## **PROGRAM GUIDE**



## AINA-2021

The  $35^{th}$  International Conference on Advanced Information Networking and Applications



Virtual Conference (Online Presentation) May 12 - 14, 2021

Technicaly Supported by:



Ryerson University, Canada



Fukuoka Institute of Technology, Japan

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## **AINA-2021 Organizing Committee**

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Leonard Barolli, Fukuoka Institute of Technology, Japan Makoto Takizawa, Hosei University, Japan

## Welcome Message from AINA-2021 Organizers

Welcome to the 35th International Conference on Advanced Information Networking and Applications (AINA-2021). On behalf of AINA-2021 Organizing Committee, we would like to express to all participants our cordial welcome and high respect. AINA is an International Forum, where scientists and researchers from academia and industry working in various scientific and technical areas of networking and distributed computing systems can demonstrate new ideas and solutions in distributed computing systems. AINA was born in Asia, but it is now an International Conference with high quality thanks to the great help and cooperation of many international friendly volunteers. AINA is a very open society and is always welcoming international volunteers from any country and any area in the world. AINA International Conference is a forum for sharing ideas and research work in the emerging areas of information networking and their applications. The area of advanced networking has grown very rapidly and the applications have experienced an explosive growth especially in the area of pervasive and mobile applications, wireless sensor networks, wireless ad-hoc networks, vehicular networks, multimedia computing and social networking, semantic collaborative systems, as well as Grid, P2P, IoT, Big Data and Cloud Computing. This advanced networking revolution is transforming the way people live, work, and interact with each other, and is impacting the way business, education, entertainment, and health care are operating. The papers included in the proceedings covers theory, design and application of computer networks, distributed computing and information systems. Each year AINA receives a lot of paper submissions from all around the world. It has maintained high quality accepted papers and is aspiring to be one of the main international conferences on the Information Networking in the world. We are very proud and honored to have two distinguished keynote talks by Prof. Shahrokh Valaee, University of Toronto, Canada and Dr. Flora Amato, University of Naples "Federico II", Italy, who will present their recent work and will give new insights and ideas to the conference participants. An international conference of this size requires the support and help of many people. A lot of people have helped and worked hard to produce a successful AINA-2021 technical program and conference proceedings. First, we would like to thank all authors for submitting their papers, the session chairs and distinguished keynote speakers. We are indebted to Program 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 thank AINA-2021 General Co-chairs, PC Co-chairs, Workshops Co-chairs for their great efforts to make AINA-2021 a very successful event. We have special thanks to the Finance Chair and Web Administrator Co-chairs. We do hope that you will enjoy the conference proceedings and readings.

> AINA Steering Committee Co-Chairs Leonard Barolli, Fukuoka Institute of Technology, Japan Makoto Takizawa, Hosei University, Japan

> > AINA-2021 General Co-Chairs

Isaac Woungang, Ryerson University, Canada Markus Aleksy, ABB Corporate Research Center, Germany Farookh Hussain, University of Technology Sydney, Australia

AINA-2021 Program Committee Co-Chairs Glaucio Carvalho, Ryerson University, Canada Tomoya Enokido, Rissho University, Japan Flora Amato, University of Naples "Federico II", Italy

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## AINA-2021 Keynote Talk I



## Prof. Shahrokh Valaee, University of Toronto, Toronto, Canada

#### Localization in 6G

**Abstract:** The next generation of wireless systems will employ networking equipment mounted on mobile platforms, Unmanned Air Vehicles (UAV) and low orbit satellites. As a result, the topology of the 6-th Generation (6G) wireless technology will extend to the 3 Dimensional (3D) vertical networking. With its extended service, 6G will also give rise to new challenges which include the introduction of Intelligent Reflective Surfaces (IRS), the mmWave spectrum, the employment of massive MIMO systems and the agility of networks. Along with the advancement in networking technology, the user devices are also evolving rapidly with the emergence of highly capable cellphones, smart IoT equipments and wearable devices. One of the key elements of 6G technology is the need for accurate positioning information. The accuracy of todays positioning systems is not acceptable for many applications of future, especially in smart environments. In this talk, we will discuss how positioning can be a key enabler of 6G and what challenges the next generation of localization technology will face when integrated within the new wireless networks.

## AINA-2021 Keynote Talk II



#### Dr. Flora Amato, University of Naples "Federico II", Naples, Italy

## The Role of Artificial Intelligence in the Industry 4.0

**Abstract:** Artificial Intelligence (AI) deals with the ability of machines to simulate human mental competences. The AI can effectively boost the manufacturing sector, changing the strategies used to implement and tune productive processes by exploiting information acquired at real-time. Industry 4.0 integrates critical technologies of control and computing. In this talk is discussed the integration of Knowledge Representation, Ontology modelling with Deep Learning technology with the aim of optimizing orchestration and dynamic management of resources. We review AI techniques used in Industry 4.0, and show an adaptable and extensible contextual model for creating context-aware computing infrastructures in Internet of Things (IoT). We also address deep learning techniques for optimizing manufacturing resources, assets management and dynamic scheduling. The application of this model ranges from small embedded devices to high-end service platforms. The presented deep learning techniques are designed to solve numerous critical challenges in Industrial and IoT Intelligence, such as application adaptation, interoperability, automatic code verification and generation of a device-specific intelligent interface.



## **AINA-2021 Main Conference and Workshops Program**

Wednesday, May 12, 2021

## AINA-2021 Keynote I

10:00-11:00 (Canada time zone: UTC-4) 16:00-17:00 (Europe time zone:UTC+2) 23:00-24:00 (Japan time zone: UTC+9)

AINA-2021 Keynote Talk I

Prof. Shahrokh Valaee: Localization in 6G

## **Parallel Sessions**

12:30-14:00 (Canada time zone: UTC-4) 18:30-20:00 (Europe time zone:UTC+2) 01:30-03:00 (Japan time zone: UTC+9)

## AINA-S1: Security, Privacy and Trust Computing I

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

- 1. GPU Accelerated Bayesian Inference for QID Discovery in High-dimensional Data Nikolai J. Podlesny, Anne V.D.M. Kayem and Christoph Meinel
- 2. The Novel System of Attacks Detection in 5G Maksim Iavich, Sergiy Gnatyuk, Roman Odarchenko, Razvan Bocu, Sergei Simonov
- 3. Human Centered Protocols in Transformative Computing *Lidia Ogiela, Makoto Takizawa, Urszula Ogiela*
- 4. Off-chain Execution of IoT Smart Contracts Diletta Cacciagrano, Flavio Corradini, Gianmarco Mazzante, Leonardo Mostarda, and Davide Sestili
- 5. Visual Paths in Creation of User-oriented Security Protocols Marek R. Ogiela and Lidia Ogiela
- 6. Identify Encrypted Packets to Detect Stepping-stone Intrusion Jianhua Yang, Lixin Wang, Suhev Shakya and Michael Workman

