5   Program at a Glance

Wednesday, 4 September 2019

13:00 -	Registration at High-Rise Wing 5F, Lobby (in front of Room 515)
14:00 - 14:10	Opening Ceremony at High-Rise Wing 5F, Room 515
14:10 - 15:10	Keynote Speech (KEY-1): Morphological Filter Revisited at High-Rise Wing 5F, Room 515 Invited Speaker: Prof. Makoto Nakashizuka (Chiba Institute of Technology) Chair: Hiroyuki Tsuji (Kanagawa Institute of Technology) Co-Chair: Cheong Ghil Kim (Namseoul University)
15:10 - 15:40	Coffee Break at High-Rise Wing 6F, Presentation Space
15:40 - 17:00	Special Session (SS1): AI and Intelligent Robotics at High-Rise Wing 5F, Room 515 Organizer & Chair: Hakaru Tamukoh (Kyushu Institute of Technology) Papers: SS1-1, SS1-2, SS1-3, SS1-4
17:30 - 19:30	Welcome Reception at Low-Rise Wing 1F, Cafeteria

Thursday, 5 September 2019

9:00 -	Registration at High-Rise Wing 5F, Lobby (in front of Room 515)
9:30 - 10:30	Keynote Speech (KEY-2): Recent Advances of Information Retrieval by Data Embedding Technique to Printed Images Using Mobile Devices at High-Rise Wing 5F, Room 515 Invited Speaker: Prof. Mitsuji Muneyasu (Kansai University,) Chair: Tetsuro Fujii (Tokyo City University)
10:30 - 10:50	Coffee Break at High-Rise Wing 6F, Presentation Space
10:50 - 12:10	Regular Session (RS1): Smart Communication and Systems 1 Short Oral Presentation at High-Rise Wing 5F, Room 515 Poster Presentation at High-Rise Wing 6F, Presentation Space Chair: Yosuke Sugiura (Saitama University) Papers: RS1-1, RS1-2, RS1-3, RS1-4, RS1-5, RS1-6
12:10 - 13:30	Lunch
13:30 - 15:40	Special Session (SS2): AI & Intelligence Processing at High-Rise Wing 5F, Room 515 Organizer: Tomoaki Kimura (Kanagawa Institute of Technology) Chair: Hideaki Misawa (National Institute of Technology, Ube College) Papers: SS2-1, SS2-2, SS2-3, SS2-4, SS2-5, SS2-6

15:40 - 16:00	Coffee Break at High-Rise Wing 6F, Presentation Space
16:00 - 17:20	Regular Session (RS2): Smart Communication and Systems 2 Short Oral Presentation at High-Rise Wing 5F, Room 515 Poster Presentation at High-Rise Wing 6F, Presentation Space Chair: Soh Yoshida (Kansai University) Papers: RS2-1, RS2-2, RS2-3, RS2-4, RS2-5, RS2-6
17:20 - 18:00	Break
18:00 – 20:00	Banquet at Nakano Sunplaza 11F, Blossom Room

Friday, 6 September 2019

9:00 -	Registration at High-Rise Wing 5F, Lobby (in front of Room 515)
9:30 - 11:00	Regular Session (RS3): Intelligent Image and Video Processing Short Oral Presentation at High-Rise Wing 5F, Room 515 Poster Presentation at High-Rise Wing 6F, Presentation Space Chair: Tatsuya Fujii (NTT) Papers: RS3-1, RS3-2, RS3-3, RS3-4, RS3-5, RS3-6, RS3-7, RS3-8
11:00 - 11:20	Coffee Break at High-Rise Wing 6F, Presentation Space
11:20 - 12:20	Special Session (SS3): Next Content Technologies and Applications at High-Rise Wing 5F, Room 515 Organizer & Chair: Cheong Ghil Kim (Namseoul University) Papers: SS3-1, SS3-2, SS3-3
12:20 - 12:30	Closing at High-Rise Wing 5F, Room 515

6   Technical Program

Note: "(pp. xx-xx)" represents the page numbers in the electronic proceeding.

