

# GITW 2024 Program Global Information and Telecommunication Workshop December 20th-21st 2024 // Tokyo, Japan (Hybrid)



# Dec. 20th (DAY1) Map (Day 1)



Conference Venue Room 203/205, 2F, Bldg. 63, Nishi-Waseda Campus Waseda University, Nishi-Waseda Campus located at 3-4-1 Okubo, Shinjuku City, Tokyo, JAPAN.

### Presentation

Presentaiton time: 12min (Presentation 10min, and Discussion 2min)

### For on-site participants:

If you would like to use your latest version PPT file for your presentation, please bring your USB flash drive or laptop on the venue. On the other hand, the venue PCs will contain the submitted PPT files, so you can also use the submitted PPT file for your presentation.

### For online participants:

This workshop will use Zoom.

Therefore, we would like to ask you to share a screen of your PPT in your presentation.

### ZOOM

Room A: Meeting ID: 944 0997 0791 Passcode:464018 Room B: Meeting ID: 990 2674 3705 Passcode:221435

If you want to play slides with embedded audio, check the "Share sound" checkbox in zoom.



## Wi-Fi

SSID: waseda-event007 Password:S6xycH9e

On-site Lunch

Lunch boxes will be distributed at 63-204. 63-203/205 for students, 63-204 for faculties.

# **Reception Party**



18:00-19:30 Cucina Caffe OLIVA https://cucina-caffe-oliva.jp map https://g.co/kgs/Tqq9HxP



|  | Welcome Speech   |   |  |  |  |  |  |  |
|--|--|---|--|--|--|--|--|--|
|  |  | 9:00-9:05 Prof. Shigeru Shimamoto (Director of GITI, Waseda University)   |  |  |  |  |  |  |
|  | 9:05-9:20 Prof. Naoaki Yamanaka (President of IEICE)   |   |  |  |  |  |  |  |
|  |  | Group Photo Shooting  |  |  |  |  |  |  |
|  |  | 9:20-10:45 Introductions of Participant Universities (in coordination)  |  |  |  |  |  |  |
| Opening Introduction from Co-Organizers, Prof. Mina Rho, Head of the Department of Computer Science, Hanyang University      |  |   |  |  |  |  |  |  |
|  |  | ntroduction from Co-Organizers, Sheng Zhou, Head of Institute of Communications, Dept. EE, Tsinghua University (4min)                 |  |  |  |  |  |  |
| 9:00-10:45   |  | Introduction from Co-Organizers, Prof. Fang-Jing Wu (National Taiwan University) (4min)   |  |  |  |  |  |  |
|  |  | Introduction from GITW Session Universities:  |  |  |  |  |  |  |
| (Bldg.63, 2F, Room 203)  | Shanghai Jiaotong University; Zhe Jiang University; Yangzhou University; SouthWest Jiaotong University; Institut Teknologi Sepuluh Nopember (ITS); |   |  |  |  |  |  |  |
| (Zoom Room A)  | U  | University of Cambridge; Khalifa University; University de Lille  |  |  |  |  |  |  |
| ,  | (3min per each university)   |   |  |  |  |  |  |  |
|  | Introduction from ASPIRE Session Universities:   |   |  |  |  |  |  |  |
| Keio University, University of Houston, Norwegian University of Science and Technology, Queen's University Belfast, Memorial |  |   |  |  |  |  |  |  |
|  | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,  | University, University of California, Davis   |  |  |  |  |  |  |
|  | (3min per each university)   |   |  |  |  |  |  |  |
| Keynote  | 10:45-11:00  | Globalization via Regionalization Professor ZhiSheng Niu (Tsinghua University)  |  |  |  |  |  |  |
| Session  | 10.45-11.00  |   |  |  |  |  |  |  |
| 10:45  | 11:00-11:15  | Hybrid Quantum-Classical Machine Learning/Optimization for 6G Prof. Trung Q. Duong (Queen's university Belfast / Memorial University) |  |  |  |  |  |  |
| (Bldg.63, 2F, Room 203)  | 44.45.44.00  | EarID CAN: A Novel Biometric Inspired Continuous, Active and Non-Intrusive Authentication via Acoustic Ear Scanning                   |  |  |  |  |  |  |
| (Zoom Room A)  | 11:15-11:30  | Prof. Miao Pan (University of Houston)  |  |  |  |  |  |  |