#### AINA-S2: Wireless Networks and Mobile Computing I

#### Session Chair: Christos Bouras, University of Patras, Greece

- 1. HyDiLLEch: a WSN-based Distributed Leak Detection and Localisation in Crude Oil Pipelines Safuriyawu Ahmed, Frederic Le Mouel, Nicolas Stouls, and Gislain Lipeme Kouyi
- 2. Image Similarity based Data Reduction Technique in Wireless Video Sensor Networks for Smart Agriculture *Christian Salim and Nathalie Mitton*
- Localization of Wireless Sensor Networks Using Negative Knowledge Bilateration Techniques Saroja Kanchi
- 4. User Allocation in 5G Networks Using Machine Learning Methods for Clustering *Christos Bouras and Rafail Kalogeropoulos*
- 5. A Novel Dynamic Authentication Method for Sybil Attack Detection and Prevention in Wireless Sensor Networks

Wadii Jlassi, Rim Haddad, Ridha Bouallegue, Raed Shubair

6. RADAR - Regression based energy-Aware Data Reduction in WSN: Application to Smart Grids Bashar Chreim, Jad Nassar and Carol Habib

#### **AINA-S3: Vehicular Networks I**

#### Session Chair: Fatos Xhafa, Technical University of Catalonia, Spain

1. An Efficient Cross-Layer Design for Multi-hop Broadcast of Emergency Warning Messages in Vehicular Networks

Abir Rebei, Fouzi Boukhalfa, Haifa Touati, Mohamed Hadded and Paul Muhlethaler

2. Bandwidth Slicing with Reservation Capability and Application Priority Awareness for Future Vehicular Networks

Abdullah A. Al-khatib, Abdelmajid Khelil, Mohammed Balfaqih

- 3. An Effective Location-based Alert Messages Dissemination Scheme For Software Defined Vehicular Networks *Raoua Chakroun, Slim Abdellatif and Thierry Villemur*
- Blockchain-Based Trust Management Approach For IoV Amal Hbaieb, Samiha Ayed, Lamia Chaar
- 5. Cooperative and Coordinated Mobile Femtocells Technology in High-Speed Vehicular Environments Mobility and Interference Management

Rand Raheem, Aboubaker Lasebae, Miltos Petridis and Ali Raheem

 Optimization of Task Allocations in Cloud to Fog Environment with Application to Intelligent Transportation Systems Fatos Xhafa, Alhassan Aly and Angel A. Juan

## **AINA-S4: Internet of Things Applications I**

#### Session Chair: Euripides G.M. Petrakis, Technical University of Crete (TUC), Greece

- 1. A New Distributed and Probabilistic Approach for Traffic Control in LPWANs Kawtar Lasri, Yann Ben Maissa, Loubna Echabbi, Oana Iova and Fabrice Valois
- A Fog Computing Simulation Approach Adopting the Implementation Science and IoT Wearable Devices to Support Predictions in Healthcare Environments *Thiago G. Thome, Victor Stroele, Helady Pinheiro and Mario A. R. Dantas*
- 3. Agent-Based Modelling Approach for Decision Making in an IoT Framework Adil Chekati, Meriem Riahi and Faouzi Moussa
- 4. A New Proposal of a Smart Insole for the Monitoring of Elderly Patients Salma Saidani, Rim Haddad, Ridha Bouallegue and Raed Shubair

- 5. A Systematic Approach for IoT Cyber-Attacks Detection in Smart Cities using Machine Learning Techniques Mehdi Houichi, Faouzi Jaidi and Adel Bouhoula
- 6. Benefits of Using WebRTC Technology for Building of Flying IoT Systems *Robert R. Chodorek, Agnieszka Chodorek, and Krzysztof Wajda*

#### **AINA-S5: Machine Learning and Prediction Systems I**

#### Session Chair: Manuel Mazzara, Innopolis University, Russia

- 1. TeleML: Deploying Trained Machine Learning Models in Cross-platform Applications Sirojiddin Komolov, Youssef Youssry Ibrahim and Manuel Mazzara
- 2. Detecting Interaction Activities while Walking using Smartphone Sensors Lukas Ehrmann, Marvin Stolle, Eric Klieme, Christian Tietz and Christoph Meinel
- 3. A Neural Network Model for Fuel Consumption Etimation Chayma Werghui, Amine Kchiche, Noureddine Ben Othman, Farouk Kamoun
- 4. A Multi-view Active Learning Approach for the Hierarchical Multi-Label Classification of Research Papers *Abir Masmoudi, Hatem Bellaaj and Mohamed Jmaiel*
- Deep Learning Library Performance Analysis on Raspberry (IoT Device) Luciana P. Oliveira, Jose Humberto da S. S. Santos, Edson L. V. de Almeida, Jose R. Barbosa, Arley W. N. da Silva, Lucas P. de Azevedo and Maria V. L. da Silva
- 6. Tactful Opportunistic Forwarding: What Human Routines and Cooperation Can Improve? Rafael Lima Costa, Aline Carneiro Viana, Artur Ziviani and Leobino Nascimento Sampaio

#### **Parallel Sessions**

14:30-16:00 (Canada time zone: UTC-4) 20:30-22:00 (Europe time zone:UTC+2) 03:30-05:00 (Japan time zone: UTC+9)

#### AINA-S6: Network Algorithms, Protocols and Applications

#### Session Chair: Isaac Woungang, Ryerson University, Canada

- 1. Time Snchronization for Atomotive Pototyping and Testing Patforms *Esraa Elelimy and Andrew Azmy*
- 2. UAVs Route Planning in Sea Emergencies Nicholas Formica, Leonardo Mostarda and Alfredo Navarra
- 3. Towards Industrial 5G: An LTE+ Case Study Report *Alexander Gogolev and Markus Aleksy*
- 4. Energy-Efficient Fuzzy Geocast Routing Protocol for Opportunistic Networks Kuram Khalid, Isaac Woungang, Sanjay Kumar Dhurandher and Jagdeep Singh
- 5. Using Clusters for Approximate Continuous k-Nearest Neighbour Queries Wendy Osborn
- 6. Scalability Support with Future Internet in Mobile Crowdsourcing Systems *Peron Sousa, Antonio A. de A. Rocha*

#### **AINA-S7: Distributed and Parallel Computing I**

#### Session Chair: Michel Raynal, University of Rennes 1, France

- 1. Time Series Forecasting for the Number of Firefighters Interventions Roxane Elias Mallouhy, Christophe Guyeux, Chady Abou Jaoude and Abdallah Makhoul
- 2. From Incomplete to Complete Networks in Asynchronous Byzantine Systems Michel Raynal and Jiannong Cao
- 3. How Far Should We Look Back to Achieve Effective Real-Time Time-Series Anomaly Detection? *Ming-Chang Lee, Jia-Chun Lin and Ernst Gunnar Gran*
- 4. Performance Analysis of POX and OpenDayLight Controllers based on QoS Parametres Houda Hassen, Soumaya Meherzi, Safya Belghith
- 5. High-level Approach for the Reconfiguration of Distributed Algorithms in Wireless Sensor Networks Emna Taktak, Mohamed Tounsi, Mohamed Mosbah, and Ahmed Hadj Kacem
- 6. The Actual Cost of Programmable SmartNICs: Diving Into the Existing Limits Pablo B. Viegaes, Ariel G. de Castro, Arthur F. Lorenzon, Fabio D. Rossi, Marcelo C. Luizelli

