PROGRAM GUIDE

NBiS-2020

The 23-rd International Conference on
Network-Based Information Systems

and

Intelligent Networking
and Collaborative Systems

INCoS-2020

The 12-th International Conference on
Intelligent Networking and Collaborative Systems

Technically Co-sponsored by:

University of Victoria
Canada

FIT Fukuoka Institute of Technology
福岡工業大学

Fukuoka Institute of Technology
Japan

NBiS-2020 Organizing Committee

General Co-Chairs

Kin Fun Li, University of Victoria, Canada

Tomoya Enokido, Rissho University, Japan

Program Committee Co-Chairs

Michael McGuire, University of Victoria, Canada

Lidia Ogiela, Pedagogical University of Cracow, Poland

Naohiro Hayashibara, Kyoto Sangyo University, Japan

Workshops Co-Chairs

Fayez Gebali, University of Victoria, Canada

Tomoyuki Ishida, Fukuoka Institute of Technology, Japan

Chuan-Yu Chang, National Yunlin University of Science and Technology, Taiwan

Award Co-Chairs

Markus Aleksy, ABB AG, Germany

Wenny Rahayu, La Trobe University, Australia

Isaac Woungang, Ryerson University, Canada

Publicity Co-Chairs

Mihai Sima, University of Victoria, Canada

Minoru Uehara, Toyo University, Japan

David Taniar, Monash University, Australiaa

Arjan Durresi, IUPUI, USA

International Liaison Co-Chairs

Ilamparithi Thirumarai Chelvan, University of Victoria, Canada

Farookh Hussain, University Technology Sidney, Australia

Marek Ogiela, AGH University of Science and Technology, Poland

Hiroaki Kikuchi, Meiji University, Japan

Local Arrangement Co-Chairs

Marina Ibrishimova, University of Victoria, Canada

Narges Attarmoghaddam, University of Victoria, Canada

Finance Chair

Makoto Ikeda, Fukuoka Institute of Technology, Japan

Web Administrator Co-Chairs

Kevin Bylykbashi, Fukuoka Institute of Technology, Japan

Donald Elmazi, Fukuoka Institute of Technology, Japan

Miralda Cuka, Fukuoka Institute of Technology, Japan

Steering Committee Co-Chairs

Leonard Barolli, Fukuoka Institute of Technology, Japan

Makoto Takizawa, Hosei University, Japan

Welcome Message from the NBiS-2020 Steering Committee Co-Chairs

Welcome to the 23rd International Conference on Network-Based Information Systems (NBiS-2020), which will be held at University of Victoria, Victoria, Canada from August 31 to September 2, 2020.

The main objective of NBiS is to bring together scientists, engineers, and researchers from both network systems and information systems with the aim of encouraging the exchange of ideas, opinions, and experiences between these two communities.

NBiS started as a workshop and was held for 12 years together with DEXA International Conference as one of the oldest among DEXA Workshops. The workshop was very successful and in 2009 edition the NBiS was held at IUPUI, Indianapolis, USA as an independent International Conference supported by many international volunteers. In following years, the NBiSs was held in Takayama, Gifu, Japan (2010), Tirana, Albania (2011) Melbourne, Australia (2012), Gwangju, Korea (2013), Salerno, Italy (2014), Taipei, Taiwan (2015), Ostrava, Czech Republic (2016), Toronto, Canada (2017), Bratislava, Slovakia (2018) and Oita, Japan (2019).

In this edition of NBiS, many papers were submitted from all over the world. They were carefully reviewed and only high quality papers will be presented during conference days.

Many volunteer people have kindly helped us to prepare and organize NBiS-2020. We would like to thank General Co-Chairs, Program Co-Chairs, Workshops Co-Chairs, Organizing Committee Members, Program Committee Members and other volunteers for their great help and support. We have special thanks also to Finance Chair and Web Administrator Co-Chairs. Finally, we thank the Local Organization Team at University of Victoria, Canada for their good arrangements.

We do hope that you will enjoy the conference and have a good time in Victoria, Japan.