11:30-13:00

Lunch Break (63-203/205 for students, 63-204 for faculties), Lunch boxes will be distributed at 204.

|                                | GITW Session 1A (Bldg. 63-203) (ZOOM Room A)<br>Topics 1A Wireless Communication<br>Chair: Fang-Jing Wu ,National Taiwan University) |                        |  |   |   | ASPIRE Session 1B (Bldg.63-205) (ZOOM Room B)<br>Topics 1B Mobile communications, ISAC<br>Chair: Yue Yin , KEIO University |  |  |  |
|--------------------------------|--|------------------------|--|---|---|--|--|--|--|
|                                | 1 Md. Abir Hossain   |                        | Analysian American Science and Technology University Science and Technology University Science American American Science American American Science American Amer |   | Greetings from Prof. Shimamoto (Waseda Univ.) and Prof. Otsuki (Keio Univ.) |  |  |  |  |
| ession<br>1<br>13:00-<br>15:00 | 2  | Yaodan Xu              | Tsinghua University  | Joint Optimization of Offloading, Batching<br>and DVFS for Multiuser Co-Inference   | Sebastian G.<br>Groesvik  | Norwegian University<br>of Science and<br>Technology   | Parameterizing 5G New Radio: A<br>Comparative Measurement Study on<br>Throughput and Delay                       |  |  |
|                                | 3  | Haowei Cheng           | Waseda University  | A Systematic Literature Review of<br>Generative AI in Requirements Engineering  | Nathanael<br>DANSO-<br>NTIAMOAH   | Memorial University  | Learned Target Reflection Coefficient<br>Estimation Techniques for RIS-assisted<br>ISAC Systems                  |  |  |
|                                | 4  | Ruiqing Mao            | Tsinghua University  | DiffCP: Ultra-Low Bit Collaborative<br>Perception via Diffusion Model   | Wei Dai   | KEIO University  | A Clustering-Aided Optimization Algorithm<br>for Antenna Beamforming in Multi-Cell<br>HAPS Systems               |  |  |
|                                | 5  | OUCHI Hayate           | Waseda University  | Investigation of Ionospheric Condition<br>Estimation and Representation<br>Methods from a Communication<br>Perspective  | Alice Faisal  | Memorial University  | DRL for Optimizing RIS-assisted FD<br>Systems  |  |  |
|                                | 6  | l Putu Dody<br>Lesmana | Institut Teknologi<br>Sepuluh Nopember   | Ensemble Stacking Deep Convolutional<br>Neural Networks for<br>Classification and Morphological Analysis of<br>Mosquito Genera Based on Multi-View<br>Larvae Images | Khin Than Htay  | Waseda University  | Communication between Space Elevator<br>Atmospheric Station and Ground Stations                                  |  |  |
|                                | 7  | Zhuolong Li            | SouthWest Jiaotong<br>University   | Research on Wide-Area Mobile Target<br>Tracking and<br>Positioning in Complex Electromagnetic<br>Environments   | Aseni<br>Chamandika<br>Jayarathne   | Memorial University  | Low-Complexity Detection Algorithms for<br>RIS-assisted ISAC Systems.  |  |  |
|                                | 8  | Shazana Dhiya<br>Ayuni | Institut Teknologi<br>Sepuluh Nopember   | Design and Analysis of a 2.45 GHz Rectenna<br>for Maximizing Wireless Power Transfer<br>Efficiency  | Mondher<br>BOUAZIZ  | KEIO University  | A New Multi-Dimensional Semantic<br>Communication Approach for Personalized<br>Visualization of Shared Knowledge |  |  |