#### AINA-S8: Software-Defined Networking and Network Virtualization

#### Session Chair: Flavio de Oliveira Silva, Federal University of Uberlandia, Brazil

- 1. A Monitoring Aware Strategy for 5G Core Slice Embedding Oussama Soualah Omar Houidi and Djamal Zeghlach
- 2. Intra Data Center MultiPath Optimization with Emulated Software Defined Networks Lucio Agostinho Rocha
- 3. Deploying Scalable and Stable XDP-based Network sSices through NASOR Framework for Low-latency Applications

Rodrigo Moreira, Pedro Frosi Rosa, Rui Luis Andrade Aguiar and Flavio de Oliveira Silva

4. A Comparative Study Between Containerization and Full-Virtualization of Virtualized Everything Functions in Edge Computing

Hugo Gustavo Valin Oliveira da Cunha, Rodrigo Moreira, Flávio de Oliveira Silva

- 5. A Proposal for Application-to-Application Network Addressing in Clean-slate Architectures Alisson O. Chaves, Pedro Frosi Rosa, Flavio O. Silva
- 6. The DynAgentX Framework: Extending the Internet Management to the VCPE in the SD-WAN Context Maxwell E. Monteir

## **AINA-S9: Cloud and Service Computing**

#### Session Chair: Stelios Sotiriadis, Birkbeck University of London, UK

- 1. Smilax: Statistical Machine Learning Autoscaler Agent for FLINK Panagiotis Giannakopoulos and Euripides G.M. Petrakis
- 2. Cluster-Based Distributed Self-Reconfiguration Algorithm for Modular Robots Mohamad Moussa, Benoit Piranda, Abdallah Makhoul and Julien Bourgeois
- 3. A Feasibility Study of Log-based Monitoring for Multi-Cloud Storage Systems Muhammad I.H. Sukmana, Justus Coster, Wenzel Puenter, Kennedy A. Torkura, Feng Cheng, and Christoph Meinel
- 4. Detecting Performance Degradation in Cloud Systems using LSTM Autoencoders Spyridon Chouliaras and Stelios Sotiriadis
- 5. An Ontology for Composite Cloud Services Description Wafa Hidri, Riadh Hadj Mtir and Narjès Bellamine Ben Saoud
- 6. An Adaptive Large-Scale Trajectory Index for Cloud-Based Moving Object Applications Omar Alqahtani and Tom Altman

#### **AINA-S10: Multimedia Systems and Applications**

#### Session Chair: Jolanta Mizera-Pietraszko, Military University of Land Forces, Poland

1. Secure Distribution of Factor Analysis of Mixed Data (FAMD) and Its Application to Personalized Medicine of Transplanted Patients

Sirine Sayadi, Estelle Geffard, Mario Sudholt, Nicolas Vince, Pierre-Antoine Gourraud

- 2. A Novel Monocular Mobile Objects Self-Localization Approach based on Ceiling Vision *Alfredo Cuzzocrea, Luca Camilotti, and Enzo Mumolo*
- Progressive Mobile Web Application Subresource Tampering During Penetration Testing Tobiasz Wróbel, Micha Kdziora, Micha Szczepanik, Piotr P. Jówiak, Alicja M. Jówiak, Jolanta Mizera-Pietraszko
- An Efficient Image Codec using Spline-based Directional Lifting Wavelet Transform and an Optimized EZW Algorithm Rania Boujelbene and Yousra Ben Jemaa
- 5. Architecture for Real-Time Visualizing Arabic Words with Diacritics using Augmented Reality for Visually Impaired People

Imene Ouali, Mohamed Saifeddine Hadj Sassi, Mohamed Ben Halima and Ali Wali

6. Classifying Holes, Voids, Negative Objects and Nothing Katrina Hooper, Alex Ferworn and Fatima Hussain

## **Parallel Sessions**

16:30-18:00 (Canada time zone: UTC-4) 22:30-00:00 (Europe time zone:UTC+2) 05:30-07:00 (Japan time zone: UTC+9)

## AINA-S11:Pervasive Computing and Big Data Analytics

#### Session Chair: Alex Thomo, University of Victoria, Canada

- 1. A Probabilistic Preamble Sampling Anycast Protocol for Low-Power IoT *Tales Heimfarth and Joao Carlos Giacomin*
- Towards an IoT Architecture to Pervasive Environments Through Design Science Mateus Gonçalo do Nascimento, Regina M. M. Braga, José Maria N. David, Mario Antonio Ribeiro Dantas, Fernando A. B. Colugnati
- 3. ASAP Academic Support Aid Proposal for Student Recommendations Gabriel Di iorio Silva, Wagno Leao Sergio, Victor Stroele and Mario A.R. Dantas
- 4. Fast and Scalable Triangle Counting in Graph Streams: The Hybrid Approach *Paramvir Singh, Venkatesh Srinivasan and Alex Thomo*
- 5. A Big Data Science Solution for Analytics on Moving Objects Isabelle M. Anderson-Grégoire, Kaitlyn A. Horner, Carson K. Leung, Delica S. Leboe-McGowan, Anifat M. Olawoyin, Beni Reydman, Alfredo Cuzzocrea
- 6. Triangle Enumeration for Billion-Scale Graphs in RDBMS *Aly Ahmed, Keanelek Enns and Alex Thomo*

#### MAW-S1: Multimedia and Web-based Systems

#### Chair: Kin Fun Li, University of Victoria, Canada

1. Acquisition and Modeling of Website Parameters Krzysztof Zatwarnicki, Stanislav Barton, Damian Mainka

- 2. Present Clinicians with the Most Relevant Patient Healthcare Data through the Integration of Graph DB, Semantic Web and Blockchain Technologies
  - Steven Delaney, Doug Schmidt, Dr. Christopher Chun Ki Chan
- 3. Automatically Injecting Sematic Annotations into Online Articles Hamza Salem, Manuel Mazzara, Said Elnaffar
- 4. A Color Adaptation Method in Picture Story with Emotional Expression of Body Motion *Huynh Thi Kim Chi, Kosuke Takano, Kin Fun Li*
- 5. First-Impression-Based Unreliable Web Pages Detection Does First Impression Work? *Kenta Yamada, Hayato Yamana*
- 6. Gender and Academic Performance: A Case Study in Electrical Engineering *Linlin Zhang, Kin Fun Li*

