2024 International Conference on Identification, Information and Knowledge in the Internet of Things

December 6th - 8th, 2024

Ritsumeikan University, Kusatsu, Shiga, Japan

IIKI 2024

The 12th International Conference on Identification, Information and Knowledge in the Internet of Things (IIKI 2024) will be held in Kusatsu, Shiga, Japan, December. 6-8, 2024. IIKI 2024 has always been a unique event that realizes the full potential of the Internet of Things (IoT) requires solving technical and business challenges including the identification of things, the organization, integration and management of big data, and the effective use of knowledge-based decision systems. These challenges, and more, are the focus for the International Conference on Identification, Information and Knowledge in the Internet of Things (IIKI) international conference series. IIKI 2024 provides a dedicated forum for international experts to discuss current trends, challenges, and state-of-the-art solutions in the Internet of Things, and digital economy, digital Fintech.

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Contact

IIKI Secretariat

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Friday, December 6

8:30–9:30 Registration (Rohm Plaza, 5th Floor)

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

9:40–10:30 Keynote Speech (Conference Room, Rohm Plaza, 5th Floor)

Chair: *Yunchuan Sun* / *Beijing Normal University*

Title: Biomechanical feedback systems for elite sports coaching

Prof. *Anton Kos* / *University of Ljubljana*

10:30–10:40 Coffee Break

10:40–11:40 Session 1 (Conference Room, Rohm Plaza, 5th Floor)

Chair: *Anton Kos* / *University of Ljubljana*

1. [10:40] **The Transformer Enhanced Feature Representation with CNNs, (2)**
   Hengyi Li, Aihui Wang, Shengda Gao, Yan Wang, Yongping Dan and Shiyong Geng
2. [10:55] **Enhancing Transmission Efficiency in Vision Transformer Edge Computing via Token Clustering, (3)**
   Qi Li and Lin Meng
3. [11:10] Invited Talk: **Detecting insider trading using artificial intelligence, (83)**
   Yezhou Sha
4. [11:25] **Privacy-Preserving Blockchain Transactions Synthesis with Diffusion Generative Models, (56)**
   Yinchi Ge, Hui Zhang, Haohang Sun, Xuyao Zhai and Mingxin Wu

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11:40–13:00 Lunch Break

13:00–14:15 Session 2 (Conference Room, Rohm Plaza, 5th Floor)

Chair: *Feng Zeng* / *Central South University*

1. [13:00] **User interface design for orientation sensor-based biomechanical feedback in golf, (24)**
   Val Vec, Sašo Tomažič, Anton Kos and Anton Umek
2. [13:15] **Adaptive Prediction of Online Learning Based On Machine Learning Algorithms, (12)**
   Qiang Yin, Xiaomei Yu, Lixiang Zhao and Yongqin Li

3. [13:30] **Distributed Learning for Gait-based Human Recognition, (60)**
Yingrui Geng, Menghao Yuan, Xiaoxu Wen, Yan Wang and Lin Meng

4. [13:45] **Research on causality extraction algorithm for medical text based on BERT and graph attention network, (48)**
Weilong Liu, Xv Zhang, Zhongguo Wang and Wenrong Zheng

5. [14:00] **A semantic ontology of acupoints in Traditional Chinese Medicine aligning with the Basic Formal Ontology, (21)**
Feifei Shi, Tao Zhu, Bo Ouyang and Huansheng Ning

14:15–14:30 Coffee Break

14:30–15:45 Session 3 (Conference Room, Rohm Plaza)

Chair: *Yezhou Sha* / *Capital University of Economics and Business*

1. [14:30] **Sybil attack simulation on Enhanced self-governed Identity-Augmented Proof-of-Stake with different network topology, (51)**
Shengyu Chen, Shenghao Jin, Yigang Wei and Hui Zhang

2. [14:45] **Neighborhood Subgraph-based Illegal Transaction Detection in Cryptocurrency Networks, (53)**
Shenghao Jin, Qiwen Yang, Shengyu Chen and Hui Zhang

3. [15:00] **Intelligent Dialogue Method for Educational Applications Based on Improved Large Models, (6)**
Qiurui Sun and Dong Yang

4. [15:30] Invited Talk: **Does Art Add Value in Portfolio Investment? Evidence from China, (16)**
Ping Li, Xuechuan Huang, Dong Wang and Jianing Xu

5. [15:45] Invited Talk: **Supply Chain Concentration and Firm Risk-Taking, (4)**
Yu Lu

