

Detailed Program of SCIS&ISIS2018 with ISWS2018

*: ISWS paper

December 5, 2018 (Wed.)

15:00-17:30 **Registration** @ Toyama International Conference Center

18:00-20:00 **Welcome Reception** @ ANA Crowne Plaza Toyama

December 6, 2018 (Thu.)

8:50-9:20 **Opening Ceremony**

9:20-10:20 **Plenary Talk 1** (Chair: Prof. Noboru Takagi (Toyama Prefectural University, Japan))

How Information Technology helps Clinical Practice ?

Prof. Yutaka Hata

(Graduate School of Simulation Studies, University of Hyogo, Japan)

10:20-10:40 **Break**

10:40-12:00 **Parallel Sessions**

[Th1-1] OS: Soft Computing in Urban and Transport Planning (1)

Chair: Takamasa Akiyama (Kansai University, Japan)

10:40-11:00 **Project Hermes: Integrated Platform for Traffic Management and Road Safety Assurance**

Th1-1-1 Leelanga Seneviratne, Asara Senaratne, Nimesha Pieris, Sahan Wanigasooriya, Sepalika Hansamali and Sachini Samarawickrama

11:00-11:20 **Development of a Geocoding System for Diverse Road Data**

Th1-1-2 Ryuichi Imai, Hisatoshi Taniguchi, Satoshi Tajima, Hiroyoshi Hashimoto and Koichi Shigetaka

11:20-11:40 **Machine Learning and Monte Carlo Sampling for the Probabilistic Orienteering Problem**

Th1-1-3 Roberto Montemanni, Federico D'Ignazio, Xiaochen Chou and Luca Maria Gambardella

11:40-12:00 **Integrated Model of CGE and CUE Modeling for Evaluation of Urban Transport Projects**

Th1-1-4 Shinichi Muto and Madhu Khanal

[Th2-1] OS: Rough Sets, Granular Computing and Their Applications

Chair: Yasuo Kudo (Muroran Institute of Technology, Japan)

10:40-11:00 **Incremental Updating Methods with Three-way Decision Models in Incomplete Information Systems**

Th2-1-1 Tran Thanh Huyen, Thinh Cao Duc, Koichi Yamada and Do-Van Nguyen

11:00-11:20 **An Attempt of Object Reduction in Rough Set Theory**

- Th2-1-2 Yasuo Kudo and Tetsuya Murai
11:20-11:40 **Four-Valued Semantics for Granular Reasoning towards Frame Problem**
Th2-1-3 Yotaro Nakayama, Seiki Akama and Tetsuya Murai

[Th3-1] GS: Visualization

Chair: Shigekazu Ishihara (Hiroshima International University, Japan)

- 10:40-11:00 **Language Design for Task Management using State Transition Modeling**
Th3-1-1 Yasunari Ishizuka, Tadashi Kurata, Shuang Chang and Hiroshi Deguchi
11:00-11:20 ***Simultaneous Visualization of Documents and Words by using Tensor Self-Organizing Map**
Th3-1-2 Takuro Ishida, Hajime Hatano and Tetsuo Furukawa
11:20-11:40 ***Development of a Grading Visualization System That Converts Manual Force of Toddlers to Color Images**
Th3-1-3 Takashi Yamada and Tomio Watanabe
11:40-12:00 ***Rehabilitation Exercise Aid System with Biomechanical Analysis and AI Image Recognition**
Th3-1-4 Kotaro Matsuura, Shigekazu Ishihara, Akiko Matsuura and Kosuke Morinaga

[Th4-1] OS: Human Symbiotic Systems (1)

Chair: Yoichiro Maeda (Ritsumeikan University, Japan)

- 10:40-11:00 **Comparison of Gesture Inputs for Robot System Using Mixed Reality to Encourage Driving Review**
Th4-1-1 Yuya Aikawa, Masayoshi Kanoh, Felix Jimenez, Mitsuhiro Hayase, Takahiro Tanaka and Hitoshi Kanamori
11:00-11:20 **Efficient User-Searching of A Hearing-Dog Robot in consideration of user's Life Rhythm**
Th4-1-2 Shotaro Furuta, Tsuyoshi Nakamura, Yuji Iwahori, Shinji Fukui, Masayoshi Kanoh and Koji Yamada
11:20-11:40 ***Development of Intelligent Room for a Presentation Robot Interacting with Participants**
Th4-1-3 Hiroki Kanamori, Hiroyuki Masuta, Kei Sawai, Tatsuo Motoyoshi, Takumi Tamamoto, Ken'Ichi Koyanagi and Toru Oshima
11:40-12:00 **Development of Spatiotemporal Information System Using Mixed Reality**
Th4-1-4 Ryuhei Makino and Kayoko Yamamoto

[Th5-1] OS: Intelligent Machine Learning Algorithm (1)

Chair: Young Im Cho (Gachon University, Korea)

- 10:40-11:00 **Convolutional Autoencoder based Feature Extraction in Radar Data Analysis**
Th5-1-1 Hansoo Lee, Jonggeun Kim and Sungshin Kim
11:00-11:20 **Bayesian Optimization of Customer Churn Predictive Model**
Th5-1-2 Kyungtae Kim and Jee-Hyong Lee
11:20-11:40 **Game State Prediction with Ensemble of Machine Learning Techniques**
Th5-1-3 Sangmyeong Woh and Jeehyong Lee
11:40-12:00 **Extracting Topic Related Keywords by Backtracking CNN based Text Classifier**
Th5-1-4 Jonghun Cha and Jee-Hyong Lee

[Th6-1] OS: Bio-inspired Optimization, Optimization Including Human Factors, and Artificial Life (1)

Chair: Kei Ohnishi (Kyushu Institute of Technology, Japan)

10:40-11:00 **A Study on Stepwise Satisfaction Method of Constraints using Dividing Constraints**

Th6-1-1 Kento Niwa and Tomohiro Yoshikawa

11:00-11:20 **Acquiring Multiple Satisfied Solutions in a Unified Objective Optimization Problem**

Th6-1-2 Koki Maruyama and Tomohiro Yoshikawa

11:20-11:40 **A Study on Multimodal Genetic Programming Introducing Program Simplification**

Th6-1-3 Kei Murano, Shubu Yoshida, Tomohiro Harada and Ruck Thawonmas

[Th7-1] GS: Data Mining (1)

Chair: Ryotaro Kamimura (Tokai University, Japan)

10:40-11:00 **Local Selective Learning for Interpreting Multi-Layered Neural Networks**

Th7-1-1 Ryotaro Kamimura, Ryoza Kitajima and Hiroyuki Sakai

11:00-11:20 **Correlation-Constrained Mutual Information Maximization for Interpretable Multi-Layered Neural Networks**

Th7-1-2 Ryotaro Kamimura and Haruhiko Takeuchi

11:20-11:40 ***Similar Code Fragment Recommendation Using Word2Vec**

Th7-1-3 Takeru Uchiyama and Ayahiko Niimi

11:40-12:00 ***Detection of Causes of Anomalies with Forecast Error Variance Decomposition for a Die-casting Facility**

Th7-1-4 Takeru Moriyama, Shunji Maeda and Tadashi Suzuki

12:00-13:00 **Lunch Break**

13:00-14:20 **Parallel Sessions**

[Th1-2] OS: Soft Computing in Urban and Transport Planning (2)

Chair: Hiroaki Inokuchi (Kansai University, Japan)

13:00-13:20 **Generation of Car OD Using Mobile Spatial Dynamics for Understanding Road Traffic Flow Using Car Probe Data**

Th1-2-1 Ryuichi Imai and Toshikazu Matsushima

13:20-13:40 **Study on Trip Purpose Estimation Method Using Operational Data of Mobile Network**

Th1-2-2 Ryuichi Imai, Daizo Ikeda and Hiroyasu Shingai

13:40-14:00 **Identity Construction Process with Intelligent Information Processing**

Th1-2-3 Takamasa Akiyama and Hiroaki Inokuchi

14:00-14:20 **The Process Design of Wellness City Development with Multi-Agent Simulator**

Th1-2-4 Bin Jiang, Yoshiyuki Yasuda, Hiroaki Inokuchi and Takamasa Akiyama

[Th2-2] OS: Classification and Pattern Recognition using Machine Learning (1)

Chair: Le Thanh Ha (Vietnam National University, Vietnam)

13:00-13:20 **Prediction of the Visual Similarity Between Photos using Several Pre-Trained CNNs**