## Thursday, May 13, 2021

## AINA-2021 Steering Committee Meeting and Discussion

## Friday, May 14, 2021

## **Parallel Sessions**

00:30-02:00 (Canada time zone: UTC-4) 06:30-08:00 (Europe time zone:UTC+2) 13:30-15:00 (Japan time zone: UTC+9)

#### AINA-S12: Security, Privacy and Trust Computing II

#### Session Chair: Hayato Yamana, Waseda University, Japan

- 1. Investigation of Power Consumption Attack on Android Devices Bin Cheng, Tsubasa Kikuta, Yoshinao Toshimitsu and Takamichi Saito
- 2. Lifestyle Authentication using a Correlation between Activity and GPS/Wi-Fi Data *Akira Miyazawa, Tran Phuong Thao and Rie Shigetomi Yamaguchi*
- 3. Empirical Study of Software Adoption Process in the Bitcoin Network *Mitsuyoshi Imamura and Kazumasa Omote*
- 4. Improvement of the Matrix for Simple Matrix Encryption Schem Wenchao Liu, Yingnan Zhang, Xu An Wang, Zhong Wang
- 5. Fast and Accurate Function Evaluation with LUT over Integer-based Fully Homomorphic Encryption *Ruixiao Li and Hayato Yamana*
- 6. SeBeST: Security Behavior Stage Model and its Application to OS Update *Ayane Sano, Yukiko Sawaya, Akira Yamada, Ayumu Kubota*

#### **AINA-S13: Machine Learning and Prediction System II**

#### Session Chair: Wenny Rahayu, La Trobe University, Australia

- 1. Stock Prediction Based On Adaptive Gradient Descent Deep Learning Bo Li and Li-feng Li
- 2. k-Level Contact Tracing Using Mesh Block-based Trajectories for Infectious Diseases *Kiki Adhinugraha, Wenny Rahayu and David Taniar*
- 3. PPCSA: Partial Participation-based Compressed and Secure Aggregation in Federated Learning *Ahmed Moustafa, Muhammad Asad, Saima Shaukat and Alexander Norta*
- 4. An Automatic Kidney Volume Estimation System Using Transfer Learning Techniques Chiu-Han Hsiao, Ming-Chi Tsai, Frank Yeong-Sung Lin, Ping-Cherng Lin, Feng-Jung Yang, Shao-Yu Yang, Sung-Yi Wang, Pin-Ruei Liu, Yennun Huang
- 5. An Empirical Study on Predictability of Software Code Smell Using Deep Learning Models Himanshu Gupta, Tanmay G. Kulkarni, Lov Kumar, Lalita Bhanu Murthy Neti and Aneesh Krishna

#### **AINA-S14: Vehicular Networks II**

#### Session Chair: Makoto Ikeda, Fukuoka Institute of Technology, Japan

- 1. A QoS-aware Fuzzy-based System for Assessment of Edge Computing Resources in SDN-VANETs Ermioni Qafzezi, Kevin Bylykbashi, Phudit Ampririt, Makoto Ikeda, Keita Matsuo, Leonard Barolli
- 2. An Adaptive Anti-Packet Recovery Method for Vehicular DTN Considering Message Possession Rate Shota Uchimura, Masaya Azuma, Yoshiki Tada, Makoto Ikeda and Leonard Barolli
- 3. A Usage-based Insurance Policy Bidding and Support Platform Using Internet of Vehicles Infrastructure and Blockchain Technology

Frank Yeong-Sung Lin, Wen-Yao Lin, Kuang-Yen Tai, Chiu-Han Hsiao, Hao-Jyun Yang

- 4. Mobile Sensing Data Analysis for Road State Decision in a Snow Country *Yoshitaka Shibata, Akira Sakuraba, Yoshikazu Ara, Yoshiya Saito, Jun Hakura*
- 5. Towards the Performance Evaluation of a Trust based Routing Protocol for VANET Amira Kchaou, Ryma Abassi and Sihem Guemara El Fatmi

#### **AINA-S15: Pervasive and Ubiquitous Computing**

#### Session Chair: Keiichi Yasumoto, Nara Institute of Science and Technology, Japan

- 1. CO-BPG: A Centralized Optimizer for Routing in BGP-based Data Center Networks *Chen Duan, Wei Peng and Baosheng Wang*
- SQUAB: A Virtualized Infrastructure for Experiments on BGP and Its Extensions Naoki Umeda, Naoto Yanai, Tatsuya Takemura, Masayuki Okada, Jason Paul Cruz, and Shingo Okamura
- 3. Thermal Environment Simulator for Office Building with Multi-agent-based Simulation Technique *Kodai Murakami, Toshihiro Mega, Noriyuki Kushiro*
- 4. Design of Healthcare Information Sharing Methods using Range-based Information Disclosure Incentives *Miku Honda, Joji Toshima, Takuo Suganuma, Akiko Takahashi*
- Analysis of Visualized Bioindicators Related to Activities of Daily Living Tomokazu Matsui, Kosei Onishi, Shinya Misaki, Hirohiko Suwa, Manato Fujimoto, Teruhiro Mizumoto, Wataru Sasaki, Aki Kimura, Kiyoyasu Maruyama, Keiichi Yasumoto
- 6. Non-Contact Person Identification by Piezoelectric-based Gait Vibration Sensing Keisuke Umakoshi, Tomokazu Matsui, Makoto Yoshida, Hyuckjin Choi, Manato Fujimoto, Hirohiko Suwa, and Keiichi Yasumoto

#### **BICom-S1: Intelligent and Bio-Computing Systems**

#### Chair: Leonard Barolli, Fukuoka Institute of Technology, Japan

- 1. An Improved DOA Estimation Algorithm of Neural Network Based on Interval Division *GuoBin Li, XiaoOu Song, Kun Shan*
- 2. The Application in Handwritten Digit Recognition of Deep Belief Network Based on Improved Genetic Algorithm

Zhu Hong-Xia, Lu Xiu-Hua, Zhu Hong-Ying

- 3. A Fuzzy-based Scheme for Admission Control in 5G Wireless Networks: Improvement of Slice QoS Considering Slice Reliability as a New Parameter *Phudit Ampririt, Ermioni Qafzezi, Kevin Bylykbashi, Makoto Ikeda, Keita Matsuo, Leonard Barolli*
- 4. Evaluation of a User Finger Movement Capturing Device for Control of Self-standing Omnidirectional Robot Kenshiro Mitsugi, Keita Matsuo, Leonard Barolli
- 5. Adaptive Architecture for Fault Diagnosis of Rotating Machinery *Ricardo Rodrguez-Jorge, Laura Sánchez-Pérez, Ji Bla, Ji kvor*

## **Parallel Sessions**

02:30-04:00 (Canada time zone: UTC-4) 08:30-10:00 (Europe time zone:UTC+2) 15:30-17:00 (Japan time zone: UTC+9)