15:45–16:00 Coffee Break

16:00–17:30 Panel Discussions

17:30–17:40 Summary and Closing

Saturday, December 7

9:00-9:50 Keynote Speech (Conference Room, Rohm Plaza, 5th Floor)

Chair: *Junhuan Zhang* / *Beihang University*

Title: Soft Robotics Approach and IoT Technology for the Food Industry Automation

Prof. *Zhongkui Wang* / *Ritsumeikan University*

9:50-10:00 Coffee Break

10:00-11:15 Session 4 (Conference Room, Rohm Plaza, 5th Floor)

Chair: *Zhongkui Wang* / *Ritsumeikan University*

1. [10:00] **Detecting Redirected Curvature Gain Thresholds in Vehicle-based VR Environments, (55)**
   Rui Jing, Hongqiu Luan, Wanxiang Sha, Wei Gai and Chenglei Yang

2. [10:15] **Risk-Averse Trader: A Deep Reinforcement Learning-Based Portfolio Optimization Method for Risk-Averse Investors, (20)**
   Min Yang, Yi Hu and Jin Wang

3. [10:30] **A New Genre of Content Creation: Combining Mixed Reality Technology and Handicraft, (52)**
   Mingchuan Ren, Qinghong Miao, Wei Gai, Gaorong Lv, Cun Ji, Dongli Li and Chenglei Yang

4. [10:45] **The Role of VR Serious Games in Emotion Regulation: An Empirical Evaluation, (29)**
   Yawen Zheng, Xinlei Liu, Xiangxian Li, Juan Liu, Yulong Bian and Chenglei Yang

5. [11:00] **Innovative Applications of AI and 3D Printing in Digital Dentistry: Enhancing Accuracy and Efficiency in Dental Care, (99)**
   Giovanni Martinez, Kevin Huang and Yu Bai

11:15-13:00, Lunch

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

Chair: *Hengyi Li* / *Zhongyuan University of Technology*

1. [13:00] **YOLO Loss Optimization for Detecting Fruit Defects, (64)**
   Atsuki Matsui and Lin Meng

2. [13:15] **Vulnerability and profitability of block reorganization in Ethereum 2.0, (7)**
   Haodong Wang and Junhuan Zhang

3. [13:30] **Research and Practice on the Construction of an IoT-based Intelligent Teaching Environment in Universities, (79)**
   Hongbo Yang and Chaopeng Ma

4. [13:45] **A Multi-Factor Time Series Forecasting Model for Tax Revenue Based on Hybrid Deep Neural Networks, (57)**
   Cuiling Zhu, Mingyuan Hu, Tantan Liang and Chengwei Yang

5. [14:00] Invited Talk: **Spillover effects between Chinese art, stock and bond markets, (30)**
   Peiyue Luo, Ping Li and Xuechuan Huang

14:15-14:30 Coffee Break

14:30-16:00 Session 6 (Conference Room, Rohm Plaza, 5th Floor)

Chair: *Chengyan Zhao / Ritsumeikan University*

1. [14:30] **Bridge digital divide gap between digital technology and elders leveraging LLM AI, (1)**
   Jianqi Wang and Yi Li

2. [14:45] **Adversarial Attacks on IoT Systems Leveraging Large Language Models, (26)**
   Weijie Shan, Teng Long and Zhangbing Zhou

3. [15:00] **Short Text Matching Enhanced by Contextual Template for Large Language Models in Data Exchanging Systems, (23)**
   Dong Yang and Qiurui Sun

4. [15:15] Invited Talk: **Investor sentiment in gold and gold futures market: Evidence from ChatGPT-generated sentiment index, (8)**
   Yunchuan Sun, Ying Xu, Betty Simkins, Haifeng Hu and Yudong Qi

5. [15:30] Invited Talk: **Firm-level Investor Sentiment and Stock Price Response to Earnings Announcements: Evidence from Chinese Social Media, (11)**
   Yunchuan Sun, Xiaoping Zeng, Yuhan Gan, Haifeng Hu and Yudong Qi

6. [15:45] Invited Talk: **Emotion and Financial Behavior on Decentralized Social Platforms: Applications of Large Language Models and Visualization Analysis, (59)**
   Shuxi Liang, Cong Ma, Haolin Ren, Jin Hu, Xuan Yang and Daning Hu

16:00-16:15 Coffee Break

16:15-17:45 Session 7 (Conference Room, Rohm Plaza, 5th Floor)

