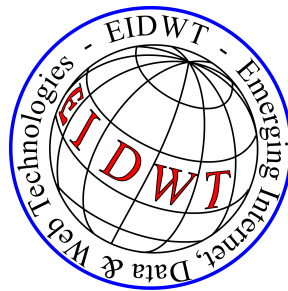


PROGRAM GUIDE

EIDWT-2021

The 9-th International Conference on
Emerging Internet, Data & Web Technologies



Technically Supported by:



Fukuoka Institute of Technology

Virtual Conference (Online Presentation)

February 25-26, 2021

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Juggapong Natwichai, Chiang Mai University, Thailand

David Taniar, Monash University, Australia

Program Co-Chairs

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Tomoya Enokido, Rissho University, Japan

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Ermioni Qafzezi, Fukuoka Institute of Technology, Japan

Finance Chair

Makoto Ikeda, Fukuoka Institute of Technology, Japan

Steering Committee Chair

Leonard Barolli, Fukuoka Institute of Technology, Japan

Welcome Message of EIDWT-2021 International Conference Organizers

Welcome to the 9-th International Conference on Emerging Internet, Data and Web Technologies (EIDWT-2021), which will be held from February 25 to February 27, 2021 in Chiang Mai, Thailand.

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.

In EIDWT-2021 will be discussed topics related to Information Networking, Data Centres, Data Grids, Clouds, Social Networks, Security Issues and other Web 2.0 implementations towards a collaborative and collective intelligence approach leading to advancements of virtual organizations and their user communities. This is because, current and future Web and Web 2.0 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-2021 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. Finally, EIDWT-2021 aims to provide a forum for original discussion and prompt future directions in the area.

An international conference requires the support and help of many people. A lot of people have helped and worked hard for a successful EIDWT-2021 technical program and conference proceedings. First, we would like to thank all authors for submitting their papers. We are indebted to Program Area chairs, Program Committee members and reviewers who carried out the most difficult work of carefully evaluating the submitted papers. We would like to give our special thanks to Honorary Chair of EIDWT-2021 Prof. Makoto Takizawa, Hosei University, Japan for his guidance and support. We would like to express our appreciation to our keynote speakers for accepting our invitation and delivering very interesting keynotes at the conference.

EIDWT-2021 International Conference Organizers

EIDWT-2021 Steering Committee Chair

Leonard Barolli, Fukuoka Institute of Technology (FIT), Japan

EIDWT-2021 General Co-Chairs

Juggapong Natwichai, Chiang Mai University, Thailand

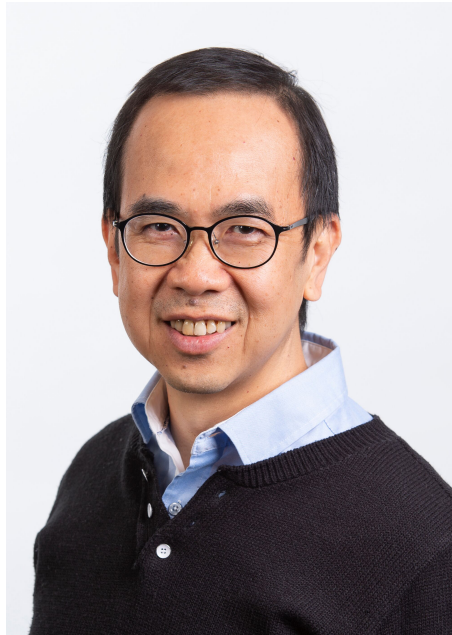
David Taniar, Monash University, Australia

EIDWT-2021 Program Committee Co-Chairs

Pruet Boonma, Chiang Mai University, Thailand

Tomoya Enokido, Rissho University, Japan

EIDWT 2021 Keynote Talk I



Dr. David Taniar, Monash University, Melbourne, Australia

Title: Contract Tracing during Covid-19 Pandemic: An Australian Experience Synopsis