#### **AINA-S16: Distributed and Parallel Computing II**

#### Session Chair: Tomoya Enokido, Rissho University, Japan

- 1. Formal Modeling, Verification, and Analysis of a Distributed Task Execution Algorithm *Amar Nath and Rajdeep Niyogi*
- 2. BO-RL: Buffer Optimization in Data Plane using Reinforcement Learning Sneha M, Kotaro Kataoka and Shobha G
- 3. The Improved Redundant Active Time-Based (IRATB) Algorithm for Process Replication *Tomoya Enokido, Dilawaer Duolikun and Makoto Takizawa*
- 4. Antlion Optimizer based Load-balanced Transaction Scheduling for Maximizing Reliability Dharmendra Prasad Mahato and Van Huy Pham
- 5. Application Relocation Method for Distributed Cloud Environment Considering E2E Delay and Cost Variation *Tetsu Joh, Takayuki Warabino, Masaki Suzuki, Yusuke Suzuki, Tomohiro Otani*

#### **AINA-S17: Intelligent Computing**

#### Session Chair: Leonard Barolli, Fukuoka Institute of Technology, Japan

- 1. Mining Method Based on Semantic Trajectory Frequent Pattern *Chun Liu , Xin Li*
- 2. Network Topology-Traceable Fault Recovery Framework with Reinforcement Learning Tatsuji Miyamoto, Genichi Mori, Yusuke Suzuki and Tomohiro Otani
- Blue-White Veil Classification of Dermoscopy Images using Convolutional Neural Networks and Invariant Dataset Augmentation *Piotr Milczarski, Micha Beczkowski and Norbert Borowski*
- 4. Granulation of Technological Diagnosis in the Algebra of the n-Pythagorean Fuzzy Sets *Anna Bryniarska*
- 5. Training Effective Neural Networks on Structured Data with Federated Learning Anastasia Pustozerova, Andreas Rauber and Rudolf Mayer
- 6. Improved Visual Analytic Process under Cognitive Aspects Samar Bouazizi, Hela Ltifi

#### AINA-S18: Security, Privacy and Trust Computing III

#### Session Chair: Hiroaki Kikuchi, Meiji University, Japan

- 1. Reidentification Risk from Pseudonymized Customer Payment History Hiroaki Kikuchi
- 2. Reinforcement Learning based Smart Data Agent for Location Privacy Harkeerat Kaur, Rohit Kumar, and Isao Echizen
- 3. Anonymous Broadcast Authentication for Securely Remote-Controlling IoT Devices *Yohei Watanabe, Naoto Yanai, and Junji Shikata*
- 4. Comparison of Personal Security Protocols Radoslaw Bulat, Marek R. Ogiela
- 5. Trust-based Detection Strategy against Replication Attacks in IoT Bacem Mbarek, Mouzhi Ge, Toma s Pitner
- 6. An Efficient and Privacy-preserving Billing Protocol for Smart Metering Rihem Ben Romdhane, Hamza Hammami, Mohamed Hamdi, Tai-Hoon Kim

#### **AINA-S19: Internet Computing and Web-based Systems**

#### Session Chair: Farookh Khadeer Hussain, University of Technology Sydney, Australia

- 1. Sentiment-Driven Breakdown Detection Model Using Contextual Embedding ElMo Ebtesam Hussain Almansor, Farookh Khadeer Hussain
- Enhancement of Medical Information Security Through Lightweight Cryptography and Steganography in the platform of Cloud-IoT Ecosystem *Humayra Binte Arfan, Zinia Anzum Tonni, Saria Jahin Taluckder and Rashed Mazumder*
- 3. Proposal of a Disaster Response AI System *Tomoyuki Ishida, Tenma Hirose*
- 4. A Method of Expanding Photo-Based User Preference Profile for the Recommendation of Sightseeing Places *Eriko Shibamoto, Kosuke Takano*
- 5. Prediction of the Response Time in Web Services based on Matrix Factorization Maksymilian Iwanow and Jolanta Wrzuszczak-Noga
- A Novel Hybrid Recommendation Approach Based on Correlation and Co-occurrence between Activities Within Social Learning Network Sonia Souabi, Asmaâ Retbi, Mohammed Khalidi Idrissi, Samir Bennani

#### **AINA-S20: Internet of Things Applications II**

#### Session Chair: Makoto Takizawa, Hosei University, Japan

- 1. An IoT Application Business-Model on top of Cloud and Fog Nodes Zakaria Maamar, Mohammed Al-Khafajiy and Murtada Dohan
- 2. Network Architecture for Agent Communication in Cyber Physical System Masafumi Katoh, Tomonori Kubota, Akiko Yamada, Yuji Nomura, Yuji Kojima, Yuuichi Yamagishi
- 3. Design and Implementation of the TBOI (Time-Based Operation Interruption) Protocol to Prevent Late Information Flow in the IoT

Shigenari Nakamura, Tomoya Enokido and Makoto Takizawa

- 4. Integration of Localization and Wireless Power Transfer using Microwave Kentaro Hayashi, Hikaru Hamase, Yuki Tanaka, Takuya Fujihashi, Shunsuke Saruwatari and Takashi Watanabe
- 5. Fi-SWoT: Secure Federated Service Oriented Architecture for the Semantic Internet of Things *Euripides G.M. Petrakis, Ilias Kontochristos and Karina Rastsinskagia*
- 6. Shoulder and Trunk Posture Monitoring System over time for Seating Persons *Ferdews Tlili, Rim Haddad, Ridha Bouallegue, Raed Shubair*

#### **IOEMLA-S1: Intelligent and Secure Systems**

#### Chair: Omid Ameri Sianaki, Victoria University, Australia

- 1. Social Experiment of Road Sensing on Guided Autonomous Driving Vehicle in Snowy Cold Region *Akira Sakuraba, Goshi Sato, Yoshia Saito, Jun Hakura, Yoshikazu Arai, Yoshitaka Shibata*
- 2. A Cloud-Based Mobile Application for Women with Gestational Diabetes Mahmoud Elkhodr, Shobana Ashokkumar, Belal Alsinglawi, Omar Darwish, Ola Karajeh, Ergun Gide
- 3. Genetic Algorithms for Scheduling Examinations Farshid Hajati, Alireza Rezaee, Soheila Gheisari
- 4. Solving Job Scheduling Problem Using Genetic Algorithm Soheila Gheisari, Alireza Rezaee, Farshid Hajati

## **Parallel Sessions**

04:30-06:00 (Canada time zone: UTC-4) 10:30-12:00 (Europe time zone:UTC+2) 17:30-19:00 (Japan time zone: UTC+9)

## E3WSN-S1: Wireless Networks and Energy Efficient Systems

#### Chair: Leonardo Mostarda, Camerino University, Italy

1. A Hybrid Message Delivery Method for Vehicular DTN Considering Impact of Shuttle Buses and Roadside Units

Masaya Azuma, Shota Uchimura, Yoshiki Tada, Makoto Ikeda, Leonard Barolli

- 2. Optimum Path Finding Framework For Drone Assisted Boat Rescue Missions *Kemal Ihsan Kilic, Leonardo Mostarda*
- 3. Algorithmic Aspects of the Maximum 2-Edge-colorable Subgraph Problem *Alessandro Aloisio, Vahan Mkrtchyan*
- Effective Use of Low Power Heterogeneous Wireless Multimedia Sensor Networks for Surveillance Applications Using IEEE 802.15.4 Protocol Nurdaulet Kenges, Enver Ever, and Adnan Yazici