Chair: *Xiangbo Kong / Toyama Prefectural University*

1. [16:15] **Attention Distillation for Accuracy Improvement of Vision Transformer, (66)**

   Taiga Tanaka, Ryuto Ishibashi and Lin Meng

2. [16:30] **Multi-temporal time window based path optimization for smart recycling bin removal vehicles, (58)**
   Chengwei Yang, Xaingqiang Meng, Cuiling Zhu, Mingyuan Hu, Tantan Liang and Guanying Ma

3. [16:45] **Efficient Passionflower Recognition via Structured Pruning-Based Model Compression, (19)**
   Zhongyu Wang, Zhenling Su and Lin Meng

4. [17:00] **Objective quality assessment of generated high-resolution human face images, (32)**
   Jiacheng Gu, Ding Yue, Shaode Yu, Peng Zhang and Qiurui Sun

5. [17:15] **A survey on the development and application of YOLOv5 in the Internet of Things, (33)**
   Liyao Mei, Junyu Zhang and Teng Long

6. [17:30] **A Review of Wearable Gait Recognition: Techniques, Methods, and Future Trends in Biometric Authentication, (94)**
   Chenggang Lu, Xiaoxu Wen, Zhengqing He, Ruixiang Hu, Yingrui Geng and Yan Wang

18:00-20:00, Banquet Award Ceremony

Sunday, December 8

9:00-17:00 Technical tour (IIKI 2022)

Presenter Guidelines

1. The presentation consists of
   - Keynote Speech: 30-minute presentation and 20-minute Q&A.
   - Regular Section: 12-minute presentation and 3-minute Q&A.
2. 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.

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URL: ①https://zoom.us/ ②https://zoom.com.cn/download (Author in China)

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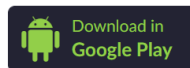
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1. Joining via the link

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   Meeting ID: 456 354 5448

   Password: 9XMZpU

2. Joining via a web browser (https://zoom.us/)
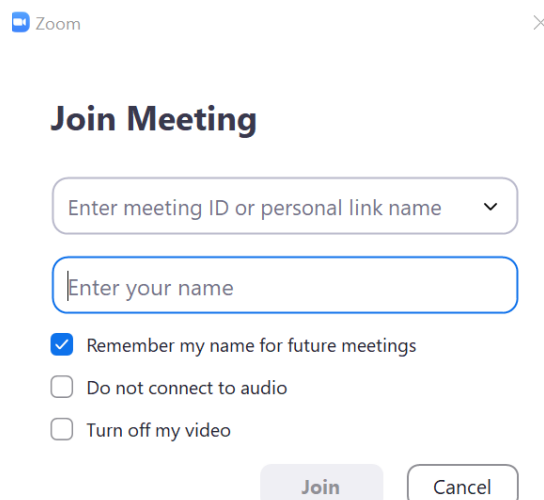
   Type the meeting ID or personal link name and click Join.

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   Join

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3. Joining the meeting via Zoom client

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14

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Note: Zoom instructions for joining a meeting can be found here:
https://support.zoom.us/hc/en-us/articles/206618765-Zoom-Video-Tutorials.

➤ **Functionality of Zoom in the Meeting**

The Zoom Menu Bar appears at the bottom of the Zoom window once the meeting begins. If you can't see the menu bar, move your mouse slightly and the bar will appear. (The bar disappears after a few seconds when in full-screen mode.)

With the Zoom Menu Bar, you are able to:

1. Mute/Unmute your audio. You can also select your audio input here by clicking the up arrow next to the microphone icon.

2. Start/Stop your video. You can also select your video input here by clicking the up arrow next to the video camera icon.

3. Invite more people to join by email, IM, or meeting ID.

4. Open/Close a window of a list of participants and related details. The participants list allows you to "raise your hand" to let everyone know you wish to speak and see who else has their hand raised. You can also easily mute/unmute yourself on the participants list.

5. Share your screen or select a specific application to share (e.g., Microsoft)

6. Send a message to one person (using private chat) or to all participants.

7. Record the meeting (if you have been granted permission).

8. Leave or end the video meeting.

Banquet

18:00-20:00, 7th Dec. 2024

Nadeshico Cafeteria

[Shiga, Kusatsu, Nojihigashi, 1–1–1 Ritsumeikan University c キューブ West Wing](#)

IIKI 2024 venue

Rohm Plaza, 5ᵗʰ Floor

Ritsumeikan University, Biwako-Kusatsu Campus (BKC)

1-1-1, Noji-higashi, Kusatsu, Shiga, 525-8577 Japan.

