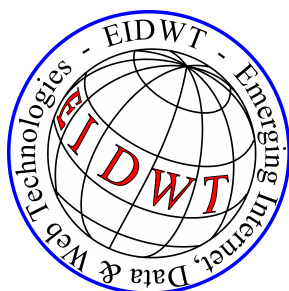


PROGRAM GUIDE

EIDWT-2025

The 13-th International Conference on
Emerging Internet, Data & Web Technologies



Virtual Conference (Hybrid conferences)

Kunibiki Messe, Matsue, Japan

February 26-28, 2025

Technically Supported by:



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Matsue City, Shimane Prefecture



TABLE OF CONTENTS

EIDWT-2025 Organizing Committee	2
Welcome Message of EIDWT-2025 International Conference Organizers	3
EIDWT 2025 Keynote Talk I	4
EIDWT 2025 Keynote Talk II	5
EIDWT-2025 Main Conference Program	6
Wednesday, 26 February, 2025	6
Lunch Break	6
Parallel Sessions	6
EIDWT-S1: Intelligent Algorithms for Wireless and Mobile Networking	6
EIDWT-S2: Web-based Systems and Applications	7
EIDWT-S3: Data Management and Information Retrieval	7
Coffee Break	7
Parallel Sessions	8
EIDWT-S4: VANETs and Robotic Systems	8
EIDWT-S5: Multimedia Systems and Medical Applications	8
EIDWT-S6: Machine and Deep Reinforcement Learning	8
Coffee Break	9
Welcome Reception Party	9
Thursday, 27 February, 2025	10
Lunch Break	10
Parallel Sessions	10
EIDWT-S7: Secure Systems and Attack Analysis	10
EIDWT-S8: Network Applications and Services	10
Coffee Break	11
Parallel Sessions	11
EIDWT-S9: IoT Applications and Energy-Efficient Systems	11
EIDWT-S10: Large Language Models and Applications	11
Coffee Break	12
Banquet Party	12
Friday, 28 February, 2025	12
Time Table	13

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Makoto Ikeda, Fukuoka Institute of Technology, Japan

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Leonard Barolli, Fukuoka Institute of Technology, Japan

Welcome Message of EIDWT-2025 International Conference Organizers

Welcome to the 13-th International Conference on Emerging Internet, Data and Web Technologies (EIDWT-2025), which will be held at Kunibiki Messe, Matsue, Japan, from February 26 to February 28, 2025.

The EIDWT is dedicated to the dissemination of original contributions that are related to the theories, practices and concepts of emerging Internet and data technologies yet most importantly of their applicability in business and academia towards a collective intelligence approach.

The conference topics are related to Data Modeling, Data Visualization, Data Mining, Databases, Knowledge Discovery, Semantics, Cloud Computing, IoT, Social Networks, Security Issues and other Web implementations towards a collaborative and collective intelligence approach leading to advancements of virtual organizations and their user communities. This is because Web implementations will store and continuously produce a vast amount of data, which if combined and analyzed through a collective intelligence manner will make a difference in the organizational settings and their user communities. Thus, the scope of EIDWT-2025 includes methods and practices which bring various emerging Internet and data technologies together to capture, integrate, analyze, mine, annotate and visualize data in a meaningful and collaborative manner. The conference will provide a forum for original discussion and prompt future directions in these research areas.

An international conference requires the support and help of many people. A lot of people have helped and worked hard for a successful EIDWT-2025 technical program and conference proceedings. First, we would like to thank all authors for submitting their papers. We are indebted to Program Committee members and reviewers who carried out the most difficult work of carefully evaluating the submitted papers. We would like to express our appreciation to our keynote speakers for accepting our invitation and delivering very interesting keynotes at the conference.