|                      |  |                        |  | Efficiency  |  |  | visualization of Shared Knowledge   |  |  |  |
|----------------------|--|------------------------|--|---|--|--|---|--|--|--|
| 15:00-<br>15:30      |  | Session break (30 min) |  |   |  |  |   |  |  |  |
|                      |  |                        | Topics 2A Digital Con                  |   | ASPIRE Session 2 B (Bldg.63-205) (ZOOM Room B)<br>Topics 2B Non-terrestrial communications |  |   |  |  |  |
|                      | Chair: Sheng Zhou, Tsinghua University |                        |  |   |  | Chair: Tu Dac Ho, Norwegian University of Science and Technology |   |  |  |  |
|                      | 1                                      | Jiaqian XIE            | WASEDA Univeristy                      | Scaled Weight-Sharing Convolutional<br>Network for Memory-Efficient Video Frame<br>Prediction   | Thomas Zinner  | Norwegian University<br>of Science<br>and Technology             | Towards Efficient Resource Dimensioning<br>in QoE-Aware Beyond 5G Networks  |  |  |  |
|                      | 2                                      | Yi-Chia CHEN           | National Taiwan<br>University          | Combining Present-Only and Present-<br>Absent Data with Pseudo-Label Generation<br>for Species Distribution Modeling                                | Riku NAGASE  | KEIO University  | Max-Min Strategy for Handover in LEO<br>based Non-Terrestrial Networks  |  |  |  |
| Session              | 3                                      | Mohamad Zaki<br>Azizi  | Institut Teknologi<br>Sepuluh Nopember | Driving Innovation: The Role of Digital<br>Transformational Capability and<br>Organizational Ambidexterity in the<br>Automotive Components Industry | Kazutoshi<br>Yoshii  | Waseda University  | Interference Fading Analysis by Multiple<br>Waves Superposition<br>on Ionospheric Propagation Simulation                  |  |  |  |
| 2<br>15:30-<br>17:30 | 4                                      | Dingjie PENG           | WASEDA Univeristy                      | Waveformer: Innovative Token Mixing for<br>Plug-and-Play Image Restoration  | Yue Yin  | KEIO University  | Joint Optimization of UAV Deployment and<br>NOMA Power Allocation for<br>Multi-UAV-Assisted Emergency Caching<br>Networks |  |  |  |
|                      | 5                                      | Mohammad<br>Rahman     | Federation University<br>Australia     | Enhancing Soil Organic Carbon Estimation<br>Using<br>Sequential Band Selection with 1D-CNN  | Sicong Li  | Waseda University  | DRL-based dynamic UAV multi-cell<br>resource allocationoptimization   |  |  |  |
|                      | 6                                      | Usama Khalid           | Hanyang<br>University,Seoul            | Real-Time Biometric Obfuscation for<br>Enhanced<br>Digital Privacy using YOLOv8n and U-Net  | Siyuan Yang  | KEIO University  | Model-Based DRL for Dynamic Antenna<br>Beamforming in HAPS Communication<br>System  |  |  |  |
|                      | 7                                      |                        |  |   | IAHMED AL-<br>HABOB  | Memorial University  | Network Slicing for Unmanned Aerial<br>Vehicle Networks   |  |  |  |
|                      | 8                                      | Dony Hutabarat         | Institut Teknologi<br>Sepuluh Nopember | A CNN-Based Obstacle Avoidance System<br>for Electric Wheelchairs Using LiDAR and<br>Thermal Camera   | Selma Yahia  | University de Lille  | Dynamic 3D UAV Placement Optimization:<br>Improved Bonobo<br>Optimizer for Enhanced Coverage and<br>Communication         |  |  |  |

Online presentation

Onsite presentation

# Dec. 21st (DAY2) Map (Day 2)



#### Conference Venue Room A and B, 1F, Bldg. 62 Nishi-Waseda Campus Waseda University, Nishi-Waseda Campus located at 3-4-1 Okubo, Shinjuku City, Tokyo,

JAPÁN.

### Presentation

Presentaiton time: 12min (Presentation 10min, and Discussion 2min)

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### Wi-Fi

SSID: waseda-event007 Password:S6xycH9e

On-site Lunch

62-RoomA for students, 62w 1st floor "Morimura memorial lounge" for faculties), Lunch boxes will be distributed front of RoomA