Th2-2-1 Hiroshi Omori, Kazunori Hanyu, Nasako Yamashita and Satoshi Shimada

- 13:20-13:40 **Real-time Image Semantic Segmentation Networks with Residual Depth-wise Separable Blocks**
 Th2-2-2 Van-Viet Doan, Duy-Hung Nguyen, Quoc-Long Tran, Do-Van Nguyen and Thanh-Ha Le
- 13:40-14:00 **Leaf Instance Segmentation and Counting based on Deep Object Detection and Segmentation Networks**
 Th2-2-3 Lele Xu, Ye Li, Yuanyuan Sun, Lei Song and Shan Jin
- 14:00-14:20 **Authentication System Using 3D Face With Algorithm DLT and Neural Network**
 Th2-2-4 Leonardus Alexander Nickvaldo, Adhi Kusnadi, Wella, Ivransa Zuhdi Pane and Rangga Winantyo

[Th3-2] OS: Computing in Biomedical Engineering (1)

Chair: Do-Won Kim (Chonnam National University, South Korea)

- 13:00-13:20 **Auscultating Diagnosis Support System by Using Self-organizing Map - Analysis of Long-term Recording Medical Body Sounds -**
 Th3-2-1 Yutaka Suzuki, Osamu Sakata, Mizuya Fukasawa, Shun Maruyama and Masayuki Morisawa
- 13:20-13:40 **Study on Estimation of MMSE Score by Using the Latency of P300 and Alpha Wave**
 Th3-2-2 Koki Miwa, Tomohiro Yoshikawa, Takeshi Furuhashi, Minoru Hoshiyama, Taeko Makino, Madoka Yanagawa, Yusuke Suzuki, Hiroyuki Umegaki and Masafumi Kuzuya
- 13:40-14:00 **Effective Risk Assessment of Type 2 Diabetes Using Diagnostic Information Retrieval**
 Th3-2-3 Chu-Yu Chin, Sun-Yuan Hsieh and Vincent S. Tseng
- 14:00-14:20 **Classification of different cognitive load using electroencephalogram(EEG): Preliminary Study**
 Th3-2-4 Joo-Hee Kwon, Euijin Kim, Chang-Hwan Im and Do-Won Kim

[Th4-2] OS: Human Symbiotic Systems (2)

Chair: Felix Jimenez (Aichi Prefectural University, Japan)

- 13:00-13:20 **Human-Robot Interaction Using Markovian Emotional Model Based on Facial Recognition**
 Th4-2-1 Yoichiro Maeda and Shotaro Geshi
- 13:20-13:40 **Visualized Onomatopoeia Thesaurus Maps based on Deep Autoencoder**
 Th4-2-2 Daiki Urata, Shusuke Ishino, Tsuyoshi Nakamura, Masayoshi Kanoh and Koji Yamada
- 13:40-14:00 **An Investigation of Phonological Features and Acoustic Features to Auto-classify Japanese Onomatopoeias into Semantic Usage Category**
 Th4-2-3 Natsumi Takeuchi, Moeka Goriki, Daiki Urata, Tsuyoshi Nakamura, Masayoshi Kanoh and Koji Yamada
- 14:00-14:20 **Support System for City Walking to Take Account of Users'Contexts**
 Th4-2-4 Kana Naitou and Kayoko Yamamoto

[Th5-2] OS: Intelligent Machine Learning Algorithm (2)

Chair: Young Im Cho (Gachon University, Korea)

- 13:00-13:20 **Adaptive Activation Functions for Skin Lesion Classification Using Deep Neural Networks**
 Th5-2-1 Abdulaziz Namozov, Dilshod Ergashev and Young Im Cho
- 13:20-13:40 **Color Decision System based on Deep Learning and Fuzzy Inference System**
 Th5-2-2 Eun Kyeong Kim and Sungshin Kim
- 13:40-14:00 **DHCNN for Visibility Estimation in Foggy Weather Conditions**
 Th5-2-3 Akmaljon Palvanov

14:00-14:20 **Autonomous Machine Learning Modeling using a Task Ontology**
Th5-2-4 Kyoung-Soon Hwang, Keon Myung Lee, Ki Sun Park, Sang Hyun Lee and Kwang Il Kim

[Th6-2] OS: Bio-inspired Optimization, Optimization Including Human Factors, and Artificial Life (2) + GS: Bio-Inspire Model (1)

Chair: Tomohiro Yoshikawa (Nagoya University, Japan)

13:00-13:20 **Unsupervised Music Segmentation with the Genetic Algorithm**

Th6-2-1 Hironori Yamamoto and Naoki Mori

13:20-13:40 **Designing Fitness Functions for Evolutionary Optimization of the System Inspired by Pattern Formation in Morphogenesis**

Th6-2-2 Kei Ohnishi

13:40-14:00 **A Study on a Parallelization of Parameter-less Population Pyramid**

Th6-2-3 Taku Hasegawa and Tomoharu Nakashima

14:00-14:20 **A Study on a Cortical Learning Algorithm Dynamically Adjusting Columns and Cells**

Th6-2-4 Sotetsu Suzugamine, Takeru Aoki, Keiki Takadama and Hiroyuki Sato

[Th7-2] OS: Soft Computing Techniques for Computer Vision (1)

Chair: Yoshimichi Ito (Osaka Electro-Communication University, Japan)

13:00-13:20 **Fast Training and Real-Time Classification Algorithm based on Principal Component Analysis and F-Transform**

Th7-2-1 Petr Hurtik and Irina Perfilieva

13:20-13:40 **Evaluation of F-Transform Based Measures of Image Sharpness**

Th7-2-2 Marek Vajgl and Irina Perfilieva

13:40-14:00 **Parametrized 2D/3D Garment Model For Dexterous Robotic Manipulation**

Th7-2-3 Yew Cheong Hou, Khairul Salleh Mohamed Sahari and Dickson Neoh Tze How

14:00-14:20 ***Selection Strategies for Fuzzy LMedS Algorithm Based on Reinforcement Learning**

Th7-2-4 Toshihiko Watanabe

14:20-14:40 **Break**

14:40-16:00 **Parallel Sessions**

[Th1-3] OS: Soft Computing in Urban and Transport Planning (3) + GS: Intelligent Transportation Systems (1)

Chair: Takamasa Akiyama (Kansai University, Japan)

14:40-15:00 **Social Simulation of Promoting Electric Vehicles for Evaluation of Policies in Local City**

Th1-3-1 Masashi Okushima

15:00-15:20 **Multi-Objective Model Predictive Control**

Th1-3-2 Yeboon Yun, Hirotaka Nakayama and Min Yoon

15:20-15:40 ***Safety Bubble: Quantization of Motor Traffic Safety**

Th1-3-3 Subuddhi Senaratne and Leelanga Seneviratne

15:40-16:00 **A Traffic Jam Prediction Model for Dynamic Routes Using Global Positioning Systems Data from Vehicles at Different Times of the Day**

Th1-3-4 Koushik Roy, Abdullah Al Imam, Nur Islam and Adnan Firoze

[Th2-3] OS: Classification and Pattern Recognition using Machine Learning (2)

Chair: Izumi Suzuki (Nagaoka University of Technology, Japan)

14:40-15:00 **Scene Recognition Method by Bag of Objects Based on Object Detector**

Th2-3-1 Shuichi Masuda, Yuki Kaeri, Yusuke Manabe and Kenji Sugawara

15:00-15:20 ***Unsupervised Learning for Generic Object Recognition by Searching Inner-classes**

Th2-3-2 Izumi Suzuki, Koich Yamada and Muneyuki Unehara

15:20-15:40 **XCS for Missing Attributes in Data**

Th2-3-3 Takato Tatsumi and Keiki Takadama

15:40-16:00 **Hierarchical Scheme for Assigning Components in Multinomial Naive Bayes Text Classifier**

Th2-3-4 Nghia Nguyen, Koichi Yamada, Izumi Suzuki and Muneyuki Unehara

[Th3-3] OS: Computing in Biomedical Engineering (2)

Chair: Hangsik Shin (Chonnam National University, South Korea)

14:40-15:00 **3D Region Merging for Segmentation of Teeth on Cone-Beam Computed Tomography Images**

Th3-3-1 Rarasmaya Indraswari, Takio Kurita, Agus Zainal Arifin, Nanik Suciati, Eha Renwi Astuti and Dini Adni Navastara

15:00-15:20 **Simulation Study of Side-By-Side Phoswich PET Detector Configuration for Providing High Spatial Resolution of <0.4 mm**

Th3-3-2 Soo Kyeong Han, Jingyu Yang, Sungsoo Hong and Jihoon Kang

15:20-15:40 **Photoplethysmographic Pulse Quality Assessment Methods based on Similarity Analysis**

Th3-3-3 Hyeon Seok Seok, Sangjin Han, Junyeong Park, Donggeun Roh and Hangsik Shin

15:40-16:00 **Simplification of 3-Compartment Model by using Perturbation Method**