EIDWT 2025 Keynote Talk I



Prof. Euripides G. M. Petrakis, Technical University of Crete (TUC), Chania, Crete, Greece

Title: Microservices Scheduling with Kubernetes in Cloud and Fog Environments

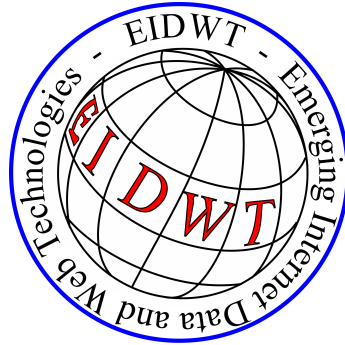
Abstract: The growing popularity of microservices architectures generated the need for tools that orchestrate their deployment in containerized infrastructures, such as Kubernetes (K8s). Services running in separate containers are packed in pods and placed in Virtual Machines (VMs) or nodes. Kubernetes schedules computing resources per application micro-services at runtime by applying a best-fit (heuristic) policy based on resource requests and user preferences. For applications with multiple communicating microservices, such as Service Oriented Architecture (SOA), deciding which microservices should be placed in the same node has a certain impact on both the running time and the operation cost of an application (in the cloud, end users are charged by the amount of resources consumed). The default Kubernetes scheduler is far from optimal in this case in terms of latency and resources consumed and easily results in increased costs for the end users. The problem can take many different forms depending on whether the K8s cluster is deployed in the same or different zones or regions of a cloud provider, and whether a re-scheduling decision needs to be taken. An interesting aspect of the same problem is K8s orchestration on cloudfogedge environments. Configuring a Kubernetes cluster for multiple applications is not a simple task especially if optimizing any or all the above factors (latency, resources, usage cost) is required. K8s scheduling can be static (the placement decisions do not change over the lifetime of an application time) or better be adaptive (the services can move to different nodes if deemed appropriate based on a set of known criteria). In this talk, various aspects of the problem and possible solutions are discussed respectively. Also, we present a unifying scheduling approach and model that encompasses different scheduling cases including the cloud-fog case.

EIDWT 2025 Keynote Talk II

Prof. Hiroaki Kikuchi, Meiji University, Tokyo, Japan

Title: Privacy Enhancing Technologies (PETs) Challenges for Healthcare Bigdata

Abstract: With the advanced technologies for ubiquitous computing, the large sensitive big data are valuable to explore the associations of data for epidemiology. New data privacy regulations allow sharing anonymization of data for relatively low cost than that of conventional cohort studies. In this talk, we explore Privacy Enhancing Technologies (PETs) toward secure and reliable healthcare bigdata sharing. Differential privacy technologies allow to provide theoretical guarantee against the record disclosure risks. We will discuss challenges for different privacy technologies from variety of threats.



EIDWT-2025

Main Conference Program

Wednesday, 26 February, 2025

EIDWT-2025 Keynote I

10:30-11:30 (UTC+9) Japan Standard Time

EIDWT-2025 Keynote Talk I

Prof. Euripides G. M. Petrakis: Microservices Scheduling with Kubernetes in Cloud and Fog Environments

Lunch Break

11:30-13:00 (UTC+9))

Parallel Sessions

13:00-14:30 (UTC+9) Japan Standard Time

EIDWT-S1: Intelligent Algorithms for Wireless and Mobile Networking

Chair: Keita Matsuo, Fukuoka Institute of Technology, Japan

1. Implementation of a Fuzzy-based System for Assessment of Tie Strength in Online Social Networks Considering Reciprocity as a New Parameter

Shunya Higashi, Phudit Ampririt, Ermioni Qafzezi, Makoto Ikeda, Keita Matsuo, Leonard Barolli

2. A Comparative Study of Various Mesh Router Replacement Methods for Middle-Scale WMN and Boulevard Distribution of Mesh Clients
Yusuke Irie, Paboth Kraikritayakul, Shinji Sakamoto, Makoto Ikeda, Keita Matsuo, Leonard Barolli
3. A Comparison Study of UNDX and SPX Crossover Methods Considering RDVM and FC-RDVM Router Replacement Methods for Two Islands Distribution of Mesh Clients
Paboth Kraikritayakul, Yusuke Irie, Phudit Ampririt, Admir Barolli, Shinji Sakamoto, Leonard Barolli
4. An Intelligent Fuzzy-based System for Handover in 5G/B5G Wireless Networks: Effects of Radio Access Technology Condition Parameter on Handover Decision
Phudit Ampririt, Shunya Higashi, Ermioni Qafzezi, Makoto Ikeda, Keita Matsuo, Leonard Barolli