NBiS-2020 Steering Committee Co-Chairs

Leonard Barolli, *Fukuoka Institute of Technology (FIT), Japan*
Makoto Takizawa, *Hosei University, Japan*

Welcome Message from NBiS-2020 General Co-Chairs

We would like to welcome you to the 23rd International Conference on Network-Based Information Systems (NBiS-2020), which will be held at University of Victoria, Victoria, Canada from August 31 to September 2, 2020.

It is our honour to chair this prestigious conference, as one of the important conferences in the field. Extensive international participation, coupled with rigorous peer reviews, has made this an exceptional technical conference. The Technical Program and Workshops add important dimensions to this event. We hope that you will enjoy each and every component of this event and benefit from interactions with other attendees.

Since its inception, NBiS has attempted to bring together people interested in information and networking, in areas that range from the theoretical aspects to the practical design of new network systems, distributed systems, multimedia systems, Internet/web technologies, mobile computing, intelligent computing, pervasive/ubiquitous networks, dependable systems, semantic services, Grid, P2P, and scalable computing. For NBiS-2020, we have continued these efforts as novel networking concepts emerge and new applications flourish.

The organization of an international conference requires the support and help of many people. A lot of people have helped and worked hard for a successful NBiS-2020 technical program and conference proceedings. First, we would like to thank all the authors for submitting their papers. We are indebted to Track Co-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 Prof. Leonard Barolli and Prof. Makoto Takizawa the chairs of the Steering Committee for giving us the opportunity to hold this conference and for their guidance on organizing the conference. We would like to thank Program Co-Chairs and Workshops Co-Chairs for their excellent work. We would like to express our great appreciation to our keynote speakers for accepting our invitation as keynote speakers of NBiS-2020.

We hope that you have an enjoyable and productive time during the conference.

NBiS-2020 General Co-Chairs

Kin Fun Li, *University of Victoria, Canada*
Tomoya Enokido, *Rissho University, Japan*

Welcome Message from NBiS-2020 Program Committee Co-Chairs

Welcome to the 23rd International Conference on Network-Based Information Systems (NBiS-2020), which will be held at University of Victoria, Victoria, Canada from August 31 to September 2, 2020.

The purpose of NBiS conference is to bring together developers and researchers to share ideas and research work in the emerging areas of network and information systems.

The contributions included in the proceedings of NBiS-2020 cover all aspects of theory, design and application of computer networks and information systems. There are many topics of information networking such as cloud computing, wireless sensor networks, ad-hoc networks, peer-to-peer systems, grid computing, social networking, multimedia systems and applications, security, distributed and parallel systems and mobile computing.

The organization of an International Conference requires the support and help of many people. First, we would like to thank all authors for submitting their papers. We would like to thank all Track Chairs and Program Committee Members, who carried out the most difficult work of carefully evaluating the submitted papers.

We would like to give special thanks to Prof. Leonard Barolli and Prof. Makoto Takizawa the Chairs of the Steering Committee of NBiS for their strong encouragement, guidance, insights, and for their effective coordination of conference organization. We would like to greatly thank General Co-Chairs for their great support and invaluable suggestions to make the conference a very successful event.

We hope you will enjoy the conference.

NBiS-2020 Program Committee Co-Chairs

Michael McGuire, *University of Victoria, Canada*
Lidia Ogiela, *Pedagogical University of Cracow, Poland*
Naohiro Hayashibara, *Kyoto Sangyo University, Japan*

INCoS-2020 Conference Organizing Committee

Honorary Chair
Makoto Takizawa, Hosei University, Japan

General Co-Chairs
Kin Fun Li, University of Victoria, Canada
Hiroyoshi Miwa, Kwansei Gakuin University, Japan

Program Co-Chairs
Alex Thomo, University of Victoria, Canada
Flora Amato, University of Naples "Frederico II", Italy
Omar Hussain, UNSW Canberra, Australia