Th3-3-4 Tetsuro Tatsuoka, Tomohiro Yoshikawa and Takeshi Furuhashi

[Th4-3] GS: Intelligent Systems

Chair: Koichi Yamada (Nagaoka University of Technology, Japan)

14:40-15:00 **Real-Time Performance Analysis of Industrial Serial Production Systems with Flexible Manufacturing**

Th4-3-1 Yan Zhang, Zhiyang Jia and Yaping Dai

15:00-15:20 **Factor Analysis of Locomotive Syndrome through Principal Component Analysis and Construction of Diagnostic Model**

Th4-3-2 Misaki Suyama and Daisuke Kushida

15:20-15:40 **Pseudo-polynomial Time Algorithms for Producing Cardinality Constrained Packages by Multi-head Weighers**

Th4-3-3 Yoshiyuki Karuno and Oki Nakahama

15:40-16:00 **Aggregation of Epistemic Uncertainty: A New Interpretation of the Certainty Factor with Possibility Theory and Causation Events**

Th4-3-4 Koichi Yamada

[Th5-3] GS: Complex Systems, Distributed Systems

Chair: Koichi Tanizaki (Tokyo Institute of Technology, Japan)

14:40-15:00 **Propose a Method of Requirements Review considering Adverse Conditions**

Th5-3-1 Koichi Tanizaki, Shuang Chang and Hiroshi Deguchi

15:00-15:20 **Research on Control Method of Temperature Distribution of Rotor Sidewall of Rotating Machinery**

Th5-3-2 Lin Wang, Changsong Ma, Rui Sun, Fan Li and Sidan Dai

15:20-15:40 **Large Scale Image Dataset Construction Using Distributed Crawling with Hadoop YARN**

Th5-3-3 Asmat Ali, Rahman Ali, Asad Masood Khatak and Muhammad Saqlain Aslam

15:40-16:00 **Research and Development of Communication Interface based on OPC Technology**

Th5-3-4 Fan Li, Changsong Ma, Lin Wang and Sidan Dai

[Th6-3] OS: Intelligence Infrastructure for Data Mining + GS: Data Mining (2)

Chair: Takeshi Matsui (Gunma University, Japan)

14:40-15:00 **Multivariate Analysis of Text Data from Image Information Acquired by Wearable Device**

Th6-3-1 Eri Domoto, Junko Shibata, Mizuki Fukushima and Koji Okuhara

15:00-15:20 **Proposal of the Method to Evaluate the Location of Nursing Facilities Using Median Share Ratio**

Th6-3-2 Koya Tsukahara and Kayoko Yamamoto

15:20-15:40 **Influence of Collaborative Behavior of Agents based on the Hogg-Huberman Model in Social System**

Th6-3-3 Junko Shibata, Koji Okuhara, Shintaro Mohri and Shogo Shiode

15:40-16:00 **Construction of an input-output table considering business-to-consumer transactions by using private data**

Th6-3-4 Takaya Ohsato, Kaya Akagi and Hiroshi Deguchi

[Th7-3] OS: Soft Computing Techniques for Computer Vision (2)

Chair: Yoshimichi Ito (Osaka Electro-Communication University, Japan)

14:40-15:00 **Color based Person Tracking with Illumination Compensation by using Multiple Statistics of Scene**

Th7-3-1 Motonori Doi, Akihiro Tsujimoto, Akira Kimachi, Shogo Nishi and Norikazu Ikoma

15:00-15:20 **Linear Predictive Model for Discriminative Feature Representation of Object Classification**

Th7-3-2 Ekachai Phaisangittisagul

15:20-15:40 **Automatic Labeling of Sensor Data Based on Object Tracking and Recognition**

Th7-3-3 Tatsuya Hanyu and Qiangfu Zhao

15:40-16:00 ***Traffic Sign Detection for Panoramic Images using Convolution Neural Network Technique**

Th7-3-4 Sathit Prasomphan

16:00-16:20 **Break**

16:20-18:20 **Parallel Sessions**

[Th1-4] GS: Bio-Inspire Model (2), Evolutionary Computing

Chair: Hiroshi Takenouchi (Fukuoka Institute of Technology, Japan)

- 16:20-16:40 **Optimization of Fuzzy Rules in Kansei Retrieval Agent with Fuzzy Reasoning**
Th1-4-1 Ryota Shiraishi, Hiroshi Takenouchi and Masataka Tokumaru
- 16:40-17:00 **Effect-Selection Tool using Visual Saliency Maps and its Evaluations**
Th1-4-2 Natsumi Suzuki and Yohei Nakada
- 17:00-17:20 **Improvement of Visualization Method for Attack Patterns in Team Sports**
Th1-4-3 Risa Yamamoto and Yohei Nakada
- 17:20-17:40 **A New Binomial Crossover Considering Correlation Among Decision Variables for Adaptive Differential Evolution**
Th1-4-4 Tetsuyuki Takahama and Setsuko Sakai Takahama
- 17:40-18:00 **Edge Assembly Crossover using Multiple Parents for Traveling Salesman Problem**
Th1-4-5 Maaki Sakai, Yoshiko Hanada and Yukiko Orito
- 18:00-18:20 **Effects of Duplication Operator in Evolutionary Simultaneous Design Optimization of Multiple Cars**
Th1-4-6 Minami Miyakawa, Hiroyuki Sato, Haruka Matsumoto, Mariko Tanaka, Mikiko Sato and Yuji Sato

[Th2-4] S-OS: A Tribute to Professor Lotfi A. Zadeh: From Perfection to Perception Based Modeling - A Grand Paradigm Shift

Chair: Ashok Deshpande (Berkeley Initiative in Soft Computing (BISC) -Special Interest Group (SIG), United States)

- 16:20-16:40 ***Maximum Flow Problems under Uncertainty**
Th2-4-1 Manjot Kaur, Gyan Chhipi-Shrestha, Kasun Hewage and Rehan Sadiq
- 16:40-17:00 ***Stratification and Fuzzy Inference System for Measuring Project Benefits**
Th2-4-2 A Ghildyal, D Ru, E Chang, A Deshpande and M Saberi
- 17:00-17:20 ***Can Fuzzy Logic Assist General Physicians in Urological Disease Diagnosis?**
Th2-4-3 Sunil Kumar Singh, Navin Ram Daruka and Ashok Deshpande
- 17:20-17:40 ***Building Domain-Specific Sentiment Lexicon using Label Propagation on Common-sense Semantic Network**
Th2-4-4 Minni Jain, Amita Jain and Rajni Jindal
- 17:40-18:00 ***An Act and Omission Contributor-based Fire Probabilistic Analysis for Residential Buildings**
Th2-4-5 Rachid Ouache, Guangji Hu, Kasun Hewage and Rehan Sadiq

[Th3-4] OS: IT Convergence Applications

Chair: Jung-Sook Kim (Kimpo University, Korea)

- 16:20-16:40 **An Extraction Algorithm for Deep Characterization Using DeepCNN in Diagnostic Ultrasound Images**
Th3-4-1 Youngbok Cho and Sunghee Woo
- 16:40-17:00 **Development of Human-Machine Interface System for Flight Monitoring Using ADS-B Data and Openmap**
Th3-4-2 Ni Made Satvika Iswari and I Made Astawa
- 17:00-17:20 **P Coin: High Speed Cryptocurrency based on Random-Checkers Proof of Stake**
Th3-4-3 Thawatchai Chomsiri and Kan Kongsup

- 17:20-17:40 **Integrating the Dynamic Password Authentication with Possession Factor and CAPTCHA**
 Th3-4-4 Detchasit Pansa and Thawatchai Chomsiri
- 17:40-18:00 **IoT-Based Smart Mat System for Remote Monitoring System of User**
 Th3-4-5 Jung-Sook Kim
- 18:00-18:20 **Design of the Smart Query-Response Interface of Remote Emergency Medical Image Reading System in Mobile Environment**
 Th3-4-6 Jung-Sook Kim and Taesub Chung

[Th4-4] OS: Affective Engineering and its Interactive Approach

Chair: Muneyuki Unehara (Nagaoka University of Technology, Japan)

- 16:20-16:40 **Utilizing Gamification to Improve User Participation in Online Judge**
 Th4-4-1 Cynthia Sinly, Andre Rusli and P. M. Winarno
- 16:40-17:00 **Snack Food Texture Estimation by Neural Network**
 Th4-4-2 Shigeru Kato, Ryuji Ito, Naoki Wada, Tomomichi Kagawa and Masayoshi Yamamoto
- 17:00-17:20 **Estimation of Human Movement State by Smartphone Sensor Information without GPS**
 Th4-4-3 Shino Iwashita, Yuuki Shimanuki and Atsushi Hayashi
- 17:20-17:40 **Creation of Ideal User's Voice Using User's own UTAU Voice and Interactive Genetic Algorithm**
 Th4-4-4 Asami Inoue, Kota Nomura and Makoto Fukumoto
- 17:40-18:00 ***Multi-Objective Decision Support by Individual Affective Preferences Identification**
 Th4-4-5 Muneyuki Unehara, Shin'Ya Yamazaki, Koichi Yamada and Izumi Suzuki
- 18:00-18:20 ***Selection of Impression Word for Generating Rhythm Pattern of Drum Set**
 Th4-4-6 Mio Suzuki and Yuki Shimazu