EIDWT-S2: Web-based Systems and Applications**Chair: Yoshihiro Okada, Kyushu University, Japan**

1. Development of a Framework for Web-based Collaborative VR Tours Using Point Cloud Data
Yoshihiro Okada, Kosuke Kaneko, Wei Shi
2. Evaluation of Gaze Estimation Variance Considering Different Number of Web Cameras
Kiichi Honsho, Yurika Nagamori, Shinji Sakamoto, Taisuke Kawamata
3. A Web-Based Collaborative Virtual Reality Class for Gamified Learning of Chemical Molecules
Eduardo Seiti Yamatsumi, Yoshihiro Okada
4. A Web-based Online Lecture System using User Operation Synchronization
Masaki Kohana, Shusuke Okamoto, Masaru Kamada

EIDWT-S3: Data Management and Information Retrieval**Chair: Tomoki Yoshihisa, Shiga University, Japan**

1. Study on Extracting Keywords that Reveal the Value of Research Data Through Comparisons between Academic and Data Paper
Naoto Kai, Hayato Tomisu, Toshiki Shimbaru, Tomoki Yoshihisa
2. Similar Experimental Flow Search with Operation Grouping for Chemical Material Development
Hideya Yoshiuchi, Naoki Takeishi, Hidekazu Morita
3. BP-Pearson Residual for Detecting Outliers in Beta Regression Model
Oktsa Dwika Rahmashari, Wuttichai Srisodaphol
4. CDBER: A Method for Detecting Outliers in Linear-Circular Regression
Thunchanok Chaitongdee, Oktsa Dwika Rahmashari, Wuttichai Srisodaphol, Benjawan Rattana-wong, Khanuengnij Prakhamin

Coffee Break**14:30-15:00 (UTC+9)**

Parallel Sessions

15:00-16:30 (UTC+9) Japan Standard Time

EIDWT-S4: VANETs and Robotic Systems

Chair: Makoto Ikeda, Fukuoka Institute of Technology, Japan

1. FCRP: A Fuzzy-based Routing Protocol for Vehicular Opportunistic Networks and Its Performance Evaluation Considering Average Latency and Hop Count Parameters
Ermioni Qafzezi, Kevin Bylykbashi, Shunya Higashi, Phudit Ampririt, Keita Matsuo, Leonard Barolli
2. Performance Evaluation of an Enhanced Recovery Method Integrated with SpW and Epidemic Protocols in Vehicular DTN
Shura Tachibana, Makoto Ikeda, Leonard Barolli
3. V2X Communication based on Cellular Multi-Links Method for Autonomous Driving
Yoshitaka Shibata, Hiroyuki Ishii, Tadachika Minato, Shoichi Noguchi
4. An Optimization Method for Wide-area Monitoring Using Amphibious Robot
Toshiyuki Sato, Tetsuya Oda, Kenya Okage, Genki Moriya, Takeharu Sato, Kengo Katayama, Leonard Barolli

EIDWT-S5: Multimedia Systems and Medical Applications

Chair: Kosuke Takano, Kanagawa Institute of Technology, Japan

1. Reliability Calculation for Captured Images in Mobile Observation for Natural Environments
Yukito Seo, Kosuke Takano, Nobuya Watanabe, Kin Fun Li
2. A Multispectral Camera System for Augmented Reality Marker Detection
Yuma Yamashita, Tetsuya Oda, Kenya Okage, Takeharu Sato, Hideyuki Shimada, Leonard Barolli
3. Physique-aware Skilled Motion Decision System Based on Depth Camera and Skeletal Estimation
Kyohei Wakabayashi, Tetsuya Oda, Hideyuki Shimada, Leonard Barolli
4. Rehabilitation Support System based on Mixed Reality Technology
Naho Kuriya, Tomoyuki Ishida