SS1   Special Session: AI and Intelligent Robotics

Wednesday, 4 September 2019, 15:40 - 17:00 at High-Rise Wing 5F, Room 515

Organizer & Chair: Hakaru Tamukoh (Kyushu Institute of Technology)

SS1-1   **System Development of Tomato Harvesting Robot Based on Modular Design**   *(pp. 1-6)*

Takuya Fujinaga, Shinsuke Yasukawa, Kazuo Ishii (Kyushu Institute of Technology)

SS1-2   **A Quick Data Generation Method for Training Object Detection Algorithms in Home Environments**   *(pp. 7-10)*

Yuma Yoshimoto (Kyushu Institute of Technology), Muhammad Farhan Mustafa, Wan Zuha Wan Hasan (Universiti Putra Malaysia), Hakaru Tamukoh (Kyushu Institute of Technology)

SS1-3   **Component-based FPGA Development for Intelligent Robotics**   *(pp. 11-18)*

Takeshi Ohkawa (Tokai University)

SS1-4   **Virtual Agent to Absorb the Difference of Impression According with Real-time Emotion by Biometric Information**   *(pp. 19-23)*

Shoudai Suzuki, Chen Feng, Peeraya Sripian, Reiji Yoshida, Midori Sugaya (Shibaura Institute of Technology)

SS2   Special Session: AI & Intelligence Processing

Thursday, 5 September 2019, 15:30 - 17:40 at High-Rise Wing 5F, Room 515

Organizer: Tomoaki Kimura (Kanagawa Institute of Technology)

Chair: Hideaki Misawa (National Institute of Technology, Ube College)

SS2-1   **Traffic Flow State Prediction Based on Deep Learning - Taking Hohhot as an Example**   *(pp. 24-28)*

Jiaqi Zhang, Hongye Yang, Shuchen Gao, Zituo Li (Inner Mongolia University of Technology)

SS2-2   **Short-term Traffic Flow Prediction Based on Recurrent Neural Network**   *(pp. 29-33)*

Bohan Huang, Hongye Yang, Yun Bai (Inner Mongolia University of Technology)

SS2-3   **Alphabet and Number Recognition of Banknote by Using the Deep Learning**   *(pp. 34-37)*

Daichi Kayanuma (Kanagawa Institute of Technology), Akira Tehara (MARS KOA), Hiroyuki Tsuji, Tomoaki Kimura (Kanagawa Institute of Technology)

SS2-4   **3D Reconstruction from a Single Image Considering Connected Components**   *(pp. 38-43)*

Takumi Suzuki, Tomoaki Kimura, Hiroyuki Tsuji (Kanagawa Institute of Technology)

SS2-5   **Personal Identification by CNN Using Footstep Waveforms**   *(pp. 44-48)*

Yoshiki Goto, Akitoshi Itai (Chubu University)

SS2-6   **Depth Estimation from a Single Shot Image Using Feature Pyramid Network**   *(pp. 49-53)*

Yudai Fukuda, Takuro Oki, Ryusuke Miyamoto (Meiji University)

SS3   Special Session: Next Content Technologies and Applications

Friday, 6 September 2019, 11:20 - 12:20 at High-Rise Wing 5F, Room 515

Organizer & Chair: Cheong Ghil Kim (Namseoul University)

SS3-1   **Serious Virtual Reality Game Contents Implementation for Training of Strabismic Patients**   *(pp. 54-57)*

Jehyun Kim, Seok-Hee Oh (Gachon University,)

SS3-2   **Study on CNN-based Stroke Diagnosis System**   *(pp. 58-62)*

Su-min Jung, Taeg-keun Whangbo (Gachon University,)

SS3-3   **A Study of Realistic 3D Sound Rendering Using Sound Tracing for Mobile Virtual Reality**   *(pp. 63-66)*

Eunjae Kim, Juwon Yun, Woonam Chung (Sejong University), Youngsik Kim (Korea Polytechnic University), Cheong Ghil Kim (Namseoul University), Woo-Chan Park (Sejong University)

RS1   Regular Session: Smart Communication and Systems 1

Thursday, 5 September 2019, 10:50 - 12:10

Short Presentation   **at High-Rise Wing 5F, Room 515**
Poster Session   **at High-Rise Wing 6F, Presentation Space**

Chair: Yosuke Sugiura (Saitama University)

RS1-1   **Research on Bus Data Pre-processing for Traffic Flow Prediction**   *(pp. 67-71)*

Shuchen Gao, Hongye Yang, Jiaqi Zhang (Inner Mongolia University of Technology)

RS1-2   **Refined Autocorrelation Function for Pitch Detection of Speech**   *(pp. 72-77)*

Md. Saifur Rahman, Yosuke Sugiura, Tetsuya Shimamura (Saitama University)

RS1-3   **Comparison of Several 3D Reconstruction Methods based on Aerial Images of Traffic Accident**   *(pp. 78-83)*

XiaoJia Lu, DongMei Wang, Jian Li (Inner Mongolia University of Technology)

RS1-4   **Influence of Image Overlap on Quality of 3D Reconstruction Based on Aerial Images**   *(pp. 84-87)*

DongMei Wang, XiaoJia Lu, Jian Li (Inner Mongolia University of Technology)

RS1-5   **Biometric Authentication using Evoked EEG by Invisible Visual Stimulation - Feature Extraction Based on Wavelet Transform -**   *(pp. 88-92)*

