

Detailed Program of SCIS&ISIS2020

For Zoom URLs, proceedings, and presentation videos, please refer to the link below.

<https://edas.info/p27304>

December 5, 2020 (JST / UTC+0900)

10:00-10:30 Opening Ceremony @Room1

Chair: Junji Nishino (The University of Electro-Communications)

10:30-11:30 Plenary Talk 1 @Room1

Chair: Kanta Tachibana (Kogakuin University)

Research, Development, and Social Experiments of New Transportation Methods in Gunma University

Prof. Naoya Ohta

11:30-12:30 Lunch Break

12:30-13:45 Parallel Sessions

[Sa-1] OS: Interactive Systems (1) @Room1

Chair: Makoto Fukumoto (Fukuoka Institute of Technology)

#1570662369, Full paper

Serendipity Recommender System for Academic Disciplines

Satoko Inoue and Masataka Tokumaru

#1570662744, Full paper

A Study on Coordination of Exercise Difficulty in Cognitive Training System for Older Adults

Daisuke Kitakoshi, Kentarou Suzuki, and Masato Suzuki

#1570663125, Full paper

Social Skills Training System in Social Settings Using Multiple Animated Characters

Masahide Yuasa

[Sa-2] OS: Data Science for Human-oriented Systems Design (1) @Room2

Chair: Shinichi Yoshida (Kochi University of Technology)

#1570664255, Full paper

Design of the Convolution Layer Using SoC FPGA and Evaluation of Latency Using a Camera Signal
Ryoki Kamesaka and Yukinobu Hoshino

#1570664331, Full paper

Automatic Acquisition of Immune Cells Location Using Deep Learning for Automated Analysis
Shoya Kusunose, Yuki Shinomiya, Yukinobu Hoshino, Takashi Ushiwaka, and Nagamasa Maeda

#1570664433, Full paper

Directed Graph-Based Researcher Recommendation by Random Walk with Restart and Cosine Similarity
Kanta Nakamura and Kazushi Okamoto

[Sa-3] GS: Robocup @Room3

Chair: Hidehisa Akiyama (Fukuoka University)

#1570662063, Full paper

Team Classification with Tactical Analysis Using Fuzzy Inference in RoboCup Soccer
Takuya Fukushima, Tomoharu Nakashima, and Vicenc Torra

#1570665719, Full paper

An Experience System of Soccer Referee Using Immersive Virtual Reality
Hidehisa Akiyama, Yudai Tanaka, Ryota Saito, and Shigeto Aramaki

#1570658963, Short paper

An Automatic Team Evaluation System for RoboCup Soccer Simulation 2D
Ryota Kuga, Yudai Suzuki and Tomoharu Nakashima

[Sa-4] GS: Decision Making (1) @Room4

Chair: Kazushi Okamoto (The University of Electro-Communications)

#1570664036, Full paper

Rough Set Logic for Kleene's Three-Valued Logic
Yotaro Nakayama, Seiki Akama, and Tetsuya Murai

#1570665136, Full paper

Real-Time Collision Risk Assessment System Based on the Fuzzy Theory in Accordance with Collision Avoidance Rules
Ho Namgung, Jung Sik Jeong, and Joo-Sung Kim

#1570659439, Full paper

Multiobjective Two-Level Simple Recourse Programming Problems with Discrete-Type Fuzzy Random Variables and Optimistic and Pessimistic Pareto Stackelberg Solutions

Hitoshi Yano

13:45-14:00 Break

14:00-15:40 Parallel Sessions

[Sa-5] OS: Interactive Systems (2) @Room1

Chair: Jun-ichi Imai (Chiba Institute of Technology), Yoshiko Hanada (Kansai University)

#1570664366, Full paper

Acceptability of a Decision Maker to Handle Multi-Objective Optimization on Design Space

Makoto Inoue, Hibiki Matsumoto, and Hideyuki Takagi

#1570665064, Full paper

Verification of Performance of Multi-Parental Real-Valued Crossover in Interactive Genetic Algorithm

Yusuke Yabuzaki, Yoshiko Hanada, and Makoto Fukumoto

#1570665081, Full paper

Peripheral Notification That Does Not Interfere with User's Concentration by Interactive Projection