# Dinner and Awards Ceremony



16:30-18:30 Rohm Square, 1F Bldg. 63, Nishi-Waseda Campus



|                 |   | GITW                                      | Session 3A (Bldg. 62-Large M<br>Topics: IoT S<br>Chair: Toshitaka Tsuda |   | ASPIRE Session 3B (Bldg. 62-Large Meeting room B) (ZOOM Room B)<br>Topics 1B Security and Al, Vehicular network<br>Chair: Zhenni Pan, Waseda University |                             |   |  |
|-----------------|---|---|---|---|---|-----------------------------|---|--|
|                 | 1 | Windi Eka Yulia<br>RETN <mark>AN</mark> I | Institut Teknologi Sepuluh<br>Nopember                                  | Augmenting Code Smell Using Generative<br>Adversarial Network As a Mean To Solve<br>Imbalance Dataset                                 | Quazi Mamun   | Charles Sturt<br>University | The Internet of Behavior (IoB): Transforming Human<br>Interaction in the Digital Age  |  |
|                 | 2 | Joko Supriyono                            | ITS ( Institut Teknologi<br>Sepuluh Nopember)<br>Indonesia              | TE-LSTM: Enhancing Maintenance Strategy<br>from Winding Temperature Prediction for<br>Induction Motors in the Oil and Gas<br>Industry | Abdulmohsen<br>Alsaui   | Memorial University         | When are Quantum Algorithms Applicable for Signal<br>Decoding in Wireless Communication?  |  |
| ession          | 3 | Zecheng Li                                | Zhejiang University   | Point Cloud Generation Method for 3D<br>Perception using Monocular Images and<br>Radar  | Muhammad Rana   | Charles Sturt<br>University | Securing IoT Networks: A Lightweight Cryptographic<br>Solution for Society 5.0  |  |
| 3               | 4 | JIN Yuxuan                                | Waseda University   | Non-Contact Monitoring of Physiological<br>Parameters Using Wi-Fi Frequency Bands   | Megumi Saito  | Waseda University           | D2D Transmission Scheme in Emergency Situation fo<br>Mobile Networks  |  |
| 9:30-<br>11:30  | 5 | Heyi Zhang                                | Shanghai Jiao Tong<br>University  | BPDL: Toward Byzantine-resilient and<br>Privacy-preserving Distributed Learning   | Md Mujibur<br>Rahman  | Charles Sturt<br>University | Federated Learning for Secure Spatial Crowdsourcing<br>by Leveraging 6G Communication Technology                                    |  |
|                 | 6 | Kazuma Uesugi                             | Waseda University   | Comparison of Simulation and<br>Experimental Results in OAM Multiplexing<br>with Misalignment-Induced Degradation                     | Huan Wang   | Waseda University           | Effects of Driving Behavior-Oriented On-street Parkin<br>Schemes on<br>Traffic Efficiency within Urban Road Networks                |  |
|                 | 7 | Minseo KIM                                | HANYANG University  | Compositional Video Understanding with<br>Spatiotemporal Structure-based<br>Transformers  | Md Ershadul<br>Haque  | Charles Sturt<br>University | Novel quantum circuit for image compression utilizing<br>block partitioning and zero connection discarded<br>approach               |  |
|                 | 8 | AHMED AL-<br>HABOB                        | Memorial University of<br>Newfowndland                                  | Network Slicing for Unmanned Aerial<br>Vehicle Networks   | Yuki Uetake   | Waseda University           | Analysis of V2X Communication Performance through<br>the Implementation of Fixed Assignment Window<br>Access with Diversity and SIC |  |
| 11:30-<br>13:00 |   |   | Lunch Break (62-Room  | A for students, 62w 1st floor "Morimura men   | norial lounge" for fa   | culties), Lunch boxes w     | vill be distributed front of RoomA  |  |