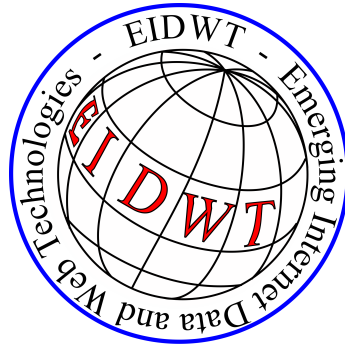
Abstract: Contact Tracing is the activity of retrieving historical activities and trips for a person where his presence at a specific location might affect other persons within a certain radius. In related to a contagious disease, an infected person might spread the pathogens to the nearby people during close contact that can trigger a chain reaction of community transmission. The biggest problem in obtaining the historical activities in a contact tracing procedure is privacy and security issues. The privacy issue refers to private-related sensitive information that is not meant to be shared with anyone. However, during a contact tracing investigation, the authorities have the right to know every detail from a suspected patient. The security issue refers to the safety of the shared private information to the authority. Due to these issues, many patients are reluctant to share their past activities to the authority. This condition makes it even harder to obtain the right information from the patients. The next consequence is that the spreading of the diseases will be off the radar since contact tracing could not be done correctly. Several methods have been proposed to help contact tracing procedures. In general, there are two types of contact tracing methods, proximity-based and trajectory-based. While the proximity-based method lacks historical trips and suffers from multi-platforms communication issues, trajectory-based suffers from privacy issues. This speech will discuss these methods together with their pros and cons. In conclusion, a method that can preserve privacy and retain the details of the trip will also be explained in this session as an alternative method to support contact tracing.

EIDWT 2021 Keynote Talk II

Dr. Juggapong Natwichai, Chiang Mai University, Thailand

Title: Privacy Violation from Joint Attacks on Incremental Datasets

Abstract: Data are continuously collected and grown, therefore the privacy protection mechanisms designed for static data might not be able to cope with this situation effectively. In this talk, I will first present the possible privacy violations, attacks, which could occur, including a newly discovered type of violation, and Joint Attack. After the attacks are formulated, then the characteristics of the privacy attacks are extracted in order to find approaches to preserve the privacy efficiently. Lastly, the preliminary experiment results will be presented.



EIDWT-2021

Main Conference Program

Thursday, February 25, 2021

11:00-12:00 EIDWT-2021 Keynote I

EIDWT-2021 Keynote Talk I

Dr. David Taniar: Contract Tracing during Covid-19 Pandemic: An Australian Experience Synopsis

13:30-15:00 Parallel Sessions

EIDWT-S1: Wireless and Mobile Networking

Chair: Elis Kulla, Okayama University of Science, Japan

1. Enhanced Focused Beam Routing in Underwater Wireless Sensor Networks
Elis Kulla, Kengo Katayama, Keita Matsuo, and Leonard Barolli
2. A Hybrid Intelligent Simulation System for Node Placement in WMNs Considering Chi-square Distribution of Mesh Clients and Different Router Replacement Methods
Seiji Ohara, Admir Barolli, Phudit Ampririt, Keita Matsuo, Leonard Barolli, and Makoto Takizawa
3. Realistic Topic-based Data Transmission Protocol in a Mobile Fog Computing Model
Takumi Saito, Shigenari Nakamura, Tomoya Enokido, and Makoto Takizawa
4. A Fuzzy-based Approach for Reducing Transmitted Data Considering Data Difference Parameter in Resilient WSNs
Daisuke Nishii, Makoto Ikeda, Leonard Barolli

EIDWT-S2: Data Processing and Privacy**Chair: Juggapong Natwichai, Chiang Mai University, Thailand**

1. Considering Cross-Referencing Method for Scalable Public Blockchain
Takaaki Yanagihara and Akihiro Fujihara
2. Data Privacy Preservation Algorithm on Large-Scale Identical Generalization Hierarchy Data
Waranya Mahanan and Juggapong Natwichai
3. A Proposition of Physician Scheduling Method for Improving Work-life Balance
Yusuke Gotoh, Naoki Iwamoto, Koji Sakai, Jun Tazoe, Yu Ohara, Akira Uchiyama, Yoshinari Nomura
4. Data Lake Architecture
David Taniar, Wenny Rahayu

15:30-17:00 Parallel Sessions**EIDWT S3: Wireless Mesh Networks****Chair: Keita Matsuo, Fukuoka Institute of Technology, Japan**