Workshops Co-Chairs
Issa Traore, University of Victoria, Canada
Santi Caballé, Open University of Catalonia, Spain
Natalia Kryvinska, Comenius University in Bratislavia, Slovakia

International Advisory Committee
Vincenzo Loia, University of Salerno, Italy
Albert Zomaya, University of Sydney, Australia
Fang-Yie Leu, Tunghai University, Taiwan

International Liaison Co-Chairs
Riham AlTawry, University of Victoria, Canada
Aneta Poniszewska-Maranda, Lodz University of Technology, Poland
Xu An Wang, Engineering University of CAPF, China

Award Co-Chairs
Tomoya Enokido, Rissho University, Japan
Marek Ogiela, AGH University of Science and Technology, Poland
Masato Tsuru, Kyushu Institute of Technology, Japan
Vaclav Snasel, Technical University of Ostrava, Czech Republic

Web Administrator Co-Chairs
Kevin Bylykbashi, Fukuoka Institute of Technology, Japan
Donald Elmazi, Fukuoka Institute of Technology, Japan
Miralda Cuka, Fukuoka Institute of Technology, Japan

Local Arrangement Co-Chairs
Parastoo Soleimani, University of Victoria, Canada
Sina Ghaffari, University of Victoria, Canada

Finance Chair
Makoto Ikeda, Fukuoka Institute of Technology, Japan

Steering Committee Chair
Leonard Barolli, Fukuoka Institute of Technology, Japan

Welcome Message from the INCoS-2020 Organizing Committee

Welcome to the 12th International Conference on Intelligent Networking and Collaborative Systems (INCoS-2020), which is held at University of Victoria, Victoria, Canada from August 31 to September 2, 2020.

INCoS is a multidisciplinary conference that covers latest advances in intelligent social networks and collaborative systems, intelligent networking systems, mobile collaborative systems, secure intelligent cloud systems, etc. Additionally, the conference addresses security, authentication, privacy, data trust and user trustworthiness behaviour, which have become crosscutting features of intelligent collaborative systems. With the fast development of the Internet, we are experiencing a shift from the traditional sharing of information and applications as the main purpose of the networking systems to an emergent paradigm, which locates people at the very centre of networks and exploits the value of people's connections, relations and collaboration. Social networks are playing a major role as one of the drivers in the dynamics and structure of intelligent networking and collaborative systems.

Virtual campuses, virtual communities and organizations strongly leverage intelligent networking and collaborative systems by a great variety of formal and informal electronic relations, such as business-to-business, peer-to-peer and many types of online collaborative learning interactions, including the virtual campuses and eLearning and MOOCs systems. Altogether, this has resulted in entangled systems that need to be managed efficiently and in an autonomous way. In addition, the conjunction of the latest and powerful technologies based on Cloud, mobile and wireless infrastructures are currently bringing new dimensions of collaborative and networking applications a great deal by facing new issues and challenges. INCoS-2020 conference paid a special attention to Cloud Computing Services, Storage, Security and Privacy, Data Mining, Machine Learning and Collective Intelligence, Cooperative Communication and Cognitive Systems, Big Data Analytis, eLearning, Virtual Campuses and MOOCs, among others.

The aim of this conference is to stimulate research that will lead to the creation of responsive environments for networking and, at longer-term, the development of adaptive, secure, mobile, and intuitive intelligent systems for collaborative work and learning. As in all previous editions, INCoS-2020 counted on with the support and collaboration of a large and internationally recognized TPC covering all main themes of the conference.

The successful organization of the conference is achieved thanks to the great collaboration and hard work of many people and conference supporters. First, we would like to thank all the authors for their continued support to the conference by submitting their research work to the conference, for their presentations and discussions during the conference days. We would like to thank PC Co-Chairs, TPC members and external reviewers for their work by carefully evaluating the submissions and providing constructive feedback to authors. We would like to thank the track chairs for their work on setting up the tracks and the respective TPCs and also for actively promoting the conference and their tracks.

We would like to acknowledge the excellent work and support by the International Advisory Committee. Our gratitude and acknowledgment for the conference keynotes for their interesting and inspiring keynote speeches.

