



**Program of the 7th  
International Symposium on  
Advanced Technologies and  
Applications in the Internet of Things**

**ATAIT 2025**



# ATAIT 2025

The 7th International Symposium on Advanced Technologies and Applications in the Internet of Things (ATAIT 2025) will be held in Kusatsu, Shiga, Japan, Sept. 10-11, 2025. This conference is sponsored by the VLSI center of Ritsumeikan University and supported by the IEEE CEDA All Japan Joint Chapter. The conference provides an international forum for professionals, academics, and researchers to present the latest developments in IoT technologies and applications, including network, security, processor architecture, high-performance computing, image processing, computational acoustics, FPGAs, GPUs, etc. It particularly welcomes those emerging methodologies and techniques that bridge theoretical studies and applications on the Internet of Things. Novel quantitative engineering and science studies may be considered as well. All the accepted papers will be published at CEUR Workshop Proceedings.

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Wednesday, September 10

**13:00-17:00 Registration** (Rohm Plaza, 5th Floor)

Thursday, September 11

**9:00-9:30 Registration** (Rohm Plaza, 5th Floor)

**9:30-9:40 Opening Remarks** (Conference Room, Rohm Plaza, 5th Floor)

**9:40-10:20 Plenary Talk** (Conference Room, Rohm Plaza, 5th Floor)

**Chair:** *Lin Meng* / Ritsumeikan University

**Title:** Building energy efficiency retrofit: Informatics and AI approaches

**Prof. Zhou Wu** (Chongqing University)

**10:20-10:40 Coffee break**

**10:40-12:00 Session 1** (Conference Room, Rohm Plaza, 5th Floor)

**Chairs:** *Zhou Wu* / Chongqing University, *Kyosuke Kageyama* / Kindai University

1. [10:40] **Oracle Bone Inscription Detection with Multi-Branch Feature Fusion and Efficient Attention,**  
Jiaze Cai, Xuexue Zhu and Qi Li
2. [11:00] **Weed Species Identification Using Drones with Multispectral Cameras and Machine-Learning,**  
Shun Iriuda and Ken-Ichi Minamino
3. [11:20] **Improvement in Road Crack Detection Based on Multiple Attention Mechanisms,**  
Junqing Wang, Qi Li and Lin Meng
4. [11:40] **Open-Set Recognition with Scalable Rejection under Large-Class Scenarios,**  
Jing Yang, Bingbing Wu, Qi Li and Bang Li

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

**13:00-14:20 Session 2** (Conference Room, Rohm Plaza, 5th Floor)

**Chairs:** *Hengyi Li* / Zhongyuan University of Technology, *Xiangbo Kong* / Toyama Prefectural University

1. [13:00] **Prediction of Yield Fluctuations Caused by Extreme Weather in Greenhouse Tomato Cultivation,**  
Reo Kamiyama and Ken'Ichi Minamino
2. [13:20] **Best-acceleration filter for moving object tracking,**  
Manami Seta and Kenshi Saho
3. [13:40] **Radical-Conditioned Diffusion Model for Oracle Bone Character Generation and Analysis,**  
Zengmao Ding, Xiaoping He, Xiao Li, Qi Li and Bang Li
4. [14:00] **Design and Development of a Lightweight YOLOv11-Based Model for UAV Image Recognition,**  
Yan Yan, Qi Li and Lin Meng

**14:20-14:40 Coffee break**

**14:40-16:00 Session 3** (Conference Room, Rohm Plaza, 5th Floor)

**Chairs:** *Bang Li* / Anyang Normal University, *Aravinda C V* / Middle East College

1. [14:40] **Ego-trajectory Estimation of Electric Wheelchair Using Millimeter-Wave Radar,**

- Ryuei Maruyama, Ryuto Terawake, Keiji Jimi and Kenshi Saho
2. [15:00] **Verification of Pulse Rate Estimation Accuracy for Human-recorder,**  
Daiki Nomura, Tsubasa Kinoshita, Takeshi Kumaki and Kyosuke Kageyama
  3. [15:20] **Evaluation of Zero Crossing Rate Method for Animal Ear-like Hazardous Sound Detection Device,**  
Miho Yamada, Futa Goto, Takeshi Kumaki and Kyosuke Kageyama
  4. [15:40] **Token Pruning within the Attention Mechanism for Efficient Vision Transformers,**  
Shuto Kusaki, Ryuto Ishibashi and Lin Meng

## **16:00-16:20 Coffee break**

## **16:20-17:20 Session 4 (Conference Room, Rohm Plaza, 5th Floor)**

**Chairs:** *Qi Li* / Ritsumeikan University, *Ami Tanaka* / Ritsumeikan University

1. [16:20] **Lightweight YOLOX-Based Object Detection with Structural Pruning for Edge Device Deployment,**  
Mikihisa Ishino and Lin Meng
2. [16:40] **Predicting Graduate Students' Industry Readiness Courses Using Big Data and a Recommendation Engine,**  
Aravinda C V, Mohamed Samiulla Khan, Anjum Zameer Bhat, Dhanalakshmi Venugopal and Dhivya Bino
3. [17:00] **Addressing Catastrophic Forgetting and Beyond: Key Challenges in Continual Learning,**  
Rui Teng, Aihui Wang, Hengyi Li, Jinkang Dong, Yao Yao and Xueying Hu

## **17:20-17:30 Closing Remarks (Conference Room, Rohm Plaza, 5th Floor)**

## **18:30-20:30 Banquet Award Ceremony**