Tomoya Ishige and Jun-ichi Imai

#1570665116, Full paper

Optimization of Sound of Autonomous Sensory Meridian Response with Interactive Genetic Algorithm

Makoto Fukumoto and Koki Hijikuro

[Sa-6] OS: Data Science for Human-oriented Systems Design (2) @Room2

Chair: Shinichi Yoshida (Kochi University of Technology)

1570664713, Full paper

Development and Evaluation of Identification Devices for Vermin Capture System

Junsuke Yokoseki and Yukinobu Hoshino

#1570665093, Full paper

A 3D-CNN Classifier for Gender Discrimination from Diffusion Tensor Imaging of Human Brain

Yuichiro Nitta, Yuki Shinomiya, Kaechang Park, and Shinichi Yoshida

1570665828, Full paper

Experimental Verification of Control Rules for A Lane-Keeping Controller Using Similarity Fuzzy Reasoning

Yuka Nishiyama, Yuki Shinomiya, Toshimi Yamamoto, and Yukinobu Hoshino

[Sa-7] OS: Fusion Technologies of Theory and Science for Data Utilization (1) @Room3

Chair: Takeshi Matsui (Gunma University), Antonio Oliveira Nzinga Rene (Toyama Prefectural University)

#1570659116, Full paper

Adapting the Learning Rate of the Learning Rate in Hypergradient Descent

Kazuma Itakura, Kyohei Atarashi, Satoshi Oyama, and Masahito Kurihara

#1570663789, Full paper

Model Construction Based on Variable Selection of Indicators and Alternative Data in Market Forecasting

Domoto Eri, Junko Shibata, Itaru Aso, and Koji Okuhara

#1570665078, Short paper

A Pervasive Community Detection Method Through Modular Decomposition of Markov Chain for Social Media Analysis

Takeshi Matsui and Antonio Oliveira Nzinga Rene

#1570664738, Full paper

Development of Creative Thinking Support Method Through Text Mining for Inspiration

Koji Okuhara, Takeshi Matsui, and Yuki Yamamoto

[Sa-8] GS: Decision Making (2) @Room4

Chair: Naoki Masuyama (Osaka Prefecture University)

#1570664320, Full paper

Stochastic Unit Commitment Problem in Electricity Market

Ryusei Mikami, Takayuki Shiina, and Ken-ichi Tokoro

#1570664452, Full paper

Solution Algorithm for the Vehicle Routing Problem with Stochastic Demands

Ryota Omori and Takayuki Shiina

#1570664344, Full paper

The Facility Location Problem with Probabilistic Constraints

Atsuya Suzuki, Tomoki Fukuba, and Takayuki Shiina

15:40-16:00 Break

16:00-17:40 Parallel Sessions

[Sa-9] OS: Robot Systems Cooperate with Human @Room1

Chair: Hiroyuki Masuta (Toyama Prefectural University), Takenori Obo (Tokyo Polytechnic University & Faculty of Engineering)

#1570663860, Full paper

Hand Gesture Communication Using Deep Learning Based on Relevance Theory

Wen Bang Dou, Wei Hong Chin, and Naoyuki Kubota

#1570664357, Full paper

Development of Multi-Robot Presentation System for Lecture in Classroom

Hiroyuki Masuta and Ken'ichi Koyanagi

#1570665019, Full paper

Design Considerations for Robot Partner System Based on Modular Structure

Jinseok Woo, Yasuhiro Ohyama, and Naoyuki Kubota

#1570668593, Full paper

Semi-Autonomous Robotic Avatar System for Patients with Motor Disabilities

Takenori Obo, Ryoya Hase, and Duk Shin

[Sa-10] OS: Soft Computing in Urban and Transport Planning @Room2

Chair: Takamasa Akiyama (Kansai University)

#1570664867, Full paper

The Optimal Toll Determination of Urban Expressway with Deep Learning Method

Hiroaki Inokuchi and Takamasa Akiyama

#1570666830, Full paper

Modeling for Residence Preference in Local City Considering Heterogeneous Households

Masashi Okushima, Hideo Yamanaka, and Kojiro Watanabe

#1570691389, Late-breaking paper

Modal Choice Model with Fuzzy Logic to Evaluate the Bicycle Transport Policy

Takamasa Akiyama and Hiroaki Inokuchi

#1570664324, Short paper

Visualizing the Importance of Floor-Plan Image Features in Rent-Prediction Models