We greatly appreciate the support by Web Administrator Co-Chairs. We are very grateful to Springer as well as several academic institutions for their endorsement and assistance.

Finally, we hope that you will find these proceedings to be a valuable resource in your professional, research and educational activities.

INCoS-2020 Steering Committee Chair
Leonard Barolli, *Fukuoka Institute of Technology, Japan*

INCoS-2020 General Co-Chairs
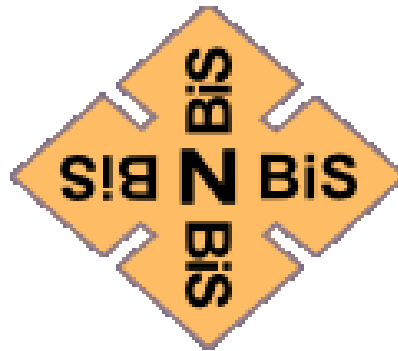**Kin Fun Li**, *University of Victoria, Canada*
Hiroyoshi Miwa, *Kwansei Gakuin University, Japan*

INCoS-2020 Program Co-Chairs
Alex Thomo, *University of Victoria, Canada*
Flora Amato, *University of Naples "Frederico II", Italy*
Omar Hussain, *UNSW Canberra, Australia*

NBiS-2020
Main Conference and Workshops Program

The 1st Day of Conference

Time: TBA

NBiS-S1: Intelligent Systems and Artificial Intelligence

Chair: Hsing-Chung Chen, Asia University, Taiwan

1. Performance Evaluation of WMN-PSOSA-DGA Simulation System Considering Uniform and Chi-square Client Distributions
   Admir Barolli, Shinji Sakamoto, Phudit Ampririt, Seiji Ohara, Leonard Barolli and Makoto Takizawa

2. Requirements for Trustworthy Artificial Intelligence – A Review
   Davinder Kaur, Suleyman Uslu and Arjan Durresi

3. Optimal Number of MOAP Robots for WMNs Using Elbow Theory
   Kenshiro Mitsugi, Atushi Toyama, Keita Matsuo and Leonard Barolli

4. A Performance Evaluating Simulation for PSO Algorithm by Applying Traceroute Feature
   Hsing-Chung Chen, Agung Mulyo Widodo, Bambang Irawan, Cahya Damarjati, Aristophane Nshimiyimana

WSSM-S1: Web Applications and Systems

Chair: Masaki Kohana, Chuo University, Japan

1. Dialogbook: Simple e-Portfolio System for International Communication Learning
   Jun Iio and Shigenori Wakabayashi

2. A Practical Implementation of Searchable Encrypted Audit Logging System
   Yasuhiro Ohtaki and Kenta Togashi

3. Another HTML5 Implementation of Web-Com for Embedding Chalk Annotations and Talk Voices into HTML Documents
   Koki Maruyama, Yasuhiro Ohtaki, Michitoshi Niibori, Tatsuhiro Yonekura and Masaru Kamada

4. Recovering Lost Connection for Web Browser Network
   Masaki Kohana, Shinji Sakamoto, Shusuke Okamoto

INWC-S1: Mobile Computing and Communication

Chair: Makoto Ikeda, Fukuoka Institute of Technology, Japan

1. Application of Fuzzy Logic for Event Evaluation in WSANs
   Donald Elmazi, Miralda Cuka, Makoto Ikeda, Keita Matsuo, Leonard Barolli, Makoto Takizawa

2. Performance Evaluation of VegeCare Tool for Potato Disease Classification
   Natwadee Ruedeeniraman, Makoto Ikeda, Leonard Barolli

3. Effect of Parasitic Coil on Communication Performance on Table Type 13.56MHz RFID Reader
   Kiyotaka Fujisaki and Yuki Yoshigai

4. Wavelength Tuning of Output Optical Signal Through Resonant Filter for WDM System by Periodic Structure Composed of Silica Glass
   Hiroshi Maeda and Naoki Higashinaka

