisuke Inuzuka (Toyama Prefectural University), Kenshi Saho (Toyama Prefectural University)

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Kota Yoshida (Ritsumeikan University), Takeshi Fujino (Ritsumeikan University)

2PM2-1-3 **Self-position Estimation of Unmanned Spacecraft by Lunar Image Classification using Deep Learning**

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2PM2-1-4 **Rotation Invariant-Digits Recognition with Single Convolutional Neural Networks**

Kazuya Urazoe (Kobe University), Nobutaka Kuroki (Kobe University), Tetsuya Hirose (Osaka University), Masahiro Numa (Kobe University)

2PM2-1-5 **DCGAN with Image Retrieval for Practical Image Generation**

Takayoshi Komuro (Tokyo Denki University), Shigeo Wada (Tokyo Denki University)

## 2PM2-2: Power and Energy Systems 2

Date: Mar. 2, 15:30-17:00
Room: Kaiulani II
Chair: Masahiro Wada (Konan University)

2PM2-2-1 **An Accurate Assembled Battery Impedance Measurement System and Its Evaluation**

Hideaki Ito (Ritsumeikan University), Yuichiro Nishimura (Ritsumeikan University), Lei Lin (Ritsumeikan University), Masahiro Fukui (Ritsumeikan University)

2PM2-2-2 **Loss Analysis of Antenna Parameter Measurement Method in Wireless Power Transmission**

Kikuta Inoue (Tokai University), Mamiko Inamori (Tokai University)

2PM2-2-3 **A Robust Wireless Power Transfer System for Multiple Receivers**

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

2PM2-2-4 **Analysis and Design of Class-$EF_2$-E Wireless Power Transfer System**

Yusuke Hagiwara (Chiba Institute of Technology), Kazuki Miyauchi (Chiba Institute of Technology), Fumiya Ebihara (Chiba Institute of Technology), Yusuke Ogi (Chiba Institute of Technology), Xiuqin Wei (Chiba Institute of Technology)

2PM2-2-5 **Investigation of wired communication using motor cables**

Yusuke Kida (Tokai University), Mamiko Inamori (Tokai University)

## 2PM2-3: Speech Processing and Recognition 4

Date: Mar. 2, 15:30-17:00
Room: Kaiulani III
Chair: Shoji Makino (University of Tsukuba)

2PM2-3-1 **Underdetermined Multichannel Speech Enhancement Using Time-Frequency-Bin-Wise Switching Beamformer and Gated CNN-Based Time-Frequency Mask for Reverberant Environments**

Riki Takahashi (University of Tsukuba), Kouei Yamaoka (Tokyo Metropolitan University), Li Li (University of Tsukuba), Shoji Makino (University of Tsukuba), Takeshi Yamada (University of Tsukuba), Mitsuo Matsumoto (University of Tsukuba)

2PM2-3-2 **Improvement of bone-conducted speech restoration using linear prediction and long short-term memory model**

Huy Quoc Nguyen (Japan Advanced Institute of Science and Technology), Masashi Unoki (Japan Advanced Institute of Science and Technology)

2PM2-3-3 **Speech Enhancement Based on Deep Neural Networks Considering Features of Speech Distribution**

Naoki Tominaga (Saitama University), Yosuke Sugiura (Saitama University), Tetsuya Shimamura (Saitama University)

2PM2-3-4 **Monaural Speech Enhancement using Modified VQ-VAE-2 based on Dictionary Learning**

Kentaro Murai (Shizuoka University), Taiho Takeuchi (Shizuoka University), Yosuke Tatekura (Shizuoka University)

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Yoshifumi Nishio, 4 (29AM2-4-1), 6 (29PM1-4-1), 7 (29PM2-2-4), 10 (1AM1-3-4), 12 (1PM1-2-1), 12 (1PM1-2-2), 16 (2AM2-2-2), 17 (2PM1-1-4), 17 (2PM1-1-5)
Yoshifumi Ukita, 5 (29PM1-1-3), 15 (2AM1-3-5)
Yoshihiko Horio, 9 (1AM1-2-1)
Yoshiki Higuchi, 1 (29AM1-1-1)
Yoshiki Sakurayama, 3 (29AM2-2-4)
Yoshiki Sanada, 14 (2AM1-2-3)
Yoshiki Tsukamoto, 13 (1PM1-3-5)
Yoshitaka Itoh, 5 (29PM1-2-1)
Yosuke Komatsubara, 19 (2PM2-1-3)
Yosuke Sugiura, 20 (2PM2-3-3)
Yosuke Tatekura, 8 (29PM2-3-4), 20 (2PM2-3-4)
Yotaro Oki, 14 (2AM1-2-4)
Yuichi Miyata, 4 (29AM2-4-1), 16 (2AM2-2-2)
Yuichi Shirasu, 13 (1PM1-3-6)
Yuichiro Nishimura, 2 (29AM1-2-3), 19 (2PM2-2-1)
Yuji Yamauchi, 16 (2AM2-2-2)
Yuki Hoshino, 6 (29PM1-4-2)
Yuki Kakiuchi, 12 (1PM1-1-1)
Yuki Kaneko, 6 (29PM1-3-4)
Yuki Kawai, 17 (2PM1-1-2), 17 (2PM1-1-3)
Yuki Okami, 4 (29AM2-4-3), 4 (29AM2-4-5)
Yuki Okamoto, 6 (29PM1-3-3)
Yuki Yamada, 9 (1AM1-2-4), 9 (1AM1-2-5), 11 (1AM2-2-5)
Yukimi Asari, 1 (29AM1-1-2)
Yusaku Yamaguchi, 3 (29AM2-2-1), 4 (29AM2-4-2)
Yusuke Hagiwara, 19 (2PM2-2-4)
Yusuke Kida, 19 (2PM2-2-5)
Yusuke Kozawa, 13 (1PM1-3-1), 13 (1PM1-3-2), 13 (1PM1-3-3), 15 (2AM1-3-1), 15 (2AM1-3-2)
Yusuke Nozaki, 16 (2AM2-3-1), 16 (2AM2-3-2), 18 (2PM1-3-2), 18 (2PM1-3-3), 18 (2PM1-3-5)
Yusuke Ogi, 2 (29AM1-2-4), 3 (29AM2-2-4), 19 (2PM2-2-4)
Yusuke Yoshida, 16 (2AM2-2-4)
Yuta Tanifuji, 8 (29PM2-4-2)
Yutaro Arai, 10 (1AM2-1-2)
Yuu Miino, 7 (29PM2-2-1)
Yuuki Hashizume, 9 (1AM1-1-4)
Yuuki Kato, 13 (2AM1-1-1)
Yuusuke Kawakita, 9 (1AM1-1-4)
Yuya Chiba, 8 (29PM2-3-2), 10 (1AM1-3-1)