[Th5-4] GS: Fuzzy Control, Fuzzy Sets and Logic, Fuzzy Systems

Chair: Tomoharu Nakashima (Osaka Prefecture University, Japan)

- 16:20-16:40 **Adaptive Fractional High Order Sliding Mode Fuzzy Control of Active Power Filter**
 Th5-4-1 Siyang Li and Juntao Fei
- 16:40-17:00 **On α -Migrativity of Fuzzy Implications and the Generalised Laws of Importation**
 Th5-4-2 Michal Baczynski, Balasubramaniam Jayaram and Radko Mesiar
- 17:00-17:20 **Some Closure Properties of Fuzzy Multiset Regular Languages**
 Th5-4-3 Pavel Martinek
- 17:20-17:40 **An Adaptive Controller with Dynamic Gain Adjustment for Wheeled Mobile Robot**
 Th5-4-4 Bing-Gang Jhong and Mei-Yung Chen
- 17:40-18:00 **A Note on Brake System of Train Set with Wheel Slide Protection System**
 Th5-4-5 Yuya Kanazawa, Yasunori Endo, Shin-Ichi Nakazawa and Daisuke Hijikata
- 18:00-18:20 ***Soft Confidence-Weighted Learning for Fuzzy Classifiers and its Application to Dynamic Classification Problems**
 Th5-4-6 Tomoharu Nakashima

[Th6-4] GS: Machine Learning (1)

Chair: Fusaomi Nagata (Sanyo-Onoda City University, Japan)

- 16:20-16:40 **An Extreme Learning Machine Based Pretraining Method for Multi-Layer Neural Networks**
Th6-4-1 Pavit Noinongyao and Ukrit Watchareeruetai
- 16:40-17:00 ***Non-parametric Continuous Self-Organizing Map**
Th6-4-2 Ryuji Watanabe, Hideaki Ishibashi, Tohru Iwasaki and Tetsuo Furukawa
- 17:00-17:20 ***Design and Training Application for Deep Convolutional Neural Networks**
Th6-4-3 Fusaomi Nagata, Kenta Tokuno and Keigo Watanabe
- 17:20-17:40 ***A discussion on Improve Response for Successive Input Patterns in SpikeProp**
Th6-4-4 Kengo Onoda, Haruhiko Takase, Hidehiko Kita and Hiroharu Kawanaka
- 17:40-18:00 **Consistency Assessment between Diploma Policy and Curriculum Policy using Character-level CNN**
Th6-4-5 Kazuteru Miyazaki and Msaaki Ida
- 18:00-18:20 ***Solar Irradiance Forecasting with Convolutional Long Short-Term Memory Network using Sky Images**
Th6-4-6 Tomohiro Nagatani, Koki Nishimura, Takeru Moriyama and Shunji Maeda

[Th7-4] OS: Recent Trends of Clustering Methodologies (1) + GS: Decision Making and Risk Management (1)

Chair: Katsuhiko Honda (Osaka Prefecture University, Japan)

- 16:20-16:40 **On Fuzzy Clustering for Incomplete Spherical Data and for Incomplete Multivariate Categorical Data**
Th7-4-1 Yuchi Kanzawa
- 16:40-17:00 **Performance Comparison of Collaborative Filtering Using Fuzzy Clustering for Spherical Data**
Th7-4-2 Tadafumi Kondo and Yuchi Kanzawa
- 17:00-17:20 **A Study on Clustering Unweighted Network Data and Its Evaluation Using Cluster Validity Measure**
Th7-4-3 Daiki Kobayashi and Yukihiro Hamasuna
- 17:20-17:40 **Refining Fuzzy c-Means Membership Functions to Assimilate A Priori Knowledge of Cluster Sizes**
Th7-4-4 Jiarui Li, Yukio Horiguchi and Tetsuo Sawaragi
- 17:40-18:00 **Automatic Estimation of Cluster Number in Fuzzy Co-clustering Based on Competition and Elimination of Clusters**
Th7-4-5 Seiki Ubukata, Kazuki Yanagisawa, Akira Notsu and Katsuhiko Honda
- 18:00-18:20 **A Fuzzy Approach to Weight Vector from a Group of Pairwise Comparison Matrices Based on Inclusion Relation**
Th7-4-6 Tomoe Entani

December 7, 2018 (Fri.)

9:00-10:00 **Plenary Talk 2** (Chair: Prof. Yusuke Nojima (Osaka Prefecture University, Japan))
The Role of Monotonicity in Data Science
Prof. Bernard De Baets
(KERMIT, Ghent University, Belgium)

10:00-10:20 **Break**

10:20-12:00 **Parallel Sessions**

[Fr1-1] OS: Human Centric Industrial and Consumer Applications

Chair: Hiroshi Nakajima (Omron Corporation, Japan) and Yasuyo Kotake (Omron Corporation, Japan)

10:20-10:40 **A Study on Visual Driving Simulator for Analyzing Perception Characteristics of a Driver**

Fr1-1-1 Hiroshi Takahashi and Makoto Itoh

10:40-11:00 **Sentence Generation System Using Affective Image**

Fr1-1-2 Masato Konno, Kohei Suzuki and Maki Sakamoto

11:00-11:20 **Design Analysis of Boiler Header Inspection Robot MK-02**

Fr1-1-3 Muhammad Fairuz Abdul Jalal, Khairul Salleh Mohamed Sahari and Adzly Anuar

11:20-11:40 **Intelligent Waste Crane Scheduling using Evolutionary Computation**

Fr1-1-4 Kenneth J. Mackin and Makoto Fujiyoshi

11:40-12:00 **Comparison of Gaze Behavior among Japanese Residents, Japanese Visitors, and Non-Japanese Visitors While Walking a Street**

Fr1-1-5 Kohei Nomoto, Takuya Shimosaka and Ryo Sato

[Fr2-1] OS: Classification and Pattern Recognition using Machine Learning (3)

Chair: Nagul Cooharajanone (Chulalongkorn University, Thailand)

10:20-10:40 **Classifying Attitudes of Thai Business Organizations Toward the Perceived Benefit of Customer Predictive Analytics**

Fr2-1-1 Santisook Limpeeticharoenchot, Nagul Cooharajanone, Thira Chavarnakul and Kanokwan Atchariyachanvanich

10:40-11:00 ***Topic Classification Method for Analyzing Effect of eWOM on Consumer Game Sales**

Fr2-1-2 Yoshiki Horii, Hirofumi Nonaka, Elisa Claire Alemán Carreón, Hiroki Horino and Toru Hiraoka

11:00-11:20 ***Classification of Student's In-class Behavior Using a Desktop Pressure Sensor**

Fr2-1-3 Tessai Hayama, Hidetaka Odate and Naoto Ishida

11:20-11:40 ***A Preliminary Study of Michigan-style Fuzzy Genetics-based Machine Learning for Class Incremental Problems**

Fr2-1-4 Yuto Irie, Naoki Masuyama, Yusuke Nojima and Hisao Ishibuchi

[Fr3-1] OS: Intelligent Systems for Robotics and Vehicles

Chair: Young-Jae Ryoo (Mokpo National University, Korea)

10:20-10:40 **Obstacle Avoidance System with LiDAR Sensor Based Fuzzy Control for an Autonomous Unmanned Ship**

Fr3-1-1 Hyunwoo Song, Kwangkuk Lee and Dong Hun Kim

10:40-11:00 **Integrated Safety and Cybersecurity Risk Analysis of Cooperative Intelligent Transport Systems**

Fr3-1-2 Giedre Sabaliauskaite, Jin Cui, Lin Shen Liew and Fengjun Zhou

11:00-11:20 **Examination of How to Estimate the Viewing Angle at Intersections**

Fr3-1-3 Shinichiro Goto, Yuki Murata and Masayasu Atsumi

11:20-11:40 **Logical Scenarios and Coverage Analyses Enhanced by a Representative Trajectory Model to Reduce Test Cases to Limited Combinations**

Fr3-1-4 Hiroaki Wagatsuma

11:40-12:00 ***Design of Differential Speed Control Based Automated Guided Vehicle Using Magnetic Positioning System**