1. Implementation of a Simulation System for Optimal Number of MOAP Robots Using Elbow and Silhouette Theories in WMNs
Keita Matsuo, Kenshiro Mitsugi, Atushi Toyama and Leonard Barolli
2. Simulation Results of CCM Based HC for Mesh Router Placement Optimization Considering Two Islands Model of Mesh Clients Distribution
Aoto Hirata, Tetsuya Oda, Nobuki Saito, Yuki Nagai, Masaharu Hirota, Kengo Katayama
3. Performance Comparison of Constriction and Linearly Decreasing Inertia Weight Router Replacement Methods for WMNs by WMN-PSOSA-DGA Hybrid Simulation System Considering Chi-square Distribution of Mesh Clients
Admir Barolli, Shinji Sakamoto, Phudit Ampririt, Seiji Ohara, Leonard Barolli and Makoto Takizawa
4. Comparison Study of Linearly Decreasing Inertia Weight Method and Rational Decrement of Vmax Method for WMNs Using WMN-PSOHC Intelligent System Considering Normal Distribution of Mesh Clients
Shinji Sakamoto, Leonard Barolli and Shusuke Okamoto

EIDWT-S4: Energy-Efficient Systems and Applications**Chair: Tomoya Enokido, Rishho University, Japan**

1. An Energy-Efficient Migration Algorithm for Virtual Machines to Reduce the Number of Migrations
Naomichi Noaki, Takumi Saito, Dilawaer Duolikun, Tomoya Enokido and Makoto Takizawa
2. Design and Implementing of the Dynamic Tree-Based Fog Computing (DTBFC) Model to realize the Energy-Efficient IoT
Keigo Mukae, Takumi Saito, Shigenari Nakamura, Tomoya Enokido and Makoto Takizawa
3. An Algorithm to Select an Energy-efficient Server for an Application Process in a Cluster
Kaiya Noguchi, Takumi Saito, Dilawaer Duolikun, Tomoya Enokido and Makoto Takizawa
4. The Improved Active Time-Based (IATB) Algorithm with Multi-Threads Allocation
Tomoya Enokido and Makoto Takizawa

Friday, February 26, 2021**11:00-12:00 EIDWT-2021 Keynote II****EIDWT-2021 Keynote Talk II**

Dr. Juggapong Natwichai: Privacy Violation from Joint Attacks on Incremental Datasets

13:30-15:00 Parallel Sessions**EIDWT-S5: VANETs**

Chair: Makoto Ikeda, Fukuoka Institute of Technology, Japan

1. Effect of Vehicle Technical Condition on Real-time Driving Risk Management in VANETs
Kevin Bylykbashi, Ermioni Qafzezi, Makoto Ikeda, Keita Matsuo, Leonard Barolli, Makoto Takizawa
2. Resource Management in SDN-VANETs Using Fuzzy Logic: Effect of Average Processing Capability per Neighbor Vehicle on Management of Cloud-Fog-Edge Resources
Ermioni Qafzezi, Kevin Bylykbashi, Phudit Ampirit, Makoto Ikeda, Leonard Barolli, Makoto Takizawa
3. Decision Analysis of Winter Road Conditions by Crowd Sensing Platform
Yoshitaka Shibata, Akira Sakuraba, Yoshikazu Arai, Yoshiya Saito, Jun Hakura
4. Analysis for Real-time Contactless Road Roughness Estimation System with Onboard Dynamics Sensor
Akira Sakuraba, Yoshia Saito, Jun Hakura, Yoshikazu Arai, Yoshitaka Shibata
5. Dynamic Pricing Method for One-way Car Sharing Service to Meet Demand and to Maximize Profit Under Given Utility Function
Ryuta Kikuchi and Hiroyoshi Miwa

EIDWT-S6: Multimedia and Web Applications

Chair: Yoshihiro Okada, Kyushu University, Japan

1. Implementation of Disaster Information Acquisition Method using CCN Moving Router
Taisuke Ono and Tomoyuki Ishida
2. Automatic Classification and Rating of Videogames based on Dialogues Transcript Files
Alessandro Maisto, Giandomenico Martorelli, Antonietta Paone, Serena Pelosi
3. Requirements and Technical Design for Online Patient Referral System
Vivatchai Kaveeta, Supaksiri Suwiwattana, Juggapong Natwichai, Krit Khwanngern
4. Web-based 3D and 360° VR Materials for IoT Security Education Supporting Learning Analytics
Wei Shi, Akira Haga, Yoshihiro Okada