✧ **Recommended route to Ritsumeikan University from Kansai Airport (KIX)**

1. **Take a JR Line's limited express "Haruka" train to Kyoto station (80 min).**

   * You should buy a train ticket from **Kansai International Airport** to **Kyoto station**. To use Haruka train, you also have to pay for the seat.

   * Some trains **go directly** to **Minami-Kusatsu station**. If so, please ignore step 2.
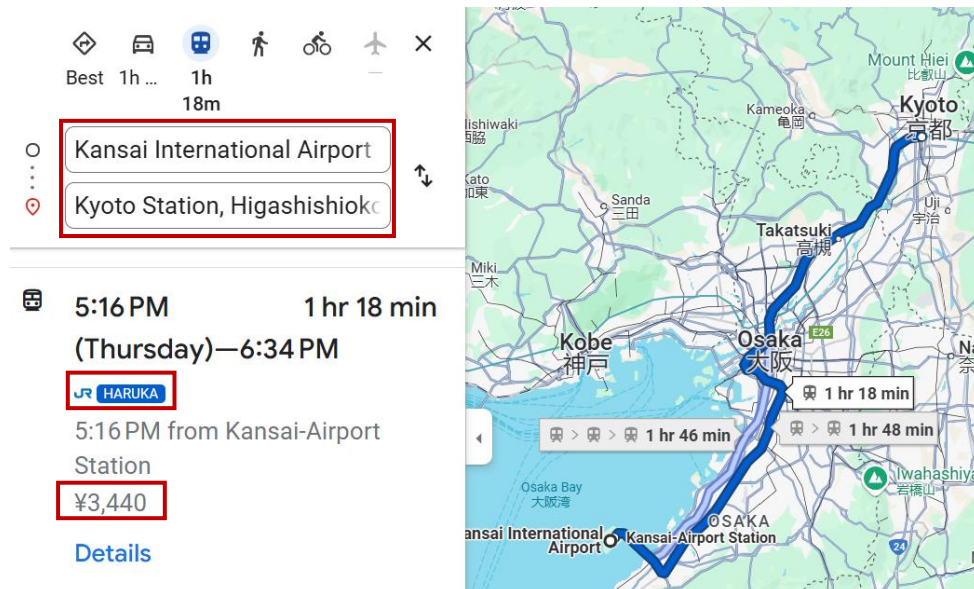

Figure. 1

2. **Transfer to the 2ⁿᵈ station of JR " Tokaido-Sanyo Line " and get off at Minami-Kusatsu station (20 min).**
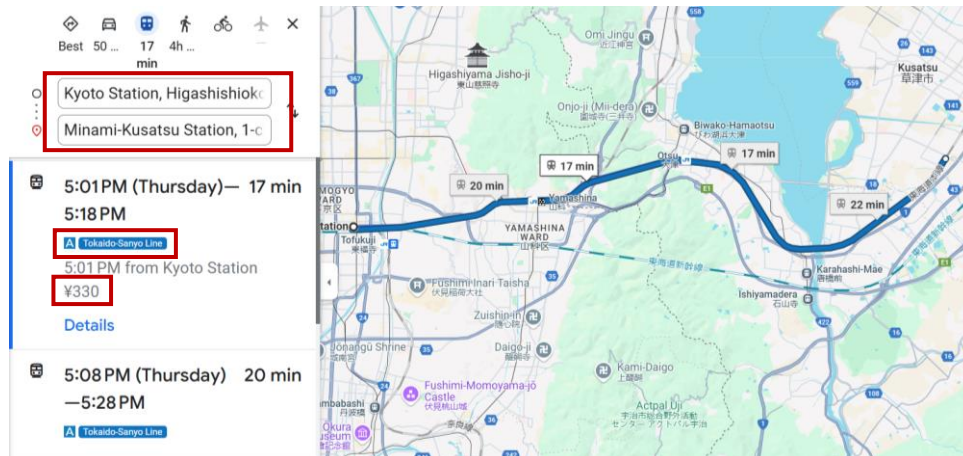

Figure. 2

From Kyoto station, please use trains on **Tokaido/Sanyo** line (also displayed as **Biwako line**) toward such as Yasu, Maibara, Nagahama, Kusatsu, or Ohmi-Shiotsu via Otsu, Ishiyama.