#### **HWISE-S1: Next Generation Networks**

#### Chair: Leonard Barolli, Fukuoka Institute of Technology, Japan

- 1. Attack of Two Certificateless Aggregate Signature Schemes based on VANET *Lin Shi, Pu Fu*
- 2. Reduction Of Packet Duplication In Broadcasting Inter Vehicular Information Using 5G Network Mezbaul Islam, Fahmida Akter, Ruhul Amin, Ruhul Amin, Raqeebir Rab
- 3. Speed Control for Autonomous Vehicular in Platoon Anis Boubakri, Sonia Metteli Gammar
- 4. Multiple RPL Objective Functions for Heterogeneous IoT Networks *Bishmita Hazarika, Rakesh Matam, Somanath Tripathy*
- A Combination of K-means Algorithm and Optimal Path Selection Method for Lifetime Extension in Wireless Sensor Networks

Wadii Jlassi, Rim Haddad, Ridha Bouallegue, Raed Shubair

6. Performance Comparison of IEEE802.11ac vs IEEE 802.11n WLAN in Ipv6 Samad S. Kolahi, Ahmad Khalid Sooran, Faroq Nasim, Muhammad Mazhar U. Khan

#### **COLLABES-S1:** Collaborative Systems and Applications

#### Chair: Keita Matsuo, Fukuoka Institute of Technology, Japan

1. Implementing a Mobile Healthcare Framework Using Blockchain to Promote Privacy of Electronic Health Records

Arij Alfaidi, Edward Chow

- 2. iNote: a Low Cost Banknote Recognition System for Visually Impaired Persons *Md. Shanjinur Islam, Ashikur Rahman*
- 3. Design of a Diagnostic Support Method Utilizing Interrogation Information in Traditional Chinese Medicine *Ryo Nakagawa, Yuka Komuro, Yui Takahashi, Takashi Seki, Yoshiaki Rikitake, Akiko Takahashi*
- 4. Software-Defined Networking: Open-source alternatives for Small to Medium Sized Enterprises *Paul Thornley, Maryam Bagheri*
- 5. A Survey of Description Methods for Fieldbus Systems *Darshit Pandya*

#### FINA-S1: Multimedia and Ontology-based Systems

#### Chair: Tomoya Enokido, Rissho University, Japan

- 1. A Weak Signal Capture Algorithm Considering DBZP and Half-Bit Difference *Kun Shan, XiaoOu Song, GuoBin Li*
- 2. Sorting Algorithms on ARM Cortex A9 Processor Yomna Ben Jmaa, David Duvivier, Mohamed Abid
- 3. Scalable Leader Election considering Load Balancing Radha Rani, Saurabh Rashpa, Dharmendra Prasad Mahato, Van Huy Pham
- 4. Multi-focus Image Fusion Algorithm Based on Grey Relation of Similarity in Contourlet Domain Lili Jiao, Jie Deng, Lili Zhang, Qiutong Lin
- NEA: An SDN Switch Architecture Suitable for Application-oriented MAC Diego Nunes Molinos, Romerson Deiny Oliveira, Marcelo Silva Freitas, Marcelo Barros de Almeida, Pedro Frosi Rosa, Flavio de Oliveira Silva
- 6. A Survey on Data Science Techniques for Predicting Software Defects Farah Atif, Manuel Rodriguez, Luiz J.P. Araújo, Utih Amartiwi, Barakat. J. Akinsanya, and Manuel Mazzara

#### **CCPI-S1: Cloud Computing Project and Initiatives**

## Chair: Beniamino Di Martino, University of Campania "Luigi Vanvitelli", Italy

- 1. Intelligent Cloud Agents in Multi-participant Conversations for Cyber-physical Exploitation of Cultural Heritage Angelo Ambrisi, Rocco Aversa, Massimo Ficco, Danilo Cacace, Salvatore Venticinque
- 2. E-government and Italian Local Government: Managerial Approach in Two Macro Areas to Improve Managers Culture and Services

Marino, A., Pariso, P., Picariello, M.

- 3. Container based Simulation of Electric Vehicles Charge Optimization Rocco Aversa, Dario Branco, Beniamino Di Martino, Salvatore Venticinque
- 4. Cloud Computing Projects: A Bibliometric Overview Teodor-Florin Fortis, Alexandra-Emilia Fortis
- Applying Patterns to support Deployment in Cloud-Edge environments: A Case Study Beniamino Di Martino, Antonio Esposito
- 6. Obserbot: A Totally Automated Watcher to Monitor Essential Services *Gregorio DAgostino, Alberto Tofani*

#### AINA-S21: Wireless Networks and Mobile Computing II

## Session Chair: Naohiro Hayashibara, Kyoto Sangyo University, Japan

- 1. Message Ferry Routing based on Nomadic Lévy Walk in Wireless Sensor Networks *Koichiro Sugihara and Naohiro Hayashibara*
- 2. Resource Allocation for Millimeter Wave D2D Communications in Presence of Static Obstacles *Rathindra Nath Dutta and Sasthi C. Ghosh*
- A Comparison Study of Two Different Replacement Methods for WMNs by WMN-PSOHC Hybrid Intelligent System Considering Constriction Method and Random Inertia Weight Method Shinji Sakamoto, Leonard Barolli and Shusuke Okamoto
- 4. Performance Evaluation of RIWM and LDVM for WMN-PSOSA-DGA Considering Chi-square Distribution Admir Barolli, Shinji Sakamoto, Phudit Ampririt, Leonard Barolli and Makoto Takizawa
- 5. Joint Channel and Power Allocation Algorithm for Flying Ad Hoc Networks based on Bayesian Optimization *Pengcheng Wang, Wei Pen, Wenxin Zhang, Gaofeng Lv*

#### AINA-2021 Keynote II

06:30-07:30 (Canada time zone: UTC-4) 12:30-13:30 (Europe time zone:UTC+2) 19:30-20:30 (Japan time zone: UTC+9)

#### AINA-2021 Keynote Talk II

Dr. Flora Amato: The Role of Artificial Intelligence in the Industry 4.0

## **Parallel Sessions**

08:00-09:30 (Canada time zone: UTC-4) 14:00-15:30 (Europe time zone:UTC+2) 21:00-22:30 (Japan time zone: UTC+9)