Nozomu Kinjo, Isao Nakanishi (Tottori University)

RS1-6   **A Relationship between Joint Synergy and Footstep**   *(pp. 93-97)*

Shin'ya Okajima, Ken Sasakura, Akitoshi Itai (Chubu University)

RS2   Regular Session: Smart Communication and Systems 2

Thursday, 5 September 2019, 16:00 - 17:20

Short Presentation   at High-Rise Wing 5F, Room 515
Poster Session   at High-Rise Wing 6F, Presentation Space

Chair: Soh Yoshida (Kansai University)

RS2-1   **Dither Signal Design for PAPR Reduction in OFDM-IM**   *(pp. 98-103)*

Shinya Watanabe, Teruyuki Miyajima, Yoshiki Sugitani (Ibaraki University)

RS2-2   **On Logic Functions of Complementary Sets of Polyphase Sequences**   *(pp. 104-108)*
Shutaroh Takehara, Sho Kuroda, Shinya Matsufuji, Takahiro Matsumoto, Yuta Ida (Yamaguchi University)

RS2-3   **Research on Optical CDMA System Using Two-Dimensional Optical ZCZ Sequence Set**   *(pp. 109-114)*
Ryosuke Shimizu, Koki Nomura, Takahiro Matsumoto (Yamaguchi University), Hideyuki Torii (Kanagawa Institute of Technology), Yuta Ida, Shinya Matsufuji (Yamaguchi University)

RS2-4   **Study on Model of Optical CDMA System Using LED and APD Elements**   *(pp. 115-118)*
Dai Ozaki, Sho Adachi, Aoi Sawatari, Takahiro Matsumoto (Yamaguchi University), Hideyuki Torii (Kanagawa Institute of Technology), Yuta Ida, Shinya Matsufuji (Yamaguchi University)

RS2-5   **Implementation of the Elliptic Curve Cryptography over Gaussian Integral Finite Group onto Excel**   *(pp. 119-124)*
Kazuki Naganuma, Takeshi Suzuki, Hiroyuki Tsuji, Tomoaki Kimura (Kanagawa Institute of Technology)

RS2-6   **Enhancing Image Compression by Adaptive Block Truncation Coding with Edge Quantization**   *(pp. 125-130)*
Ching-Nung Yang, Yi-Cheng Chen, Yung-Chien Chou, Tao-Ku Chang (National Dong Hwa University), Cheonshik Kim (Sejong University)

RS3   Regular Session: Intelligent Image and Video Processing

Friday, 6 September 2019, 9:30 - 11:00

Short Presentation   at High-Rise Wing 5F, Room 515
Poster Session   at High-Rise Wing 6F, Presentation Space

Chair: Tatsuya Fujii (NTT)

RS3-1   **Fast Haze Removal of Fixed-point Camera Images Using Temporal Update of Transmission Map**   *(pp. 131-135)*
Tatsuya Hamamura, Tomoaki Kimura, Hiroyuki Tsuji (Kanagawa Institute of Technology)

RS3-2   **Body Part Categorization and Occlusion Detection Based Volleyball Players' Spike Height Analysis**   *(pp. 136-140)*
Ziken Li (Waseda University), Xina Cheng (Xidian University), Takeshi Ikenaga (Waseda University)

RS3-3   **Dense Trajectory Length and Direction Feature Based Player Receive Reaction Time Detection in Volleyball Game**   *(pp. 141-145)*
Yanchao Liu (Waseda University), Xina Cheng (XiDian University), Takeshi Ikenaga (Waseda University)

RS3-4   **Temporal Coherence Based Mismatch Removal for High Frame Rate and Ultra-Low Delay System**   *(pp. 146-150)*
Zhe Wang, Songlin Du, Takeshi Ikenaga (Waseda University)

RS3-5   **An Estimation of Standard Deviation of Gaussian Noise Using the Image Variation Components and the Denoising Filter**   *(pp. 151-154)*
Takeshi Suzuki, Hiroyuki Tsuji, Tomoaki Kimura (Kanagawa Institute of Technology)

RS3-6   **Visual Tracking via Correlation Filter using Luminance Histogram and Adaptive Model**   *(pp. 155-160)*
Zhaoqian Tang, Kaoru Arakawa (Meiji University)

RS3-7   **A Graph-based Video Visual Reranking Method via Heterogenous Graph Analysis**   *(pp. 161-166)*
Soh Yoshida, Mitsuji Muneyasu (Kansai University)

RS3-8   **Improvement of Data Embedding Method to Printed Image with High Detection Rate**   *(pp. 167-171)*
Masashi Shiiba, Takuhiro Nishikawa, Mitsuji Muneyasu, Soh Yoshida (Kansai University)