15:30-17:00 Parallel Sessions**EIDWT-S7: Network Protocols and Algorithms****Chair: Naohiro Hayashibara, Kyoto Sangyo University, Japan**

1. On Reducing Measurement Load on Control-Plane in Locating High Packet-Delay Variance Links for OpenFlow Networks
Nguyen Minh Tri, Nguyen Viet Ha, Masahiro Shibata, Masato Tsuru and Akira Kawaguchi
2. Routing Control and Fault Recovery Strategy of Electric Energy Router under the Framework of Energy Interne
Yunfei Du, Xianggen Yin, Jinmu Lai, Zia Ullah, Zhen Wang, Jiakuan Hu
3. End-to-end Data Pipeline in Games for Real-time Data Analytics
Noppon Wongta, Juggapong Natwichai
4. Performance Comparison of Replication Protocols for Low Demand Files in MANET
Takeru Kurokawa and Naohiro Hayashibara
5. Implementation of a Device Adopting the OI (Operation Interruption) Protocol to Prevent Illegal Information Flow in the IoT
Shigenari Nakamura, Tomoya Enokido, Lidia Ogiela and Makoto Takizawa

EIDWT-S8: Intelligent Algorithms and Machine Learning**Chair: Fang-Yie Leu, Tunghai University, Taiwan**

1. Proposal and Evaluation of a Tabu List Based DQN for AAV Mobility
Nobuki Saito, Tetsuya Oda, Aoto Hirata, Yuki Nagai, Masaharu Hirota, Kengo Katayama
2. A Study on Comparative Evaluation of Credit Card Fraud Detection Using Tree-Based Machine Learning Models
Thitiwat Ruangsakorn and Song Yu
3. Measuring the Accuracy of the TFT-LCD Printing Process by Using Deep Learning and Object Detection Technology
Fang-Yie Leu and Ting-Wei Yeh
4. Effect of Slice Overloading Cost on Admission Control for 5G Wireless Networks: A Fuzzy-based System and Its Performance Evaluation
Phudit Ampririt, Seiji Ohara, Ermioni Qafzezi, Makoto Ikeda, Leonard Barolli, Makoto Takizawa

Online Meeting Schedule for EIDWT-2021
25 February to 26 February, 2021

1 st day: 25 February, 2021	Room #1 Meeting ID: 875 6024 8126		Room #2 Meeting ID: 867 8505 2170	
	Session title	Session Chair	Session title	Session Chair
Slot 1 11:00-12:00 (GMT+7:00) 13:00-14:00 (GMT+9:00)	EIDWT-2021 Keynote #1 Meeting ID: 875 6024 8126			
Slot 2 13:30-15:00 (GMT+7:00) 15:30-17:00 (GMT+9:00)	EIDWT-S1	Elis Kulla, JP	EIDWT-S2	Juggapong Natwichai, TH
Slot 3 15:30-17:00 (GMT+7:00) 17:30-19:00 (GMT+9:00)	EIDWT-S3	Keita Matsuo, JP	EIDWT-S4	Tomoya Enokido, JP
2 nd day: 26 February, 2021	Room #1 Meeting ID: 875 6024 8126		Room #2 Meeting ID: 867 8505 2170	
	Session title	Session Chair	Session title	Session Chair
Slot 1 11:00-12:00 (GMT+7:00) 13:00-14:00 (GMT+9:00)	EIDWT-2021 Keynote #2 Meeting ID: 875 6024 8126			
Slot 2 13:30-15:00 (GMT+7:00) 15:30-17:00 (GMT+9:00)	EIDWT-S5	Makoto Ikeda, JP	EIDWT-S6	Yoshihiro Okada, JP
Slot 3 15:30-17:00 (GMT+7:00) 17:30-19:00 (GMT+9:00)	EIDWT-S7	Naohiro Hayashibara, JP	EIDWT-S8	Fang-Yie Leu, TW

Additional information

The session schedules indicated in the program are based on the GMT+7:00 time zone.