#### **INTRICATE-SEC-S1: Secure Systems and Tools**

#### Chair: Anne Kayem, Hasso-Plattner-Institute, Germany

- 1. A Real-Time Intrusion Detection System for Software Defined 5G Networks *Razvan Bocu, Maksim Iavich, Sabin Tabirca*
- 2. On the Structure and Assessment of Trust Models in Attribute Assurance *Andreas Grüner, Christoph Meinel*
- 3. Virtual Environment for Analysis and Evaluation of DDoS Attacks Ryo Tokuyama, Yuichi Futa, Hikofumi Suzuki, Hiroyuki Okazaki
- 4. Towards a Secure Smart Parking Solution for Business Entities Gerald B. Imbugwa, Manuel Mazzara
- 5. The General Data Protection Regulation and Log Pseudonymization Artur Varanda, Leonel Santos, Rogério Lus de C. Costa, Adail Oliveira, Carlos Rabadão
- 6. A Review of Scaling Genome Sequencing Data Anonymisation Nikolai J. Podlesny, Anne V.D.M. Kayem, Christoph Meinel

#### M2EC-S1: Cloud and Edge Computing

## Chair: Thomas Dreibholz, Simula Metropolitan Centre for Digital Engineering, Norway

- 1. Functionizer A Cloud Agnostic Platform for Serverless Computing Oliviu Matei, Katarzyna Materka, Pawel Skrzypek, Rudolf Erdei
- 2. Interactive Application Deployment Planning for Heterogeneous Computing Continuum Daniel Hass, Josef Spillner
- 3. MEDAL: An AI-driven Data Fabric Concept for Elastic Cloud-to-Edge Intelligence Vasileios Theodorou, Ilias Gerostathopoulos, Iyad Alshabani, Alberto Abelló, David Breitgand
- 4. Adaptive Container Scheduling in Cloud Data Centers: A Deep Reinforcement Learning Approach *Tania Lorido-Botran, Muhammad Khurram Bhatti*
- 5. Reliable Server Pooling Based Workload Offloading with Mobile Edge Computing: A Proof-of-Concept *Thomas Dreibholz, Somnath Mazumdar*

#### **BOSON-S1: Smart and Computing Methods**

#### Chair: Flora Amato, University of Naples "Federico II", Italy

- 1. Unsupervised Classification of Medical Documents Through Hybrid MWEs Discovery Alessandro Maisto
- 2. Building a Pos Tagger and Lemmatizer for the Italian Language *Alessandro Maisto, Walter Balzano*
- 3. Extracting Information from Food-related Textual Sources Alessandra Amato, Francesco Bonavolontà, Giovanni Cozzolino
- 4. PaSy Management of a Smart-Parking System based on Priority Queues Walter Balzano, Walter Galiano, Silvia Stranieri
- 5. An Ontological Model to Represent Food Consumption Risks Alessandra Amato, Francesco Bonavolontà, Giovanni Cozzolino

#### FINA-S2: Blockchain and Secure Systems

#### Chair: Leonard Barolli, Fukuoka Institute of Technology, Japan

- 1. Formal Methods to Analyze Energy Efficiency and Security for IoT: A Systematic Review Luciana Pereira Oliveira, Arley Willer Neves da Silva, Lucas Pereira de Azevedo, Maria Vitória Lima da Silva
- Survey on Blockchain Applications for Healthcare: Reflections and Challenges Swati Megha, Hamza Salem, Enes Ayan, Manuel Mazzara, Hamna Aslam, Mirko Farina, Mohammad Reza Bahrami, Muhammad Ahmad
- 3. Innovative Blockchain-Based Applications State of the Art and Future Directions Hada Alsobhi, Abeer Mirdad, Suhair Alotaibi, Mwaheb Almadani, Inam Alanazi, Moharah Alalyan, Wafa Alharbi, Rania Alhazmi, Farookh Khadeer Hussain
- A Lightweight Authentication Scheme For SDN-Based Architecture In IoT Nadia Kammoun, Ryma Abassi, Sihem Guemara El Fatmi, Mohamed Mosbah
- 5. SVM-Based Ensemble Classifiers to Detect Android Malware *Md Faiz Iqbal Faiz*
- 6. Cryptanalysis of a Privacy Preserving Ranked Multi-Keyword Search Scheme in Cloud Computing *Xu An Wang*

#### SSUM-S1: Smart and Sustainable Mobility

#### Chair: Beniamino Di Martino, University of Campania Luigi Vanvitelli, Italy

1. Evaluation Approach for Smart Charging Ecosystem With Focus on Automated Data Collection and Indicator Calculation

Marit K. Natvig, Shanshan Jiang, Svein Hallsteinsen, Salvatore Venticinque, Regina Enrich Sard

- 2. The Use of Automatic Vehicle Location (AVL) Data for Improving Public Transport Service Regularity Benedetta Argenzio, Nicola Amatucci, Marilisa Botte, Luca DAcierno, Luca Di Costanzo, Luigi Pariota
- 3. Modelling Behavior in a Route Choice Driving Simulation Experiment in Presence of Information *Roberta Di Pace, Stefano de Luca, Francesco Galante, Luigi Pariota*
- 4. A Smart Road Application: The A2 Mediterranean Highway Project in Italy Ilaria Henke, Gennaro Nicola Bifulco, Armando Carteni, Luigi Di Francesco, Antonio Di Stasio
- 5. A Big Data Analysis and Visualization Pipeline for Green and Sustainable Mobility Dario Branco, Beniamino Di Martino, Salvatore Venticinque
- 6. A Simplified Map-matching Algorithm for Floating Car Data Federico Karagulian, Gabriella Messina, Gaetano Valenti, Carlo Liberto, Fabio Carapellucci

## AINA-S22: Security, Privacy and Trust Computing IV

#### Session Chair: Arjan Durresi, Indiana University Purdue University at Indianapolis, USA

- 1. Risk Analysis for Worthless Crypto Asset Networks *Wataru Taguchi and Kazumasa Omote*
- 2. Investigation and Analysis of Features in Decentralized Network Management of Minor Cryptocurrencies Mitsuyoshi Imamura and Kazumasa Omote
- 3. Comparative Study of Traditional Techniques for Unsupervised Autonomous Intruder Detection *Anik Alvi, Tarem Ahmed and Mohammad Faisal Uddin*
- 4. On the Adaptation of Bitcoin-like Blockchains for the Secure Storage of Traffic-related Events *El-hacen Diallo, Omar DIB and Khaldoun Al Agha*
- 5. DoSSec: A Reputation-based DoS Mitigation Mechanism on SDN Ranyelson N. Carvalho, Lucas R. Costa, Jacir L. Bordim and Eduardo Alchieri
- 6. Trustworthy Acceptance: A New Metric for Trustworthy Artificial Intelligence used in Decision Making in Food-Energy-Water Sectors Suleyman Uslu, Davinder Kaur, Samuel J Rivera, Arjan Durresi, Mimoza Durresi and Meghna Babbar-Sebens