Fr3-1-5 Kinam Lee, Young-Jae Ryoo, Dae-Yeong Im

[Fr4-1] OS: Soft Computing on an Embedded System + GS: Education and Training

Chair: Yukinobu Hoshino (Kochi University of Technology, Japan)

10:20-10:40 **An Audio and Haptic Feedback-based Virtual Environment Spatial Navigation Learning Tool**

Fr4-1-1 Carmen Chai and Bee Theng Lau

10:40-11:00 **Development of a Prevention System for Beast Damage of Agricultural Products Using Deep Learning**

Fr4-1-2 Ryoki Kamesaka and Yukinobu Hoshino

11:00-11:20 **Position Estimation Using Stereo Camera Images and Physics Engine Simulation for Robot Control**

Fr4-1-3 Ohnishi Ringo and Hoshino Yukinobu

11:20-11:40 **A Development of a Line-Trace Car with Fuzzy Control of Motor Signals and Performance Evaluation**

Fr4-1-4 Yuka Nishiyama, Yuki Shinomiya, Toshimi Yamamoto and Yukinobu Hoshino

11:40-12:00 **Building Entrepreneurship Spirit for University Student through Entrepreneurs Training Program**

Fr4-1-5 Rangga Winantyo, Adhi Kusnadi and Wella

[Fr5-1] OS: Sensing and Bio-Application

Chair: Suk-seung Hwang (Chosun University, Korea)

10:20-10:40 ***Theoretical Approaches toward New Hosts for Anions: Collaboration with Experimental Researchers**

Fr5-1-1 Seung Joo Cho

10:40-11:00 **Data Analysis of Multivariate Time Series of Insect Tracking**

Fr5-1-2 Pavel Rusnok, Petr Hurtik, Oto Kaláb, David Musiolek, Petr Kočárek and Martin Tomis

- 11:00-11:20 ***Development of Multi-Color Fluorescent pNIPAM-Based Nanogels Modulated by Thermo-Responsive FRET Processes**
Fr5-1-3 Eunae Kim and Ho-Joong Kim
- 11:20-11:40 **Performance Evaluation of Satellite Beamforming System with Square Array Antenna**
Fr5-1-4 Ji-Youn Mun, Tae-Yun Kim, Young-Chul Bae and Suk-Seung Hwang
- 11:40-12:00 **Trends and Future of Brain-Computer Interfaces**
Fr5-1-5 Hong Gi Yeom

[Fr6-1] GS: Kansei Engineering, Artificial Intelligence

Chair: Yasuo Kudo (Muroran Institute of Technology, Japan)

- 10:20-10:40 **Investigations of Interests that are Induced by Remarkers and their Remarks for Item Advertisements Based on Influencer's Recommendation**
Fr6-1-1 Komei Arasawa, Shun Hattori and Yasuo Kudo
- 10:40-11:00 **Tensor Self-Organizing Map for Kansei Analysis**
Fr6-1-2 Kyouhei Itonaga, Kaori Yoshida and Tetsuo Furukawa
- 11:00-11:20 **Low-Latency Convolutional Recurrent Neural Network for Keyword Spotting**
Fr6-1-3 Hu Du, Donggyun Kim, Kaoru Hirota, Yaping Dai and Ruohan Li
- 11:20-11:40 **Recurrent Attention LSTM Model for Image Chinese Caption Generation**
Fr6-1-4 Chaoying Zhang, Yaping Dai, Yanyan Cheng, Zhiyang Jia and Kaoru Hirota
- 11:40-12:00 ***Rule-Based Role Analysis of Game Characters Using Tags about Characteristics for Strategy Estimation by Game AI**
Fr6-1-5 Ryohei Watanabe, Komei Arasawa and Shun Hattori

[Fr7-1] OS: Recent Trends of Clustering Methodologies (2)

Chair: Seiki Ubukata (Osaka Prefecture University, Japan)

- 10:20-10:40 **Visualization of Potential Technical Solutions by Self-Organizing Maps and Co-cluster Extraction**
Fr7-1-1 Yasushi Nishida and Katsuhiko Honda
- 10:40-11:00 **A Study on Controlled Node Sized Network Clustering for Unweighted Network Data**
Fr7-1-2 Shusuke Nakano, Yukihiro Hamasuna and Yasunori Endo
- 11:00-11:20 **On Linear Clustering with Constraints on Cluster Size**
Fr7-1-3 Naoya Kimoto and Yasunori Endo
- 11:20-11:40 **Even-sized Clustering with Noise Clustering Method**
Fr7-1-4 Kei Kitajima and Yasunori Endo
- 11:40-12:00 **Partition of Time Series Using Hierarchical Clustering**
Fr7-1-5 Katsutoshi Takahashi, Motohide Umamo and Noriyuki Fujimoto
- 12:00-13:00 **Lunch Break**
- 13:00-14:20 **Parallel Sessions**

[Fr1-2] OS: Intelligent Support System with AI and IoT Technologies (1)

Chair: Hironobu Takano (Toyama Prefectural University, Japan), Hideaki Touyama (Toyama Prefectural University, Japan), Tatsuo Motoyoshi (Toyama Prefectural University, Japan)

13:00-13:20 **Dependable Parallel Multi-swarm DEEPSO with Migration for Voltage and Reactive Power Control in Electric Power Systems**

Fr1-2-1 Yoshida Hotaka and Fukuyama Yoshikazu

13:20-13:40 **Total Optimization of Smart City by Multi-population Global-best Modified Brain Storm Optimization**

Fr1-2-2 Mayuko Sato, Yoshikazu Fukuyama, Tatsuya Iizaka and Tetsuro Matsui

13:40-14:00 **A Non-Task-Oriented Dialogue System Controlling the Utterance Length**

Fr1-2-3 Kazuki Isoshima and Masafumi Hagiwara

14:00-14:20 **Toward the Evaluation of Handwashing Skills based on Image Processing**

Fr1-2-4 Kazushi Yamamoto, Kazuya Miyanaga, Haruka Miyahara, Miho Yoshii, Fumiya Kinoshita, Miyuki Nishitani and Hideaki Touyama

[Fr2-2] OS: Classification and Pattern Recognition using Machine Learning (4)

Chair: Masafumi Hagiwara (Keio University, Japan)

13:00-13:20 **Long Short-Term Memory in Recognizing Behavior Sequences on Humanoid Robot**

Fr2-2-1 Dickson Neoh, Khairul Salleh Mohamed Sahari and Chu-Kiong Loo

13:20-13:40 **Danger Theory or Trained Neural Network – A Comparative Study for Behavioural Detection**

Fr2-2-2 Henry Y. K. Lau and Nicole M. Y. Lee

13:40-14:00 **Student Eye Gaze Tracking during MOOC Teaching**

Fr2-2-3 Fangfang Yang, Zengru Jiang, Chaojun Wang, Yaping Dai, Zhiyang Jia and Kaoru Hirota

[Fr3-2] OS: Application to Managerial Decision Making

Chair: Sangheon Han (NUCB, Japan)

13:00-13:20 **The Impact of Stocks listed on the Tokyo Stock Exchange after the enforcement of Basel II**

Fr3-2-1 Hashimoto Hisashi

13:20-13:40 **The Extended Minimax Disparity RIM Quantifier Problem**

Fr3-2-2 Dug Hun Hong

13:40-14:00 **A Study on the Validity of Sharing Work of Pairwise Comparison Method**

Fr3-2-3 Sangheon Han, Tsutomu Hiroshima and Toru Yarita

14:00-14:20 **Market, Hierarchy, and Community as Organizing Principles in Knowledge-Intensive Work**

Fr3-2-4 Norio Tokumaru

[Fr4-2] OS: Neuroscience & Bioinformatics (1)

Chair: Takahiro Yamanoi (Hokkai-Gakuen Univ., Japan)

13:00-13:20 **Robust Observer-Based Piecewise Multi-Linear Controller Design for Nonlinear Systems**

Fr4-2-1 Tadanari Taniguchi and Michio Sugeno

13:20-13:40 **Relationship between Autonomous and Evoked Activities in a Living Neuronal Network of a Neurorobot, "Vitaenoid"**

Fr4-2-2 Yasuhiro Hukui, Ryuto Hamada and Suguru N. Kudoh

- 13:40-14:00 **A Perfusion System for Autonomous Energy Control of the Living Neuronal Circuit**
Fr4-2-3 Kana Fukui and Suguru N. Kudoh
- 14:00-14:20 **A Living Dialogue Agent Depending on the Internal State of a Cultured Neuronal Network**
Fr4-2-4 Ryu Umebayashi and Suguru N. Kudoh

[Fr5-2] OS: Image Tracking and Load Estimation

Chair: Byung-Jae Choi (Daegu University, Korea)