Time: TBA

NBiS-S2: Cloud, Fog and Edge Computing

Chair: Makoto Takizawa, Hosei University, Japan

1. A Fuzzy-based System for Assessment of Available Edge Computing Resources in a Cloud-Fog-Edge SDN-VANETs Architecture
   Ermioni Qafzezi, Kevin Bylykbashi, Phudit Ampririt, Makoto Ikeda, Leonard Barolli, Makoto Takizawa

2. Topic-based Processing Protocol in a Mobile Fog Computing Model
   Takumi Saito, Shigenari Nakamura, Tomoya Enokido, Makoto Takizawa

3. A Dynamic Network-based Fog Computing Model for Energy-efficient IoT
   Yinzhe Guo, Takumi Saito, Shigenari Nakamura, Tomoya Enokido, Makoto Takizawa

4. Consideration of the Cloud Type Virtual Policy Based Network Management Scheme for the Whole Internet
   Kazuya Odagiri, Shogo Shimizu, Naohiro Ishii

WSSM-S2: Web-based Computing and E-Learning Systems

Chair: Shusuke Okamoto, Seikei University, Japan

1. A Web-based Attendance Management System with NFC Seat Identifiers
   Kohei Takahashi, Michitoshi Niibori and Masaru Kamada

2. Preliminary Experiment for Location Tracking from Camera Image Using CNN
   Shiori Kawakami, Shinji Sakamoto and Shusuke Okamoto

3. A Proposal of Children Learning System to Promote Self-directed Choosing of Learning Tasks and Analysis of Learning Data in a Programming Classroom
   Yoshihiro Kawano, Yuka Kawano

4. An Environment for Computer Programming Classes under COVID-19 Situation
   Shusuke Okamoto, Shinji Sakamoto and Masaki Kohana

ISSE-S1: Intelligent and Smart Systems

Chair: Takahiro Uchiya, Nagoya Institute of Technology, Japan

1. A Grading System of Pot-Phalaenopsis Orchid using YOLO-V3 Deep Learning Model
   Yi-Wei Chang, Yu-Kai Hsiao, Chien-Chuan Ko, Rong-Show Shen, Wei-Yang Lin, Keng-Pei Lin

2. Effect of Network Slice Duration for 5G Wireless Networks: A Fuzzy-Based Admission Control System Considering Software-Defined Network Approach
   Phudit Ampririt, Seiji Ohara, Makoto Ikeda, Keita Matsuo, Leonard Barolli, Makoto Takizawa

3. Proposal of Container Management Mechanism on Multi-agent Framework
   Yafei Zhou, Takahiro Uchiya, Ichi Takumi

4. Development of Indoor Evacuation Training System using VR HMD
   Takahiro Uchiya, Ichi Takumi

Time: TBA

NBiS-S3: Attack Detection and Secure Systems

Chair: Fang-Yie Leu, Tunghai University, Taiwan

1. Detecting DoS and DDoS Attacks by using CuSum Algorithm in 5G Networks
   Shih-Ting Chiu, Fang-Yie Leu

2. Secure Cognitive Protocols for Data Fusion in Transformative Computing
   Lidia Ogiela, Makoto Takizawa, Urszula Ogiela

3. Comparison of OAuth/OpenID Connect Security in America and Japan
   Takamichi Saito, Satoshi Shibata, and Tsubasa Kikuta

4. The Trade-Off Between the False-Positive Ratio and the Attack Cost of Slow HTTP DoS
   Tetsuya Hirakawa and Toyoo Takata

ADPNA-S1: Distributed and Parallel Systems

Chair: Tomoya Enokido, Rissho University, Japan

1. CySec: Cybersecurity Review Program for Professionals in Japan
   Yoshio Kakizaki, Ryoichi Sasaki, Tomohide Okochi and Hiroshi Yasuda

2. Proposal of a Perimeter Line Management Method for Fog and Edge Computing with SDP Concept
   Shigeaki Tanimoto, Yuzuka Sato, Prajak Chertchom, Hiroyuki Sato, Atsushi Kanai