Please DO NOT use trains going to Kosei line(湖西線).

3. Take a bus to Ritsumeikan University (15 min).

From Minami-Kusatsu station, please use a bus heading for Ritsumeikan University (立命館大学) at **No.3** or **No.4** riding spot on the **east side of Minami-Kusatsu station**.
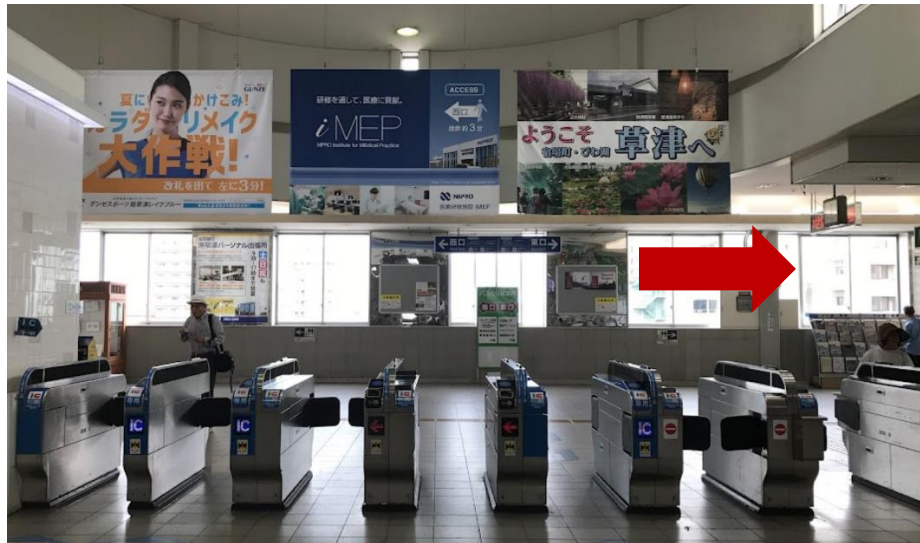

Figure. 3

Figure. 4

It is typically a 15 minute bus ride. You pay the fare (about **230 yen**) when you get off at the final stop. **Cash and IC cards (such as Suica, ICOCA) are accepted** (credit cards are not accepted). If you do not have the exact fare, you must use a change machine on the buses to make the exact fare. Please note that the change machines on the buses do not accept 5000 yen and 10000 yen bills.
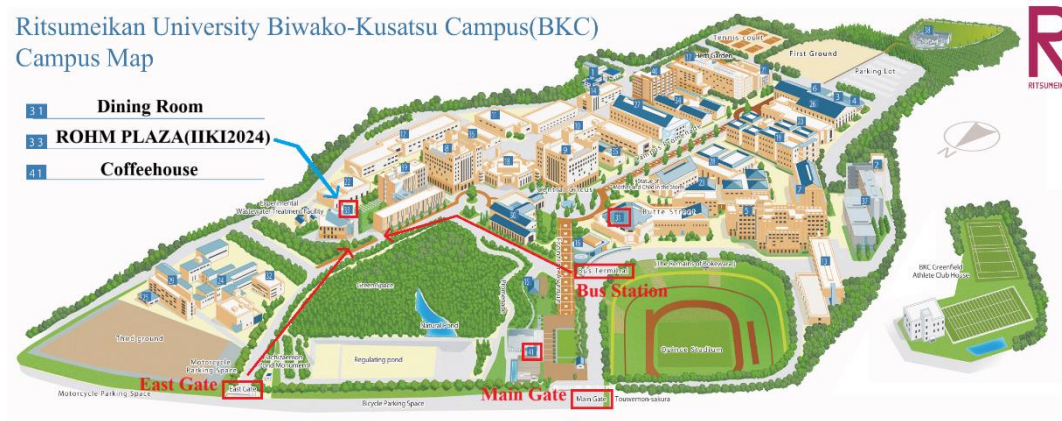
4. Ritsumeikan University Map

Figure. 5

Rohm Plaza in BKC (Google Streetview):

https://www.google.com/maps/@34.9839242,135.9645358,3a,75y,90.57h,107.39t/data=!3m6!1e1!3m4!1sD1E_oNv67KOxIxwrGtNlKg!2e0!7i13312!8i6656?hl=en&entry=ttu

BKC Campus Map:

https://www.ritsumei.ac.jp/~kore/jkcfe14/bkc-campusmap_e-1.pdf