Ryosuke Hattori, Kazushi Okamoto, and Atsushi Shibata

[Sa-11] OS: Fusion Technologies of Theory and Science for Data Utilization (2) / GS: Natural Language Processing @Room3

Chair: Takeshi Matsui (Gunma University), Antonio Oliveira Nzinga Rene (Toyama Prefectural University)

#1570664654, Full paper

Creation of Intellectual Property Based on Natural Language Generation Model

Antonio Oliveira Nzinga Rene, Takeshi Matsui, Shigeaki Onoda, and Koji Okuhara

#1570663550, Short paper

Simultaneous Visualization of Documents, Words and Topics by Tensor Self-Organizing Map and Non-Negative Matrix Factorization

Kazuki Noguchi, Takuro Ishida, and Tetsuo Furukawa

#1570653935, Full paper

Salient Feature Extraction in Japanese Metaphor Generation

Asuka Terai and Masaki Kitano

#1570658381, Full paper

An Algorithm for the Automatic Precisation of the Meaning of Adjectives

Moreno Colombo and Edy Portmann

[Sa-12] GS: Social Systems @Room4

Chair: Ayahiko Niimi (Future University Hakodate)

#1570654600, Full paper

Development of Sightseeing Spot Recommendation System Considering Users' Visit Frequency

Yudai Kato and Kayoko Yamamoto

#1570664536, Full paper

Agent-Based Approach to Resolve the Conflicting Observations of Online Echo Chamber

Muhammad Al Atiqi, Shuang Chang, and Hiroshi Deguchi

#1570664598, Full paper

High-Degree Noise Addition Method for the k-Degree Anonymization Algorithm

Jana Medková

17:40-18:00 Break

18:00-19:00 Plenary Talk 2 @Room1

Chair: Yusuke Nojima (Osaka Prefecture University)

Interactive Natural Language Technology for Human-Centric Explainable Artificial Intelligence

Dr. Jose M. Alonso

December 6, 2020 (JST / UTC+0900)

10:30-11:30 Plenary Talk 3 @Room1

Chair: Kaori Yoshida (Kyushu Institute of Technology)

Harmony Search Algorithm and its Applications in Japan and Korea

Prof. Zong Woo Geem

11:30-12:30 Lunch Break

12:30-14:10 Parallel Sessions

[Su-1] OS: Human Symbiotic Systems (1) @Room1

Chair: Tsuyoshi Nakamura (Nagoya Institute of Technology)

1570654596, Full paper

Human-Robot Interaction Based on Facial Expression Recognition Using Deep Learning

Yoichiro Maeda, Tensei Sakai, Katsuari Kamei, and Eric Cooper

#1570658956, Full paper

Deep Learning Method for Estimating Perplexion in Learners by Educational Support Robots

Ryo Yoshizawa, Felix Jimenez, and Kazuhito Murakami

#1570662087, Full paper

Reward Function Using Inverse Reinforcement Learning and Fuzzy Reasoning

Yuta Kato, Masayoshi Kanoh, and Tsuyoshi Nakamura

#1570666974, Full paper

Effect of Humanoid Robot's Reaction on Human Touch to Robot

Mariko Okuda, Yasutake Takahashi, and Satoki Tsuichihara

[Su-2] OS: Recent Trends of Clustering Methodologies @Room2

Chair: Yukihiro Hamasuna (Kindai University)

#1570655400, Full paper

On Fuzzy Clustering Algorithms for Nominal Data

Yuchi Kanzawa

#1570664051, Full paper

Basic Consideration of Rough C-Medoids Clustering with Minkowski Distance

Seiki Ubukata, Atsushi Sugimoto, Akira Notsu, and Katsuhiko Honda

#1570664927, Full paper

Controlled-Sized Clustering for Time-Series Data

Nobuhiko Tsuda and Yukihiro Hamasuna

#1570664965, Full paper

Basic Consideration of Collaborative Filtering Based on Rough C-Means Clustering

Seiki Ubukata, Shu Takahashi, Akira Notsu, and Katsuhiko Honda

[Su-3] GS: Evolutionary Computing (1) @Room3

Chair: Kei Ohnishi (Kyushu Institute of Technology)