3. Energy-Efficient Migration of Virtual Machines
   Naomichi Noaki, Takumi Saito, Dilawaer Duolikun, Tomoya Enokido, and Makoto Takizawa

4. An Opportunistic Communication Protocol to Reduce Energy Consumption of Nodes
   Nanami Kitahara, Shigenari Nakamura, Takumi Saito, Tomoya Enomoto, and Makoto Takizawa

The 2nd Day of Conference

Time: TBA

NBiS-S4: Distributed and Parallel Computing

Chair: Wendy Osborn, University of Lethbridge, Canada

1. Optimization of JavaScript Large-Scale Urban Simulations
   Maria Patrou, Kenneth B. Kent and Dane Sheppard

2. Strategies for Alternate Group Trip Planning Queries in Location-Based Services
   Wendy Osborn and Shahul Shaik

3. An Area-efficient FPGA Implementation of a Real-time Binary Object Detection System
   Narges Attarmoghaddam and Kin Fun Li

4. The Bloom Clock to Characterize Causality in Distributed Systems
   Ajay D. Kshemkalyani and Anshuman Misra

DEMoC-S1: Data Engineering and Mobile Computing

Chair: Yusuke Gotoh, Okayama University, Japan

1. A Scheduling Method for Division-based Broadcasting Considering Consumption Rate of Multiple Videos
   Yusuke Gotoh and Kanto Nishino

2. Improvement and Evaluation of a Function for Tracing the Diffusion of Classified Information on KVM
   Hideaki Moriyama, Toshihiro Yamauchi, Masaya Sato and Hideo Taniguchi

3. A Continuous Media Data Broadcasting Model for Orbiting Base Stations
   Tomoki Yoshihisa, Yusuke Gotoh, and Akimitsu Kanzaki

4. A Method for Displaying Puncture Information in CT-guided Puncture Assistance System
   Yusuke Gotoh, Manoka Yamashita, Koji Sakai, Koji Masui

Time: TBA

NBiS-S5: Security and Privacy

Chair: Hiroaki Kikuchi, Meiji University, Japan

1. Address Usage Estimation Based on Bitcoin Traffic Behavior
   Hiroki Matsumoto, Shusei Igaki, Hiroaki Kikuchi

2. Enhanced Secure Comparison Schemes Using Homomorphic Encryption
   Lihua Wang, Tushar Kanti Saha, Yoshinori Aono, Takeshi Koshiba, Shiho Moriai

3. Malware Detection Using Machine Learning Models
   Glaucio H.S. Carvalho, Isaac Woungang, Alagan Anpalagan, Issa Traore, Leonard Barolli

4. An Ensemble Deep Learning Technique to Detect COVID-19 Misleading Information
   Mohamed K. Elhadad, Kin Fun Li, and Fayez Gebali

HETNET-S1: Heterogeneous Networking and Applications

Chair: Juggapong Natwichai, Chiang Mai University, Thailand

1. Effects of Early Update Cost in Cloud Object Storage Scheduling
   Titipat Sukhvibul and Juggapong Natwichai

2. Construction and Application of Online and Offline Mixed Teaching Mode under the Background of "Internet + Education"
   Ke Wang, Shuguang Liu, Xiaofeng Zhang

3. A Portal for Air Pollution Mitigation for Northern Thailand
   Rattapol Pornprasit, Methasit Pengmatchaya,Waranya Mahanan, Paskorn Champrasert, and Juggapong Nartwichai

4. A Comparison of Thai Sentence Boundary Detection Approaches Using Online Product Review Data
   Pree Thiengburanathum

Time: TBA

NBiS-S6: Algorithms and Systems

Chair: Naohiro Hayashibara, Kyoto Sangyo University, Japan

1. The Antikythera Framework: A Novel Design Approach for Accommodating a Large Number of Web Services
   Toshihiko Yamakami, Shunsuke Kirino, Masaki Takahashi