EIDWT-S6: Machine and Deep Reinforcement Learning

Chair: Shinji Sakamoto, Kanazawa Institute of Technology, Japan

1. Data-Driven Peer Tutoring: Machine Learning for Effective Group Composition
Mattia Fonisto, Antonio Marino, Marcello Pelosi, Alberto Moccardi
2. Research on Patent Technology Recognition Based on Fusion Dependency Parsing and ALBERT-BiLSTM-CRF Model
Yujia Wang, Na Deng, Xu Chen
3. A Transformer Based Behavioral Control Method for Quadruped Robot
Kaiju Hasuoka, Tetsuya Oda, Kenya Okage, Genki Moriya, Masaharu Hirota, Hideyuki Shimada, Leonard Barolli
4. GRLfuzz: Gan-powered Fuzzing based on Deep Reinforcement Learning
Yuan Zhang, Baojiang Cui, Chen Chen

Coffee Break

16:30-17:00 (UTC+9)

Welcome Reception Party

17:00-19:00 (UTC+9) Japan Standard Time

"Kunibiki Messe" (Shimane Prefectural Convention Center)

Thursday, 27 February, 2025**EIDWT-2025 Keynote II
10:30-11:30 (UTC+9) Japan Standard Time****EIDWT-2025 Keynote Talk II****Prof. Hiroaki Kikuchi:** Privacy Enhancing Technologies (PETs) Challenges for Healthcare Bigdata

Lunch Break**11:30-13:00 (UTC+9)**

Parallel Sessions**13:00-14:30 (UTC+9) Japan Standard Time****EIDWT-S7: Secure Systems and Attack Analysis****Chair: Juggapong Natwichai, Chiang Mai University, Thailand**

1. Characteristic Analysis and Attack Group Identification of Phishing Sites Targeting Japan
Shingo Matsugaya, Makoto Shimamura, Kosuke Takeshige, Keisuke Sakai, Masaki Hashimoto
2. IoT Attack Detection Based on Continuous Learning Across Multiple Regions
Wei Xiang, Eiichiro Kodama, Jiahong Wang, Bhed Bahadur Bista, Toyoo Takata
3. Investigation Towards Detecting Landing Websites for Fake Japanese Shopping Websites
Daigo Michishita, Satoru Kobayashi, Toshihiro Yamauchi
4. Evaluating the Effectiveness of Customized Phishing Simulations in Enhancing Cybersecurity Awareness at a University in Thailand
Damrongsak Naparat, Opas Muensan, Worajak Chaikaew
5. Survey on Technologies of Video Deepfake Detection
Li Chanchan, Song Zuyi, Liang Yutong, Wang Xu An

EIDWT-S8: Network Applications and Services**Chair: Euripides G.M. Petrakis, Technical University of Crete (TUC), Greece**

1. Operation and Evaluation of Flow Information-based Incident Detection System in Campus Network
Daisuke Yagyū, Yoshifumi Ueshige, Masato Tsuru
 2. Automatic Routing by Modulation Frequency of Envelope Pulse Wave in Photonic Crystal Waveguide
Itsuki Ishibashi, Hiroshi Maeda
-

3. Evaluation of the Trust Algorithm to Prevent Illegal Information Flow in the Trust Zone Model
Shigenari Nakamura, Lidia D Ogiela, Makoto Takizawa
 4. Evaluation of Essential Functions for Data-plane Programming on P4 Hardware Switch
Kazumi Kumazoe, Kenji Kawahara, Masato Tsuru
 5. Scheduling High-Affinity Services in Kubernetes
Vasileios Skevakis, Euripides G.M. Petrakis
-

Coffee Break

14:30-15:00 (UTC+9)

Parallel Sessions

15:00-16:30 (UTC+9) Japan Standard Time

EIDWT-S9: IoT Applications and Energy-Efficient Systems

Chair: Tomoya Enokido, Rissho University, Japan

1. Energy-Aware Concurrency Control with the Purpose and Read-Data-From Serializability
Tomoya Enokido, Dilawaer Duolikun, Makoto Takizawa
2. Implementation of a Motor Control Learning Device and Its Evaluation for Voice Control Using Multi Languages
Keita Matsuo, Leonard Barolli
3. An Algorithm to Select an Energy-Efficient Succeeding Fog Node in the NBFC Model
Dilawaer Duolikun, Tomoya Enokido, Makoto Takizawa
4. Advancing Federated Virtual Sensors for IoT with Privacy Safeguards and Robustness to Adversarial Threats
Klea Elmazi, Donald Elmazi, Jonatan Lerga