#1570653741, Full paper

Adaptive Directional Mutation for an Adaptive Differential Evolution Algorithm

Tetsuyuki Takahama and Setsuko Sakai

#1570665115, Full paper

Parametric Genetic Programming

Adam Kotaro Pindur, Takahiro Horiba, and Hitoshi Iba

#1570652124, Full paper

Accelerating Fireworks Algorithm with Dynamic Population Size Strategy

Jun Yu and Hideyuki Takagi

[Su-4] OS: High Performance Knowledge Management and Its Application to Intelligent System @Room4

Chair: Jin-Woo Jung (Dongguk University)

#1570669520, Short paper

Integrative Meta-Analysis of Transcriptome Data for Unmasking Biological Mechanism of Idiopathic Pulmonary Fibrosis

Sungmin Park, Junghyun Jung, and Jong Wha Joanne Joo

#1570670134, Full paper

Lightweight Real-Time Fall Detection Using Bidirectional Recurrent Neural Network

Sangyeon Kim, Gawon Lee, and Jihie Kim

#1570670250, Full paper

A Study on the Evaluation System Through Software Weakness Analysis

Kyung-won Kim, Seokmin Chang, and Yunsik Son

#1570670253, Full paper

Real-Time Motion Feedback System Based on Smart Mirror Vision

Seoungtak Kim, Dasol Seo, Sangyong Lee, Yeonjun Kim, Hyun Wook Kang, Yong-Sik Choi, and Jin-Woo Jung

14:10-14:30 Break

14:30-16:10 Parallel Sessions

[Su-5] OS: Human Symbiotic Systems (2) / GS: Speech Recognition @Room1

Chair: Masayoshi Kanoh (Chukyo University), Atsushi Shibata (Advanced Institute of Industrial Technology)

#1570662219, Full paper

Impression Investigation of a Robot's Learning by Observing the Learner

Chihiro Arai, Felix Jimenez, and Kazuhito Murakami

#1570664861, Full paper

A Verification of Visualization Ability of Onomatopoeia Thesaurus Map for Sound-Symbolism on Japanese Vowels

Takaki Kaneiwa, Tsuyoshi Nakamura, Masayoshi Kanoh, and Koji Yamada

#1570665092, Full paper

Rescoring Teacher Outputs with Decoded Utterances for Knowledge Distillation in Automatic Speech Recognition

Henning M Holen and Jee-Hyong Lee

#1570655520, Short paper

A Study on Feature Values as a Speaker Identification Method

Etsuro Nakamura, Yoichi Kageyama, and Motonari Shirasu

[Su-6] OS: Advanced Human Sensing and Intelligent Support Systems @Room2

Chair: Hironobu Takano (Toyama Prefectural University)

#1570664782, Full paper

Effectiveness of Feature-Selected LBP-TOP for Emotional Estimation by Micro-Expression

Koki Kato, Hironobu Takano, Masahiro Saiko, Ryuichi Hiraike, and Hitoshi Imaoka

#1570664970, Full paper

Method for Generating Captions for Clothing Images to Support Visually Impaired People

Kiri Tateno, Noboru Takagi, Kei Sawai, Hiroyuki Masuta, and Tatsuo Motoyoshi

#1570664991, Full paper

A Pattern Recognition Method for Scene Sketch Images Using Deep Learning and Its Evaluation

Kengo Oshima, Noboru Takagi, Kei Sawai, Hiroyuki Masuta, and Tatsuo Motoyoshi

[Su-7] GS: Evolutionary Computing (2) @Room3

Chair: Tetsuyuki Takahama (Hiroshima City University)

#1570664747, Full paper

Inverse Model Optimization by Differential Evolution to Improve Neural Predictive Control

Edgar Ademir Morales-Perez and Hitoshi Iba

#1570665004, Full paper

Genetic Algorithms Using Neural Network Regression and Group Lasso for Dynamic Selection of Crossover Operators

Masaya Kato, Miho Ohsaki, and Kei Ohnishi

#1570665058, Full paper

An Evolutionary Algorithm Inspired by Evolution of Birdsong Grammars to Quickly Obtain Practical Solutions to Large-Scaled Problems