2. Community Mining and Cross-Community Discovery in Online Social Networks
   Belkacem Chikhaoui, Jean Marie Tshimula, Shengrui Wang

3. Considerations for Using DPDK in a Hypervisor Virtual Environment
   Souta Kawahara, Atsushi Kanai

4. A Cost Analysis of Routing Algorithms in Pedestrian-based Delay Tolerant Networks
   Tomoyuki Sueda and Naohiro Hayashibara

5. The Energy-Efficient Object Replication Scheme by Omitting Meaningless Write Methods in Virtual Machine Environments
   Tomoya Enokido and Makoto Takizawa

INCoS-2020
Main Conference and Workshops Program

The 1st Day of Conference

Time: TBA

INCoS-S1: Intelligent Computing Systems

Chair: Leonard Barolli, Fukuoka Institute of Technology, Japan

1. Performance Evaluation of WMNs by WMN-PSODGA Simulation System Considering Exponential Distribution of Mesh Clients and Different Router Replacement Methods
   Seiji Ohara, Admir Barolli, Phudit Ampririt, Keita Matsuo, Leonard Barolli, Makoto Takizawa

2. An Integrated Fuzzy-based Simulation System for Driving Risk Management in VANETs Considering Road Condition as a New Parameter
   Kevin Bylykbashi, Ermioni Qafzezi, Phudit Ampririt, Keita Matsuo, Leonard Barolli, Makoto Takizawa

3. Applying a Consensus Building Approach to Communication Projects in the Health Sector: The Momento Medico Case Study
   Ilaria Avino, Giuseppe Fenza, Graziano Fuccio, Alessia Genovese, Vincenzo Loia, and Francesco Orciuoli

4. Precision Dosing Management with Intelligent Computing in Digital Health
   Hong Lu, Sara Rosenbaum and Wei Lu

WIND-S1: Network Control and Scheduling

Chair: Masato Tsuru, Kyushu Institute of Technology, Japan

1. Transmission Scheduling for Tandemly-connected Sensor Networks with Heterogeneous Packet Generation Rates
   Ryosuke Yoshida, Masahiro Shibata and Masato Tsuru

2. P4-based Implementation and Evaluation of Adaptive Early Packet Discarding Scheme
   Kazumi Kumazoe and Masato Tsuru

3. Matching based Content Discovery Method on Geo-Centric Information Platform
   Kaoru Nagashima, Yuzo Taenaka, Akira Nagata, Hitomi Tamura, Kazuya Tsukamoto, Myung Lee

Time: TBA

INCoS-S2: Big Data and Social Networking

Chair: Alex Thomo, University of Victoria, Canada

1. Triangle Enumeration on Massive Graphs using AWS Lambda Functions
   Tengkai Yu, Venkatesh Srinivasan, and Alex Thomo

2. C ' Meal! The ChatBot for Food Information
   Alessandra Amato and Giovanni Cozzolino

3. Blockchain Architecture for Secured Inter-Healthcare Electronic Health Records Exchange
   Oluwaseyi Ajayi, Meryem Abouali, Tarel Saadawi

4. COVID-19-FAKES: A Twitter (Arabic/English) Dataset for Detecting Misleading Information on COVID-19
   Mohamed K. Elhadad, Kin Fun Li, and Fayez Gebali

5. PageRank for Billion-Scale Networks in RDBMS
   Aly Ahmed and Alex Thomo

WIND-S2: Information Network Design

Chair: Hiroyoshi Miwa, Kwansei Gakuin University, Japan

1. SDN-based In-network Early QoE Prediction for Stable Route Selection on Multi-path network
   Shumpei Shimokawa, Yuzo Taenaka, Kazuya Tsukamoto, Myung Lee

2. Reliable Network Design Considering Cost to Decrease Failure Probability of Simultaneous Failure
   Yuma Morino and Hiroyoshi Miwa

3. Beacon-less Autonomous Transmission Control Method for Spatio-Temporal Data Retention
   Ichiro Goto, Daiki Nobayashi, Kazuya Tsukamoto, Takeshi Ikenaga, Myung Lee