- 13:00-13:20 **Dynamic Image Analysis Based on Multidimensional Directed Information**
Fr5-2-1 Osamu Sakata and Yutaka Suzuki
- 13:20-13:40 **Tracking of Moving Vehicles with a UAV**
Fr5-2-2 Minhyuck Lee and Seokwon Yeom
- 13:40-14:00 **Tracking of Human Subjects with Infrared Imaging**
Fr5-2-3 Donghyub Lee and Seokwon Yeom
- 14:00-14:20 ***Influence of Defuzzification Methods in Load Balancing of Distributed System Model**
Fr5-2-4 Nishant Chauhan and Byung-Jae Choi

[Fr6-2] OS: Basic and Application of Bio-information

Chair: Toshiya Arakawa (Aichi University of Technology, Japan)

- 13:00-13:20 **Recognizing Guttation Fluid of Arabidopsis Thaliana in Space by Improved FCN**
Fr6-2-1 Yuanyuan Sun, Lele Xu, Ye Li, Lili Guo, Lei Song and Yong Ming Wang
- 13:20-13:40 **A Dataglove Hardware Design and Real-time Sign Gesture Interpretation**
Fr6-2-2 Dickson Neoh, Khairul Salleh Mohamed Sahari and Wan Zul Fahmi Wan Ibrahim
- 13:40-14:00 **Detecting P300 Potentials Using Weighted Ensemble Learning**
Fr6-2-3 Takahiro Takeichi, Tomohiro Yoshikawa and Takeshi Furuhashi

[Fr7-2] GS: Human-Computer Interaction and Interface (1)

Chair: Kazutaka Shimada (Kyushu Institute of Technology, Japan)

- 13:00-13:20 **Verification of Discussion-Stimulating System for Online Creative Meetings using Key Phrases and Mind Maps**
Fr7-2-1 Yipeng He and Tomoko Yonezawa
- 13:20-13:40 **An End-To-End Human-Centered Automation of a Collaborative Analysis Platform**
Fr7-2-2 Suryatapa Roy and Yaoping Hu
- 13:40-14:00 **Construction of a Liar Corpus and Detection of Lying Situations**
Fr7-2-3 Shohei Takabatake, Kazutaka Shimada and Takeshi Saitoh
- 14:00-14:20 **Person Re-identification for Mobile Robot using Online Transfer Learning**
Fr7-2-4 Yuki Murata and Masayasu Atsumi
- 14:20-14:40 **Break**

14:40-15:40 Poster Session & OS: Human factors and ergonomics @ 3F Foyer

Coordinator: Hiromi Ban (Nagaoka University of Technology, Japan)

OS: Human factors and ergonomics

- Po-1 **Effect of Regression-based Trigger Timing Correction on the N170 ERP Waveform using Emotiv EPOC+ with a Limited Number of Triggers**
Yoritaka Akimoto and Gai Takano
- Po-2 **Text Data Mining of the “Tourism English Proficiency Test”**
Hiromi Ban and Takashi Oyabu
- Po-3 **A Study of Students’ Experiences toward the University Self-Developed Social Learning Management System: myCourseVille the Case of Chulalongkorn University, Thailand**
Nagul Cooharajanane, Lakkhana Poomai, Chosita Sairot, Pattamon Bunram and Suporn Pongnumkul
- Po-4 ***A Research on English Learning for Undergraduates using a Portable Game Machine**
Hiromi Ban, Haruhiko Kimura, Takashi Oyabu and Jun Minagawa

Poster Session

- Po-5 **A New Problem Analysis Method in Open Systems Using "Function Chain"**
Akio Shinohara, Hisao Tsujimura and Takashi Izumi
- Po-6 **Direct Policy Search Reinforcement Learning based on Variational Bayesian Inference**
Nobuhiko Yamaguchi, Kazuya Ihara, Osamu Fukuda and Hiroshi Okumura
- Po-7 **Person Identification by Deep Learning using Walking Signals Detected by Ultra-sensitive Electrostatic Induction Technique**
Syota Morinaga and Koichi Kurita
- Po-8 **A Novel Agricultural Skill Learning Support System and its Deployment and Evaluation**
Dai Kusui, Hideo Shimazu, Katsuhiko Suezawa and Atsushi Shinjo
- Po-9 **A Mechanism of Top-down Influence on V1 Responses Generated by Adaptive Behavior in a Perceptual Task**
Ryo Tani, Shiro Yano and Yoshiki Kashimori
- Po-10 **Detection of Alzheimer’s Disease with Shape Analysis of MRI Images**
Hiroki Fuse, Kota Oishi, Norihide Maikusa, Tadanori Fukami and Japanese Alzheimer'S Disease Neuroimaging Initiative
- Po-11 **Classification of Patients with Alzheimer’s Disease and Healthy Subjects from MRI Brain Images Using the Existence Probability of Tissue Types**
Kota Oishi, Hiroki Fuse, Norihide Maikusa, Tadanori Fukami and Japanese Alzheimer'S Disease Neuroimaging Initiative
- Po-12 **Simultaneous Localization and Change Detection for Long-Term Map Learning: A Scalable Scene Retrieval Approach**
Kanji Tanaka
- Po-13 ***A Method to Analyze the Individual Personality Building in Scenes in Novels by using the Natural Deduction of Propositional Logic**
Momoka Fujieda and Hiroaki Wagatsuma
- Po-14 ***Multi-task Learning for Self-Organizing Maps**
Kazushi Higa, Hideaki Ishibashi and Tetsuo Furukawa

- Po-15 ***Visualization of User-item Rating Matrix by Hierarchical Tensor SOM Network**
Kaido Iwamoto, Tohru Iwasaki and Tetsuo Furukawa
- Po-16 ***Using Hatchery-Release Data of Eastern Hokkaido to Predict Returns of Chum Salmon**
Yosuke Maehara, Hiroyuki Shioya, Kiyoshi Kasugai, Makoto Fujiwara and Yasuyuki Miyakoshi
- Po-17 ***A Conversion Interface that Brings out Memories in the Elderly User "IH Sole Konrojaken (Gas Stove-like Operations for Your Induction Cooker)"**
Yohei Furugen, Keiko Ishihara, Tomoya Terada, Koichi Motoori and Munetaka Takara
- Po-18 ***Classification of Marine Harmful Organisms Using Convolution Neural Networks**
Wangsu Jeon and Sangyong Rhee
- Po-19 ***Feature Extraction using Autoencoder for ECG Data**
Byeongjun Cho, Daejong Lee and Myunggeun Chun
- Po-20 ***The Cultivation of College Students' Innovative Entrepreneurial Ability with the Support of Science and Technology**
Yuan Gao
- Po-21 ***An fMRI Study of Effects of Background Colors on Human Emotions**
Junwei Fan, Akira Sato, Hiroaki Shigemasu and Hideaki Touyama
- Po-22 ***An Experimental Study of Selective Attention to Auditory Odd-Ball Paradigm Under Meaningful or Meaningless Noise**
Takahiro Tamesue
- Po-23 ***Toward Multiple Generative Adversarial Networks for Data Imbalance Problems**
Dae-Ki Kang
- Po-24 **A Machine Learning Approach to Prediction of Passenger Injuries on Real Road Situation**
Yongbeom Lee, Eungi Cho, Mingyu Park, Hyeonseok Kim and Seongkeun Park

15:40-16:00 **Break**

16:00-18:00 **Parallel Sessions**

[Fr1-3] OS: Intelligent Support System with AI and IoT Technologies (2)

Chair: Hironobu Takano (Toyama Prefectural University, Japan), Hideaki Touyama (Toyama Prefectural University, Japan), Tatsuo Motoyoshi (Toyama Prefectural University, Japan)

16:00-16:20 ***Analysis on the Framework and Security Issues for Connected Vehicle Cloud**

Fr1-3-1 Dong Lin, Akira Rinoshika and Tang Zhixian

16:20-16:40 ***Application-Independent Ontology Design Shared in Human-Assist Systems for Automated Driving, Agricultural Plant Automation and Nursing-Care Managements**

Fr1-3-2 Hiroaki Wagatsuma, Jisha Maniamma, Ryutaro Ichise, Hakaru Tamukoh, Keiju Anada and Masahiko Watanabe

16:40-17:00 ***Development of Audio Tactile Graphics System Using iPhone and Efficacy Evaluation**

Fr1-3-3 Yuta Hashimoto and Noboru Takagi

17:00-17:20 ***Personal Authentication by Eye Blink Using Time-series Directional Features**

Fr1-3-4 Keisuke Takano, Azusa Takano and Hironobu Takano

17:20-17:40 ***Evaluation of Eye Movement Authentication for Difference of Moving Range of Gaze**

Fr1-3-5 Shion Tagawa and Hironubu Takano

[Fr2-3] OS: Robot Integration System for Symbiosis with human (1) + GS: Robotics (1)