Naomichi Tabata and Kei Ohnishi

#1570663529, Full paper

Randomness Selection in Differential Evolution Using Thompson Sampling

Akira Notsu, Junya Tsubamoto, Yuichi Miyahira, Seiki Ubukata, and Katsuhiro Honda

[Su-8] GS: Medical Informatics @Room4

Chair: Yukinobu Hoshino (Kochi University of Technology)

#1570665732, Full paper

Hand Frame Extraction in Surgical Video Images Using Convolutional Neural Network

Shadman Sakib, Belayat Hossain, Takafumi Hiranaka, and Syoji Kobashi

#1570665121, Full paper

Automatic Teeth Recognition Method from Dental Panoramic Images Using Faster R-CNN and Prior Knowledge Model

Kota Motoki

#1570664156, Short paper

Analysis of Local Cerebral Blood Flow During Exposure to Bone Conduction Sound

Yuki Mukumoto, Fumiya Kinoshita, and Hideaki Touyama

16:10-16:30 Break

16:30-18:10 Parallel Sessions

[Su-9] OS: Intelligent Media and New-Generation Software @Room1

Chair: Satoshi Oyama (Hokkaido University)

#1570658732, Full paper

Unsupervised Feature Learning for Output Control of Generative Models

Kazuki Toda, Kyohei Atarashi, Satoshi Oyama, and Masahito Kurihara

#1570663343, Full paper

Discovering Conditional Properties of Recursive Functions in a Proof Assistant

Haruhiko Sato and Natsuo Ishii

#1570663556, Full paper

Monocular Depth Estimation with a Multi-Task and Multiple-Input Architecture Using Depth Gradient

Michiru Takamine and Satoshi Endo

#1570664788, Full paper

Optimization Model of Takeout-Delivery Process Based on Concept of Crowdsourcing

Jiacheng Li, Masato Noto, and Yang Zhang

[Su-10] GS: Neural Network @Room4

Chair: Kazuhiko Kawamoto (Chiba University)

#1570665001, Full paper

Column-Based Decoder of Internal Prediction Representation in Cortical Learning Algorithms

Takeru Aoki, Keiki Takadama, and Hiroyuki Sato

#1570664633, Full paper

Three-Stream Graph Convolutional Networks for Zero-Shot Action Recognition

Wu Nan and Kazuhiko Kawamoto

#1570664414, Full paper

A Two-Stage Deep Learning-Based Approach for Automatic Reading of Analog Meters

Shohei Ueda, Kaito Suzuki, Jumpei Kanno and Zhao Qiangfu

December 7, 2020 (JST / UTC+0900)

10:00-11:40 Parallel Sessions

[Mo-1] OS: Affective/Kansei Information Processing and its Interactive Approach (1) @Room1

Chair: Muneyuki Unehara (Nagaoka University of Technology), Shigeru Kato (Niihama College, National Institute of Technology)

#1570665687, Full paper

Interactive Apparel Coordination Recommendation System Reflecting Situation and Preference
Muneyuki Unehara, Yui Hasegawa, Koichi Yamada, and Izumi Suzuki

#1570664731, Short paper

Classification of Worries and Consultations with School Refusal Students Using Machine Learning
Rikuto Ishikura, Masahiro Takeda, and Shino Iwashita

#1570664754, Short paper

A Study on Reinforcement-Learning Agents with Personality Through the Implementation of Character Parameters
Daichi Ando and Shino Iwashita

#1570664884, Full paper

Investigation of Factors Related to the Impression of Clips Used for Automatic Generation of Accompaniment Intended by the User
Kaito Terachi and Mio Suzuki

[Mo-2] OS: Modern Applications of Clifford Algebra (1) @Room2

Chair: Eckhard Hitzer (International Christian University)

The session will begin with a geometric algebra tutorial by Stephane Breuils (Paris & NII Tokyo)

#1570655307, Full paper

Experiments with Clifford Geometric Algebra Applied to Cryptography
David William Honorio Araujo da Silva, Marcelo Araujo Xavier, C. Edward Chow, and Carlos Paz de Araujo

