Program of the 5th International Symposium on Advanced Technologies and Applications in the Internet of Things

ATAIT 2023

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The 5th International Symposium on Advanced Technologies and Applications in the Internet of Things (ATAIT 2023) will be held in Ritsumeikan University Biwako-Kusatsu Campus (BKC), Kusatsu, Shiga, Japan on August 28-29, 2023. The conference will take place as a hybrid conference. ATAIT is sponsored by the VLSI center of Ritsumeikan University and supported by IEEE CEDA All Japan Joint Chapter. ATAIT provides an international symposium for professionals, academics, and researchers to present latest developments in IoT technologies and applications, including the network, security, processor architecture, high performance computing, image processing, FPGAs and GPUs, etc. It particularly welcomes those emerging methodologies and techniques which bridge theoretical studies and applications in the Internet of Things.

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Monday, August 28

11:00-13:00 Registration (5th Floor, Rohm Plaza)

13:00-13:05 Opening Remarks (Conference Room, Rohm Plaza)

13:05-14:05 Plenary Talk (Conference Room, Rohm Plaza)
Prof. Masahiro Tanaka (Konan Univ.)
Development of Intelligent Systems for Health Care and Monitoring Person's Movement

14:05-14:30 Break (and preparation of online presentations for Session 1)

14:30-16:00 Session 1 (Conference Room, Rohm Plaza)
Chair: Hengyi Li
1. [14:30] **(Invited)** Detection and classification of peripheral plasmodium parasites in blood smears using filters and machine learning algorithms,
   Aravinda C V, Sannidhan M S, Vaishali Bangera, Jyothi Shetty, Vijaya Shetty and Vijayalakshmi Kochari
2. [15:00] **(Invited)** Intrusion Detection in IoT Using Ensemble Approach,
   Elijah M. Maseno and Zenghui Wang
3. [15:30] **(Invited)** Attention mechanisms for wearable sensor-based human activity recognition
   Xin Wang, Yan Wang, Yingrui Geng, Hongnian Yu, Xiaoxu Wen and Aihui Wang

16:00-16:20 Break

16:20-17:40 Session 2 (Conference Room, Rohm Plaza)
Chair: Takeshi Kumaki
1. [16:20] Yolo V4 for Kuzushiji Recognition With Synthetic Training Data Generated by GAN,
   Mingyuan Li, Lin Meng and Xuebin Yue
2. [16:40] Design and Evaluation of AES Encryption Circuits with Various S-Box Implementations,
   Taosong Zhao, Hiroki Nishikawa, Xiangbo Kong and Hiroyuki Tomiyama
3. [17:00] **(Invited)** Verification of Content Addressable Memory-based massive-parallel SIMD matriX core,
   Kyosuke Kageyama

Tuesday, August 29

10:00-11:00 Registration (5th Floor, Rohm Plaza)

11:00-12:00 Session 3 (Conference Room, Rohm Plaza)
Chair: Xiangbo Kong
4. [11:00] Analysis of Fertilization Effects on Rice and Wheat by Time-Series Clustering of Vegetation Index Data,
   Taichi Ito, Ken'Ichi Minamino and Shintaro Umeki
5. [11:20] Facial Expression Recognition with Face Mask using Attention Mechanism,
   Hayashi Shunsuke, Ono Yuga, Ishibashi Ryuto, Lin Meng and Li Qi
6. [11:40] A comprehensive survey on object detection YOLO,
   Xiangheng Wang, Hengyi Li, Xuebin Yue and Lin Meng

12:00-13:10 Lunch

13:10-14:30 Session 4 (Conference Room, Rohm Plaza)

Chair: Hiroki Nishikawa
1. [13:10] Ball Touching Net Detection Using Piezoelectric Element in Table Tennis,
   Ruisheng Xu, Ami Tanaka, Xiangbo Kong and Hiroyuki Tomiyama
2. [13:30] Classification of Rush-Out Risk of Pedestrians in Blind Area Using 2.4 GHz FMCW Radar,
   Ryosuke Iida, Kazuhide Kamiya, Xiangbo Kong and Kenshi Saho
3. [13:50] **(Invited)** Deep Learning Model Optimization and Acceleration,
   Hengyi Li

14:30-14:50 Break

14:50-16:10 Session 5 (Conference Room, Rohm Plaza)

Chair: Kota Yoshida
1. [14:50] Classification of Behaviors Related to Bed-Leaving and Bed-Lying Using Millimeter-Wave FMCW Radar,
   Shuhei Hashimoto, Xiangbo Kong, Kosuke Manabe, Hiroshi Minematsu and Kenshi Saho
2. [15:10] In/Out Judgement by Ball Tracking in Table Tennis,
   Yuta Fujihara, Xiangbo Kong, Ami Tanaka, Hiroki Nishikawa and Hiroyuki Tomiyama
3. [15:30] Drone path planning method to reduce energy consumption,
   Takuto Maejima, Xiangbo Kong, Tomoyasu Shimada, Hiroki Nishikawa and Hiroyuki Tomiyama
4. [15:50] Faster Depth Estimation for Autonomous Flying Drones,
   Takuya Kosaka, Xiangbo Kong, Tomoyasu Shimada, Hiroki Nishikawa and Hiroyuki Tomiyama

16:10-16:25 Award Ceremony and Closing Remarks (Conference Room, Rohm Plaza)

18:00-20:00 Banquet (Kusatsu Estopia Hotel)

Presenter Guidelines
1. To onsite presenters, please bring your computers to the conference for presentation. Use a break prior to your presentation to set up your computer and make sure everything works properly. Only HDMI port is supported.
2. The presentation consists of
   - Invited paper (Session 1): 25-minute presentation and 5-minute Q&A.
   - Regular paper (Other Sessions): 15-minute presentation and 5-minute Q&A.
3. To online presenters, Zoom URL will be announced via registered e-mail. Use a break prior to your presentation to set up your online presentation and make sure everything works properly.