Chair: Hiroyuki Masuta (Toyama Prefectural University, Japan)

16:00-16:20 **An iBeacon Indoor Positioning System based on Multi-sensor Fusion**

Fr2-3-1 Shuai Shao, Nan Shuo and Kubota Naoyuki

16:20-16:40 **A Method to Obtain Seasonal Information for Smooth Communication between Human and Chat Robot**

Fr2-3-2 Shodai Aoyagi, Kazuki Hirata, Eri Sato-Shimokawara and Toru Yamaguchi

16:40-17:00 **Rehabilitation Support System for Attentional Deficits based on Trail-Making Test**

Fr2-3-3 Ryuta Tonomura, Tadamitsu Matsuda, Atsushi Manji, Naoyuki Kubota and Takenori Obo

17:00-17:20 **Correlation Analysis of Template Generality and Output Evaluation in Dialogue Response Generation**

Fr2-3-4 Yota Osanai, Eri Shimokawara and Toru Yamaguchi

17:20-17:40 **Adaptive Control of a Linear Delta Robot Based on Backstepping Design**

Fr2-3-5 Zhi-Xiang Yang, Jing-Quan Pen and Mei-Yung Chen

17:40-18:00 **Development of Navigation System in Field Robot for Forest Management**

Fr2-3-6 Ayumu Tominaga, Eiji Hayashi and Abbe Mowshowitz

[Fr3-3] OS: Advanced Biomedical Engineering and Human Assistive Technology (1) + GS: Biometrics

Chair: Kouki Nagamune (University of Fukui, Japan)

16:00-16:20 **Quantum Particle Swarm Optimization for Multilevel Thresholding-Based Image Segmentation on Dental X-Ray Images**

Fr3-3-1 Fahad Parvez Mahdi and Syoji Kobashi

16:20-16:40 **A Filter-Based Method to Calculate Heart Rate from Near Infrared Video**

Fr3-3-2 Rashedur Rahman, Kazutoshi Ukai and Syoji Kobashi

16:40-17:00 **Performance Characteristics of Significance by SOM and its Application to Fundus Image Analysis**

Fr3-3-3 Nobuo Matsuda, Heizo Tokutaka, Hideaki Sato, Fumiaki Tajima and Reiji Kawata

17:00-17:20 ***Finger Movements in Blind Individuals While Touching Tactile Graphics**

Fr3-3-4 Noboru Takagi and Yuichiro Mori

17:20-17:40 **Personal Authentication and Hand Motion Recognition based on Wrist EMG Analysis by a Convolutional Neural Network**

Fr3-3-5 Ryohei Shioji, Shin-Ichi Ito, Momoyo Ito and Minoru Fukumi

17:40-18:00 **Recognition of Aerial Input Numerals by Leap Motion and CNN**

Fr3-3-6 Shun Yamamoto, Minoru Fukumi, Shin-Ichi Ito and Momoyo Ito

[Fr4-3] OS: Neuroscience & Bioinformatics (2)

Chair: Suguru N. Kudoh (Kwansei Gakuin University, Japan)

16:00-16:20 **Tribal Classification Using Probability Density Function (PDF) and Fuzzy Inference System (FIS)**

- Fr4-3-1 Maria Susan Anggreainy, M. Rahmat Widyanto, Belawati H. Widjaja, Nurtami Soedarsono and Kaoru Hirota
- 16:20-16:40 **Transition in Long-term Learning Curves and fMRI Analysis on Tower of Hanoi Task**
- Fr4-3-2 Yuya Sano, Ryosuke Hayasaka, Keita Mitani and Yukinobu Hoshino
- 16:40-17:00 **Study on EEG-based BCI Using Difference of Length and Number of Syllable in Inner Speech**
- Fr4-3-3 Masataka Fujiwara, Kiyotaka Miyasaka and Yuji Sakamoto
- 17:00-17:20 **An Investigation into the Functional Connectivity Based on a Time Production for BCI**
- Fr4-3-4 Ryosuke Hayasaka, Keita Mitani and Yukinobu Hoshino
- 17:20-17:40 **Cloud Recording for Diabetes Regulation of Blood Glucose Concentrations**
- Fr4-3-5 Douglas E. Dow, Marilyn Urrea, Irene Qin and Tung Pham
- 17:40-18:00 ***Human Brain Activities on Angular Gyrus during Recalling 4-Legged Mammal and Fruit Names**
- Fr4-3-6 Koji Sugimoto, Takahiro Yamanoi, Hisashi Toyoshima, Mika Otsuki, Shin-Ichi Ohnishi and Toshimasa Yamazaki

[Fr5-3] GS: Modeling and Simulation, Vision and Sensors

Chair: Kenshi Saho (Toyama Prefectural University, Japan)

- 16:00-16:20 **On-line Identification of Continuous-time Nonlinear Systems Using Gaussian Process Models**
- Fr5-3-1 Koichi Sugiyama and Tomohiro Hachino
- 16:20-16:40 ***Multivariate Time Series Classification using DMD based Similarity Measure**
- Fr5-3-2 Taiki Tanaka and Toshiaki Omori
- 16:40-17:00 **Analysis of Contact Conditions based on Process Parameters in Abrasive Belt Grinding Using Dynamic Pressure Sensor**
- Fr5-3-3 Vigneashwara Pandiyan, Tegoeh Tjahjowidodo, Wahyu Caesarendra, Praveen Gunasekaran, Tomi Wijaya and Bobby K Pappachan
- 17:00-17:20 **Gait Classification of Healthy Young and Elderly Adults Using Micro-Doppler Radar Remote Sensing**
- Fr5-3-4 Hiroaki Okinaka, Kenshi Saho, Masahiro Fujimoto, Seiken Go, Masao Masugi, Kouki Sugano, Kazuki Uemura and Michito Matsumoto
- 17:20-17:40 ***Data Aggregation for Ecohydraulic Monitoring**
- Fr5-3-5 Shinji Fukuda

[Fr6-3] GS: Machine Learning (2), Pattern Recognition

Chair: Miho Ohsaki (Doshisha University, Japan)

- 16:00-16:20 **Gait Recognition using Double-window and CNN Classification on Freestyle Walks**
- Fr6-3-1 Piya Limcharoen, Nirattaya Khamsemanan and Cholwich Nattee
- 16:20-16:40 ***A Method for Detecting Werewolves in the Werewolf Game Based on Messages from and about a Suspected Player**
- Fr6-3-2 Takeshi Okada, Atsushi Ueno and Tomohito Takubo
- 16:40-17:00 **Body Part Diagram Recognition in Medical Records: Application of the Histograms of Oriented Gradients and the Mahalanobis-distance-based Classifier**
- Fr6-3-3 Miho Ohsaki, Hayato Sasaki, Hiroharu Kawanaka and Shigeru Katagiri

17:00-17:20 ***Proposed Electronic Component Visual Inspection Method with a Local Histogram-based Feature**

Fr6-3-4 Koki Nishimura, Masaki Yanabe, Tomohiro Tanaka, Kentaro Ooi, Tomohiro Nagatani, Takeru Moriyama and Shunji Maeda

[Fr7-3] OS: Human Symbolic Systems (3) + GS: Human-Computer Interaction and Interface (2)

Chair: Yasutake Takahashi (University of Fukui, Japan)

16:00-16:20 **Impression Investigation of Educational Support Robots using Sympathy Expression Method by Body Movement and Facial Expression**

Fr7-3-1 Yuhei Tanizaki, Felix Jimenez, Tomohiro Yoshikawa and Takeshi Furuhashi

16:20-16:40 **Effects of Educational Support Robots Based on Cognitive Apprenticeship Theory on Junior High School Students**

Fr7-3-2 Kenya Miyauchi, Felix Jimenez, Tomohiro Yoshikawa, Takeshi Furuhashi and Masayoshi Kanoh

16:40-17:00 **A Basic Study on Generating Back-channel Humor Phrases for Chat Dialogue Systems**

Fr7-3-3 Ryosuke Iwakura, Tomohiro Yoshikawa and Takeshi Furuhashi

17:00-17:20 ***Case Study of HRI for Elderly People - Effects of Awareness of Water Intake in Words and Gestures of Humanoid Robot -**

Fr7-3-4 Yasutake Takahashi, Norie Takaku, Yuki Kayukawa, Yuki Kennai, Junko Yotsuya, Takeru Hirafumi, Yuri Tamai, Natsumi Kakutani and Ayaka Yanagida

17:20-17:40 **Is Startup Business on Coffee Usable with Mobile Application?**

Fr7-3-5 Wella, Adhi Kusnadi, Rangga Winantyo, Reza Bagus Hidayat, Benyamin Pratama and Agung Surya Thidar

17:40-18:00 **Development of the Impression Detection System by using a Portable EEG Device for Tourist Impression Analysis**

Fr7-3-6 Tomoyuki Ohkubo, Kohei Yamamaru and Shigeomi Koshimizu

19:00-21:00 **Banquet & Award Ceremony @ Hotel Grand Terrace Toyama**

December 8, 2018 (Sat.)