#1570659855, Short paper

Fundamental Structure of Orthogonal Variable Commutative Quaternion Neurons
Tohru Nitta and Hui Hu Gan

[Mo-3] GS: Intelligent Control @Room3

Chair: Hugang Han (Prefectural University of Hiroshima)

#1570657537, Full paper

Dead Zone Compensation in Direct Current Motors: A Review

Leonardo Pires de Souza

#1570664281, Full paper

Control System Based on Affine T-S Fuzzy Model with Uncertainty

Hugang Han

#1570664432, Full paper

Reinforcement Learning with Randomized Physical Parameters for Fault-Tolerant Robots

Wataru Okamoto and Kazuhiko Kawamoto

[Mo-4] GS: Machine Learning Application @Room4

Chair: Seiki Ubukata (Osaka Prefecture University)

#1570664119, Full paper

Utilizing Timed Petri Nets to Guide Data-Driven Fault Diagnosis of PLC-Timed Event Systems

Joseph Cohen, Baoyang Jiang, and Jun Ni

#1570659632, Full paper

Frost Prediction for Vineyard Using Machine Learning

Yosuke Tamura, Liya Ding, Kosuke Noborio, and Kazuki Shibuya

#1570664696, Full paper

Variable Importance Measures Based on Ensemble Learning Methods for Convective Storm Tracking

Hansoo Lee, Jonggeun Kim, Seunghwan Jung, Minseok Kim, Baekcheon Kim, and Sungshin Kim

11:40-12:30 Lunch Break

12:30-13:45 Parallel Sessions

[Mo-5] OS: Affective/Kansei Information Processing and its Interactive Approach (2) @Room1

Chair: Shino Iwashita (Tokyo University of Technology)

#1570664588, Short paper

Proposal of a Computer-Reproducible Model of Consciousness

Toshiki Watanabe and Hiroyuki Kameda

#1570665135, Full paper

Response Generation Reflecting the Personality of a Chat Dialogue System

Toru Sugimoto and Yusuke Temmanyu

#1570665756, Short paper

Automatic Detection of Beginner's Welding Joint

Shigeru Kato, Takanori Hino, Hironori Kumeno, Tomomichi Kagawa, and Hajime Nobuhara

[Mo-6] OS: Modern Applications of Clifford Algebra (2) @Room2

Chair: Kanta Tachibana (Kogakuin University)

#1570664122, Full paper

Strip Adjustment of Airborne Laserscanning Data with Conformal Geometric Algebra

Eckhard Hitzer, Werner Benger, Manfred Niederwieser, Ramona Baran, and Frank Steinbacher

#1570682748, Late-breaking paper

Somewhat Homomorphic Key Update Protocol Based on Clifford Geometric Algebra for Distributed Ledger Technology

David William Honorio Araujo da Silva, Hanes Barbosa Marques de Oliveira, Marcelo Araujo Xavier, C. Edward Chow, and Carlos Paz de Araujo

[Mo-7] GS: Computer Vision @Room3

Chair: Yuki Shinomiya (Kochi University of Technology)

#1570662054, Short paper

Learning Data Conditions for Resolution Improvement Using UAV Data

Kai Matsui, Hikaru Shirai, Yoichi Kageyama and Hiroshi Yokoyama

#1570691486, Late-breaking paper

Design and Development of Banana Ripeness Classification Using Depthwise Separable Convolution

Edho Fernando and Nabila Shabrina

#1570685482, Late-breaking paper

LSTM for Human Activity Recognition Based on Feature Extraction Using Conformal Geometric Algebra

Nguyen Nang Hung Van

[Mo-8] GS: Decision Making (3) @Room4

Chair: Tomoe Entani (University of Hyogo)

#1570655898, Full paper

Individual Decision Support Reflecting Relations to Others

Tomoe Entani

#1570653171, Full paper

Aggregations of Subjective Probabilities Based on Logical Information Source Model and of Possibilistic CFs Using Dempster's Rule

Koichi Yamada

#1570659254, Short paper

Two Confirmation Bias Models for Analyzing Biased Pattern Classification Processes

Kazunori Fujimoto

13:45-14:00 Break

14:00-14:30 Closing Ceremony @Room1

Chair: Mitsuru Iwata (Tokyo Metropolitan College of Industrial Technology)