|                 |   | GITW Sessio                      | on 4A (Bldg. 62-Large Meeting roo<br>Topics: Machine Learning a<br>Chair: Wu Jun , Waseda Univ | nd Al  | ASPIRE Session 4B (Bldg. 62-Large Meeting room A) (ZOOM Room B)<br>Topics 1B Image Processing, Healthcare, Security<br>Chair: Quazi Mamun, Charles Sturt University |                          |   |  |
|-----------------|---|----------------------------------|--|--|---|--------------------------|---|--|
|                 | 1 | Hyeonseok An                     | Hanyang university   | DeCo-YOLOs: Deformable Convolution   | Hiroshi Katada  | Waseda University        | Performance Analysis of Bio-inspired Load Balancing Routing for<br>Wireless Multi-hop Network   |  |
| Session         | 2 | Rahmatika Jagad<br>Pramundito    | Institut Teknologi Sepuluh<br>Nopember   | Development of a System Dynamics Model<br>for Policy Formulation on Investment<br>Feasibility in Corn Land Intensification in<br>East Java | Md Mehedi Hasan   | Charles Sturt University | Adaptive Adversarial Attack and Defence Algorithm for Network<br>Intrusion Detection Systems (A3D-NIDS)   |  |
| 4<br>13:00-     | 3 | Hyeonmin Mo                      | HANYANG University   | RCFuzzer: Reinforcement learning-based<br>Collaborative Fuzzer   | Joy Dutta   | Khalifa University       | Transforming Future Healthcare with IoMT and Edge Computing: An<br>Ethical and Transparent Approach to Predictive eHealth                       |  |
| 14:30           | 4 | Tegar Ganang Satrio<br>Priambodo | Sepuluh Nopember Institute of<br>Technology (ITS)  | Ensemble-based Fraud Detection with<br>Imbalanced Data of Indonesian<br>Administrative Health-Records                                      | Faranak TOHIDI  | Charles Sturt University | Efficient Dynamic Point Cloud Compression Through Adaptive<br>Hierarchical Partitioning   |  |
|                 | 5 | Mao WANG                         | WASEDA University  | Real-Time Data Fusion for PD-ISAC based<br>on Zadoff-Chu OFDM  | Hossien Eldeeb  | University of Cambridge  | Toward Advanced eHealth with Explainable AI: Blockchain-Secured<br>Systems Featuring AI-Driven Block Sensitivity for Adaptive<br>Authentication |  |
|                 | 6 | Mohammad Ovi Sanjaya             | Institut Teknologi Sepuluh<br>Nopember   | Conv1D-BiLSTM: A Deep Learning-Based<br>Multivariate Model for Multi-Step Stock<br>Index Forecasting                                       | Liu Chenyang  | Waseda University        | A Study of Pathological Symptoms Detection Employing Voice<br>Analysis towards Daily Healthcare   |  |
| 14:30-<br>15:00 |   |                                  |  | Session  | n break (30min)   |                          | 1   |  |
|                 |   | GITW Sessio                      | n 5A (Bidg. 62-Large Meeting roo   | om A) (ZOOM Room A)  |   | GITW Session 5B (Bldg    | . 62-Large Meeting room B) (ZOOM Room B)  |  |

|                      | GITW Session 5A (Bidg. 52-Large Meeting room A) (200M Room A)<br>Topics: Wireless Communication and Al<br>Chair: Dong-Kyu Chae, Hanyang University |               |                            |   |            | GiTW Session 5B (Bldg. 62-Large Meeting room B) (200M Room B)<br>Topics: Vehicular System and Autonomous Driving<br>Chair: Jiang Liu, Waseda University |  |  |
|----------------------|--|---------------|----------------------------|---|------------|---|--|--|
| Session              | 1  | Keita IZAWA   | WASEDA University          | A Consideration on Applying Fine-tuning to<br>Subjective Evaluation Estimation of Videos<br>to Reduce Subjects' Loads | Tan Chen   | Tsinghua University   | Mobility Accelerates Learning: Convergence Analysis on<br>Hierarchical Federated Learning in Vehicular Networks          |  |
| 5<br>15:00-<br>16:00 | 2  | Ruei En Liang | National Taiwan University | Semi-Supervised Learning for Stomata<br>Detection   | Mu Wang    | Yangzhou University   | An Efficient Cooperative Driving Scheme for Emergency<br>Vehicle Priority through V2X Communications                     |  |
| 16:00                | 3  | Ke ZHANG      | WASEDA Univeristy          | 3PS: Periodic Partial Policy Sharing for<br>Distributed Cooperative Multi-agent<br>Reinforcement Learning             | Yilun Hu   | Shanghai Jiaotong University  | Artificial Intelligence Empowered Generalizable Personalized Traffic<br>Detection<br>Against Advanced Persistent Threats |  |
|                      | 4  | chengdi jiang | Yangzhou University        | An Efficient and Safe Cooperative Driving<br>Strategy to Solve Road Deadlocks through<br>V2V Communication            | Simon Choi | Waseda University   | Constructing IoT Networks using a Microbial Fuel Cell  |  |

Online presentation Onsite presentation

16:30-18:30

Award Ceremony & Banquet (Rohm Square, 1F Bldg. 63, Nishi-Waseda Campus)