#### Online Meeting Schedule for AINA-2021 12 May to 14 May, 2021

	n #1	Roor	m #2	Roop		Deer		D			
Room #1 Meeting ID: 837 6696 8871		Room #2 Meeting ID: 853 6811 3552		Room #3 Meeting ID: 828 3301 9509		Room #4 Meeting ID:826 9619 0326		Room #5 Meeting ID: 899 5476 5435		Room #6 Meeting ID: 811 5172 3263	
Session title	Session Chair	Session title	Session Chair	Session title	Session Chair	Session title	Session Chair	Session title	Session Chair	Session title	Session Chair
AINA-2021 Keynote #1: Prof. Shahrokh Valaee Meeting ID: 837 6696 8871											
AINA-S1	Marek R. Ogiela, Poland	AINA-S2	Christos Bouras, Greece	AINA-S3	Fatos Xhafa, Spain	AINA-S4	Euripides G.M. Petrakis, Greece	AINA-S5	Manuel Mazzara, Russia		
AINA-S6	Isaac Woungang, Canada	AINA-S7	Michel Raynal, France	AINA-S8	Flavio de Oliveira Silva, Brazil	AINA-S9	Stelios Sotiriadis, UK	AINA-S10	Jolanta Mizera- Pietraszko, Poland		
AINA-S11	Alex Thomo, Canada	MAW-S1	Kin Fun Li, Canada								
	AINA-S1 AINA-S6	AINA-S1 Mark R Opela, Paterd AINA-S6 Issae Wavegare, Careford	AINA-S1 Marek 8. Ogesta, AINA-S1 Marek 8. Ogesta, Poland AINA-S2 AINA-S6 Issac Woongang, Caracta AINA-S7	AINA-S1 Marek R. Ogesta, AINA-S1 Marek R. Ogesta, Patand AINA-S2 Christica Bauras, Grance AINA-S6 Itaac Woongang, Canada AINA-S7 Michel Raynal, France	ession title Chair Session title Chair Session title Chair Session title AINA-2 AINA-S1 Marris R. Ogela, AINA-S2 Christos Boares, AINA-S3 AINA-S6 Issae: Woungang, AINA-S7 Michel Reynal, France AINA-S8	March R. Ogela, Putand     AlNA-S2     Christon Burax, General     AlNA-S3     Fates Xeath, Spein       AlNA-S6     Lass Wangang, Canada     AlNA-S7     Michel Reynal, France     AlNA-S8     Fates Xeath, Beard	March R. Ogelin, Puland     AINA-S2     Circlar Circles Reynol, France     AINA-S3     Fates Xouths, Spain     AINA-S4       AINA-S6     Itask: Woungarge, Canada     AINA-S7     Michel Reynol, France     AINA-S8     Fates Xouths, Spain     AINA-S9	ession title Chair Session title Sess	March R- Ogeich AlNA-S2 Christes Boxess, Greece AlNA-S3 Fattes Xharla, Spean AlNA-S4 European Greece Curvises Boxess, Breaks, Greece AlNA-S5   AlNA-S6 Itaas: Woongang, Canada AlNA-S7 Mechel Reynol, France AlNA-S8 Flanto Kontria, Spean AlNA-S9 Statios Statinada, UK AlNA-S10	Jession title Chair Session title Chair Session title Chair Session title Chair   Chair Session title Chair Session title Chair Session title Chair   AINA-S1 Mark R. Ogels, Putand AINA-S2 Chitatas Bauza, Greece AINA-S3 Fates Xeata, Spein AINA-S4 European, Session title AINA-S5   AINA-S6 Lass: Wangang, Canada AINA-S7 Michel Reyns, France AINA-S8 Fates Xeata, Spein AINA-S9 States Setrade, UK AINA-S10 Markat Minare- Petractio, Rhand	Jession title Chair Session title   AINA-S1 Mark R. Ogeis, Puterd AINA-S2 Christes Bours, Greece AINA-S3 Fates Mark, Seein AINA-S4 Europerson AINA-S5 Marware Mazzawa, Bassian   AINA-S6 Mark R. Ogeis, Careefee AINA-S7 Meteri Reyns, France AINA-S8 Fates Mark, Seein AINA-S9 Setion Status, UK AINA-S10 Jatarta Mazzawa, Peterson, Puterson, Puterso

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Thursday, 13 May, 2021	Session title	Session Chair	Session title	Session Chair	Session title	Session Chair	Session title	Session Chair	Session title	Session Chair	Session title	Session Chair
				ļ	AINA-2021 Ste	eering Commit	ttee Meeting a	and Discussio	n			

3rd day:	Room #1		Room #2		Room #3		Room #4		Room #5		Room #6	
Friday, 14 May , 2021	Meeting ID: 837 6696 8871		Meeting ID: 853 6811 3552		Meeting ID: 828 3301 9509		Meeting ID: 826 9619 0326		Meeting ID: 899 5476 5435		Meeting ID: 811 5172 3263	
	Session title	Session Chair	Session title	Session Chair	Session title	Session Chair	Session title	Session Chair	Session title	Session Chair	Session title	Session Chair
Slot 1 00:30-02:00(UTC-4) 06:30-8:00(UTC+2) 13:30-15:00(UTC+9)	AINA-S12	Hayato Yamana, Japan	AINA-S13	Wenny Rahayu, Australia	AINA-S14	Makoto lkeda, Japan	AINA-S15	Kelichi Yasumoto, Japan	BICom-S1	Leonard Barolli, Japan		
Slot 2 02:30-04:00(UTC-4) 08:30-10:00(UTC+2) 15:30-17:00(UTC+9)	AINA-S16	Tomoya Enokido, Japan	AINA-S17	Leonard Barolli, Japan	AINA-S18	Hiroaki Kikuchi, Japan	AINA-S19	Farookh Khadeer Hussain, Australia	AINA-S20	Makoto Takizawa, Japan	IOEMLA-S1	Omid Ameri Sianaki, Australia
Slot 3 04:30-06:00(UTC-4) 10:30-12:00(UTC+2) 17:30-19:00(UTC+9)	E3WSN-S1	Leonardo Mostarda, Italy	HWISE-S1	Leonard Barolli, Japan	COLLABES- S1	Keita Matsuo, Japan	FINA-S1	Tomoya Enokido, Japan	CCPI-S1	Beniamino Di Martino, Italy	AINA-S21	Naohiro Hayashibara, Japan
Slot 4 06:30-07:30 (UTC-4) 12:30-13:30 (UTC+2) 19:30-20:30 (UTC+9)	AINA-2021 Keynote #2: Dr. Flora Amato Meeting ID: 837 6696 8871											
Slot 5 08:00-9:30(UTC-4) 14:00-15:30(UTC+2) 21:00-22:30(UTC+9)	INTRICATE- SEC-S1	Anne Kayem, Germany	M2EC-S1	Thomas Dreibholz, Norway	BOSON-S1	Flora Amato, Italy	FINA-S2	Leonard Barolli, Japan	SSUM-S1	Beniamino Di Martino, Italy	AINA-S22	Arjan Durresi, USA

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