9:00-10:00 **Plenary Talk 3** (Chair: Prof. Young Im Cho (Gachon University, Korea))
Design of Simple Structured Fuzzy Logic Control Systems and Their Applications
Prof. Byung-Jae Choi
(School of Electronic Engineering, Daegu University, Korea)

10:00-10:20 **Break**

10:20-12:20 **Parallel Sessions**

[Sa1-1] GS: Social Systems, Multi-Agent Systems

Chair: Hidekazu Yoshioka (Shimane University, Japan)

- 10:20-10:40 **Dynamic Decision-Making Model for Stochastic Population Management with Scheduled Inspections**
- Sa1-1-1 Hidekazu Yoshioka, Yuta Yaegashi, Yumi Yoshioka, Kunihiko Hamagami, Masayuki Fujihara and Kentaro Tsugihashi
- 10:40-11:00 **Agent-based Model of Negative Outgroup Stereotype in Intergroup Conflict Setting**
- Sa1-1-2 Muqtafi Akhmad, Shuang Chang and Hiroshi Deguchi
- 11:00-11:20 **Distributed Authority Management Method Based on Blockchains**
- Sa1-1-3 Taisei Igarashi and Yutaka Watanobe
- 11:20-11:40 **Agent-based Approach to Echo Chamber Reduction Strategy in Social Media**
- Sa1-1-4 Muhammad Al Atiqi, Shuang Chang and Hiroshi Deguchi
- 11:40-12:00 **Computer Simulation Based Robustness Comparison Regarding Agents' Moving-Speeds in Two- and Three-Dimensional Herding Algorithms**
- Sa1-1-5 Hiroyuki Hoshi, Ichiro Iimura, Shigeru Nakayama, Yoshifumi Moriyama and Ken Ishibashi
- 12:00-12:20 **Multi-agent Simulation Using Scenarios for Bridges Assessment**
- Sa1-1-6 Takeshi Oyama, Kazutoshi Sakakibara, Junzo Tachibana, Takuya Matsumoto, Makoto Ohara and Hisashi Tamaki

[Sa2-1] OS: Robot Integration System for Symbiosis with human (2) + GS: Robotics (2)

Chair: Tetsuya Kojima (National Institute of Technology, Tokyo College, Japan)

- 10:20-10:40 **Design and Motion Capabilities of an Emotion-Expressive Robot EmoSan**
- Sa2-1-1 Pancho Dachkinov, Tanio Tanev, Anna Lekova, Dondogjamts Batbaatar and Hiroaki Wagatsuma
- 10:40-11:00 **A study of Optical Flow in Peripheral Vision Area while Vehicle Cornering**
- Sa2-1-2 Yusuke Nagai, Hiroyuki Masuta, Tatsuo Motoyoshi, Kei Sawai, Takumi Tamamoto, Ken'ichi Koyanagi and Toru Oshima
- 11:00-11:20 ***Indirect Estimation of Operation Intention using Behavior Map for Master-Slave Robot Systems**
- Sa2-1-3 Katsuki Nagahara, Ken'Ichi Koyanagi, Takumi Tamamoto, Kei Sawai, Hiroyuki Masuta, Tatsuo Motoyoshi and Toru Oshima

11:20-11:40 **Object Recognition Based Robust Mapping for the Autonomous Mobile Robot under Dynamic Environment**

Sa2-1-4 Bin Zhang, Masahide Kaneko and Hunok Lim

11:40-12:00 ***Walking Motion Model based on Quaternion-valued Recurrent Neural Network for Powered Exoskeleton**

Sa2-1-5 Fumihito Murata and Yasutake Takahashi

[Sa3-1] OS: Advanced Biomedical Engineering and Human Assistive Technology (2) + GS: Brain Science

Chair: Noboru Takagi (Toyama Prefectural University, Japan)

10:20-10:40 **Facial Expression Sequence Recognition for a Japanese Sign Language Training System**

Sa3-1-1 Keisuke Yabunaka, Yuichiro Mori and Masahiko Toyonaga

10:40-11:00 **A Data-Glove for Japanese Sign Language Training System with Gyro-Sensor**

Sa3-1-2 Yuichiro Mori and Masahiko Toyonaga

11:00-11:20 **On Biometric Identification Using Optical-Coherence-Tomography Data for Ophthalmic Patients**

Sa3-1-3 Naotake Kamiura, Takayuki Yumoto, Tejiro Isokawa, Tomofusa Yamauchi and Hitoshi Tabuchi

11:20-11:40 **Hierarchical Temporal Memory Introducing Time Axis in Connection Segments**

Sa3-1-4 Shinichiro Naito and Masafumi Hagiwara

11:40-12:00 ***Predictive Method for Health Examination Values by BMI Fluctuation**

Sa3-1-5 Yuki Kitagawa and Yutaka Hata

[Sa4-1] GS: Decision Making and Risk Management (2)

Chair: Masahiro Inuiguchi (Osaka University, Japan)

10:20-10:40 **Nonstationary Markov Chain Model for Stopping-by Behavior on the way to Tsunami Evacuation Site**

Sa4-1-1 Kentaro Kumagai

10:40-11:00 **Estimation Methods of Interval Weights Centered at Geometric Mean from a Pairwise Comparison Matrix**

Sa4-1-2 Maho Yamaguchi and Masahiro Inuiguchi

11:00-11:20 **Increasing Convergence of the Quality of Estimated Interval Weight Vector in Interval AHP**

Sa4-1-3 Issei Torisu and Masahiro Inuiguchi

11:20-11:40 **The Process Discovery Approaches for Decision Making in Sales Activities**

Sa4-1-4 Yoshihito Nakayama, Masahiro Mori, Yoshiaki Narusue and Hiroyuki Morikawa

11:40-12:00 **Development of Rational Decision Making Procedure Based on Additive Multi-attribute Utility Function Using Strict Preference Information**

Sa4-1-5 Masato Ono, Tomohiro Hayashida, Ichiro Nishizaki and Shinya Sekizaki

[Sa5-1] GS: Computational Intelligence, Machine Learning (3)

Chair: Tsuyoshi Nakamura (Nagoya Institute of Technology, Japan)

10:20-10:40 **The Return Way Path Planning of an Autonomous Mobile Robot Considering Traveling Risk of the Road**

Sa5-1-1 Mutsumi Iwasa, Yuichiro Toda and Naoyuki Kubota

- 10:40-11:00 **Reinforcement Learning based on State Space Model using Growing Neural Gas for a Mobile Robot**
- Sa5-1-2 Tomoyuki Arai, Yuichiro Toda, Mutsumi Iwasa, Shuai Shao, Ryuta Tonomura and Naoyuki Kubota
- 11:00-11:20 ***Timeaxis Design of Driving State Learning System Using Non-Steady Model**
- Sa5-1-3 Satoru Furugori, Takeo Kato and Yoshiyuki Matsuoka
- 11:20-11:40 **Learning Evaluation Function for RoboCup Soccer Simulation using Humans' Choice**
- Sa5-1-4 Hidehisa Akiyama, Masashi Fukuyado, Toshihiro Gochou and Shigeto Aramaki

[Sa6-1] GS: Data Mining (3), Cognitive Science

Chair: Haruhiko Takase (Mie university, Japan)

- 10:20-10:40 **Cognitive Mechanism of Humor in Riddles: Examination of Relationship between Humor and Semantic Structure of Riddles**
- Sa6-1-1 Asuka Terai and Kento Yamashita
- 10:40-11:00 **Short Text Clustering based on Word Semantic Graph with Word Embedding Model**
- Sa6-1-2 Supakpong Jinarat, Bundit Manaskasemsak and Arnon Rungsawang
- 11:00-11:20 **Application of Output Embedding on Word2Vec**
- Sa6-1-3 Uchida Shuto, Yoshikawa Tomohiro and Furuhashi Takeshi
- 11:20-11:40 **Extraction of Frequent Sequential Patterns from Sequence at Uneven Intervals**
- Sa6-1-4 Kenta Morita, Haruhiko Takase, Masachika Sawamura, Naoki Morita and Hidehiko Kita
- 11:40-12:00 **Efficient Mining of Recurrent Rules from a Sequence Database Using Multi-Core Processors**
- Sa6-1-5 Seungyong Yoon and Hirohisa Seki
- 12:00-12:20 **Paraphrase Identification for Twitter by Co-training based on Words and Characters**
- Sa6-1-6 Koichi Nagatsuka and Masayasu Atsumi