EIDWT-S10: Large Language Models and Applications

Chair: Nour El Madhoun, ISEP, France

1. Leveraging Prompt-based Large Language Models for Code Smell Detection: A Comparative Study on the MLCQ Dataset
Djamel Mesbah, Nour El Madhoun, Khaldoun Al Agha, Hani Chalouati
 2. Structuring Clinical Image Reports: Attempt to Implement a Local-Large Language Model
Koji Sakai, Tomohiro Kajikawa, Yu Ohara, Takehi Takahashi, Kei Yamada
 3. An Emotion Classification System Considering Analytic Hierarchy Process
Yurika Nagamori, Kiichi Honsho, Hiroaki Narisawa, Shinji Sakamoto, Taisuke Kawamata
-

4. Ethical and Technical Challenges in the European Conflict Resolution Project: The Role of Equitative Algorithm (CREA3)
Egidia Cirillo, Marco Giacalone, Alberto Moccardi, Marcello Pelosi
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Coffee Break

16:30-17:00 (UTC+9)

Banquet Party

18:00-20:00 (UTC+9) Japan Standard Time

Yuushien Garden in Daikonshima

Address: 1260-2, Hanyuu, Yatsuka-cho, Matsue, Shimane, Japan 690-1492

Friday, 28 February, 2025

EIDWT-2025 Steering Committee Meeting and Discussion

**Hybrid Meeting Schedule for EIDWT-2025
February 26 - 28, 2025**

1 st day: Wednesday, 26 February, 2025	Room #1 Meeting ID: TBA		Room #2 Meeting ID: TBA		Room #3 Meeting ID: TBA	
	Session title	Session chair	Session title	Session chair	Session title	Session chair
Slot 1 10:30-11:30 (UTC+9) Japan Standard Time	EIDWT-2025 Keynote #1: Prof. Euripides G. M. Petrakis					
	Meeting ID: TBA					
11:30-13:00 (UTC+9)	Lunch Break					
Slot 2 13:00-14:30 (UTC+9) Japan Standard Time	EIDWT-S1	Keita Matsuo, Japan	EIDWT-S2	Yoshihiro Okada, Japan	EIDWT-S3	Tomoki Yoshihisa, Japan
14:30-15:00 (UTC+9)	Coffee Break					
Slot 3 15:00-16:30 (UTC+9) Japan Standard Time	EIDWT-S4	Makoto Ikeda, Japan	EIDWT-S5	Kosuke Takano, Japan	EIDWT-S6	Shinji Sakamoto, Japan
16:30-17:00 (UTC+9)	Coffee Break					
Social Event 17:00-19:00 (UTC+9) Japan Standard Time	Welcome Reception Party "Kunibiki Messe" (Shimane Prefectural Convention Center)					
2 nd day: Thursday, 27 February, 2025	Room #1 Meeting ID: TBA		Room #2 Meeting ID: TBA		Room #3 Meeting ID: TBA	
	Session title	Session chair	Session title	Session chair	Session title	Session chair
Slot 1 10:30-11:30 (UTC+9) Japan Standard Time	EIDWT-2025 Keynote #2: Prof. Hiroaki Kikuchi					
	Meeting ID: TBA					
11:30-13:00 (UTC+9)	Lunch Break					
Slot 2 13:00-14:30 (UTC+9) Japan Standard Time	EIDWT-S7	Juggapong Natwichai, Thailand	EIDWT-S8	Euripides G.M. Petrakis, Greece		
14:30-15:00 (UTC+9)	Coffee Break					
Slot 3 15:00-16:30 (UTC+9) Japan Standard Time	EIDWT-S9	Tomoya Enokido, Japan	EIDWT-S10	Nour El Madhoun, France		
16:30-17:00 (UTC+9)	Coffee Break					
Social Event 18:00-20:00 (UTC+9) Japan Standard Time	Banquet Party Yuushien Garden in Daikonshima, Address: 1260-2, Hanvuu, Yatsuka-cho, Matsue, Shimane, Japan 690-1492					
3 rd day: Friday, 28 February, 2025	EIDWT-2025: Steering Committee Meeting and Discussion					