4. Smart Watering System Based On Framework of Low-Bandwidth Distributed Applications (LBDA) in Cloud Computing
   Nurdiansyah Sirimorok, Mansur As, Kaori Yoshida and Mario Köppen

Time: TBA

INCoS-S3: Blockchain Applications and Intelligent Decision Systems

Chair: Shinji Sakamoto, Seikei University, Japan

1. A Secure Group Communication (SGC) Protocol for a P2P Group of Peers using Blockchain
   Rui Iizumi, Takumi Saito, Shigenari Nakamura, Makoto Takizawa

2. A Study on the Effect of Triads on the Wigner's Semicircle Law of Networks
   Toyoaki Taniguchi and Yusuke Sakumoto

3. Performance Evaluation of RIWM and RDVM Router Replacement Methods for WMNs by WMN-PSOHC Hybrid Intelligent System
   Shinji Sakamoto, Admir Barolli, Phudit Ampririt, Leonard Barolli and Shusuke Okamoto

4. A Decision-making System based on Fuzzy Logic for IoT Node Selection in Opportunistic Networks Considering Node Betweenness Centrality as a New Parameter
   Miralda Cuka, Donald Elmazi, Makoto Ikeda, Keita Matsuo, Leonard Barolli, Makoto Takizawa

The 2nd Day of Conference

Time: TBA

INCoS-S4: Semantics, Ontologies and Data Mining

Chair: Flora Amato, University of Naples "Frederico II", Italy

1. Semi-Automatic Knowledge Base Expansion for Question Answering
   Alessandro Maisto, Giandomenico Martorelli, Antonietta Paone, Serena Pelosi

2. Mina: seMantic vIrtual assistant for domain oNtology based question-Answering
   Nicola Fiore, Gaetano Parente, Michele Stingo, and Massimiliano Polito

3. SafeEat: Extraction of information about the presence of food allergens in recipes
   Alessandra Amato and Giovanni Cozzolino

4. Data Mining on Open Public Transit Data for Transportation Analytics during Pre-COVID-19 Era and COVID-19 Era
   Carson Leung, Yubo Chen, Siyuan Shang, Yan Wen, Connor C.J, Hryhoruk, Denis L. Levesque, Nicholas A. Braun, Nitya Seth, and Prakhar Jain

Time: TBA

INCoS-S5: Security for Wireless and Mobile Networks

Chair: Marek R. Ogiela, AGH University of Science and Technology, Poland

1. Accelerated Neural Intrusion Detection for Wireless Sensor Networks
   Tarek Batiha and Pavel Krömer

2. End-to-End Security for Connected Vehicles
   Kazi J. Ahmed, Marco Hernandez, Myung Lee, Kazuya Tsukamoto

3. Eye Movement Patterns as a Cryptographic Lock
   Marek R. Ogiela and Lidia Ogiela

4. Evolutionary Fuzzy Rules for Intrusion Detection in Wireless Sensor Networks
   Tarek Batiha and Pavel Krömer

Time: TBA

INCoS-S6: Multimedia Computing and Energy-Efficient Systems

Chair: Hiroyoshi Miwa, Kwansei Gakuin University, Japan

1. Gesture-based Human-machine Interface System by Using Omnidirectional Camera
   Liao Sichao, Yasuto Nakamura, and Hiroyoshi Miwa

2. Method for Detecting Onset Times of Sounds of String Instrument
   Kenta Kimoto and Hiroyoshi Miwa

3. Suggesting Cultural Heritage Points of Interest Through a Specialized Chatbot
   Roberto Canonico and Giovanni Cozzolino and Giancarlo Sperlì

4. Considering a Method for Generating Human Mobility Model by Reinforcement Learning
   Yuutaro Iwai and Akihiro Fujihara

5. An Algorithm to Select an Energy-efficient Sever for an Application Process in a Cluster of Servers
   Kaiya Noguchi, Takumi Saito, Dilawaer Duolikun, Tomoya Enokido, Makoto Takizawa