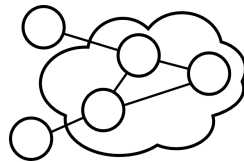


PROGRAM GUIDE



BWCCA-2024

The 19-th International Conference on
Broad-band and Wireless Computing, Communication and Applications
and



3PGCIC-2024

The 19-th International Conference on
P2P, Parallel, Grid, Cloud and Internet Computing
Virtual Conference (Hybrid conferences)
November 13th - November 15th, 2024

Technically Supported by:



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BWCCA-2024 Organizing Committee**Honorary Co-Chairs**

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Leonard Barolli, *Fukuoka Institute of Technology, Japan*

Welcome Message from the BWCCA-2024 International Conference Organizers

Welcome to the 19-th International Conference on Broadband and Wireless Computing, Communication and Applications (BWCCA-2024), which will be held in conjunction with 3PGCIC-2024 International Conference from November 13 to November 15, 2024, in San Benedetto del Tronto, Italy.

This International Conference is a forum for sharing ideas and research work in the emerging areas of broadband and wireless computing. Information networks of today are going through a rapid evolution. Different kinds of networks with different characteristics are emerging and they are integrating in heterogeneous networks. For these reasons, there are many interconnection problems which may occur at different levels of the hardware and software design of communicating entities and communication networks. These kinds of networks need to manage an increasing usage demand, provide support for a significant number of services, guarantee their QoS, and optimize the network resources.

The success of all-IP networking and wireless technology has changed the ways of living the people around the world. The progress of electronic integration and wireless communications is going to pave the way to offer people the access to the wireless networks on the fly, based on which all electronic devices will be able to exchange the information with each other in ubiquitous way whenever necessary.

The aim of this conference is to present the innovative research and technologies as well as developments related to broadband networking, and mobile and wireless communications.

The organization of an International Conference requires the support and help of many people. A lot of people have helped and worked hard to produce a successful BWCCA-2024 technical program and conference proceedings. First, we would like to thank all authors for submitting their papers, Program Committee Members and reviewers who carried out the most difficult work by carefully evaluating the submitted papers.

We thank Web Administrators Co-Chairs and Finance Chair for their excellent work. We would like to express our gratitude to Prof. Makoto Takizawa, Hosei University, Japan and Flavio Corradini, Camerino University, Italy as Honorary Co-Chairs of BWCCA-2024 for their support and help. We give special thanks to Keynote Speakers of BWCCA-2024 and local arrangement team.

We hope you will enjoy the conference proceedings.

3PGCIC-2024 Organizing Committee

Honorary Co-Chairs

Makoto Takizawa, *Hosei University, Japan*

Flavio Corradini, *Camerino University, Italy*

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Yusuke Gotoh, *Okayama University, Japan*

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Makoto Ikeda, *Fukuoka Institute of Technology, Japan*

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Shunya Higashi, *Fukuoka Institute of Technology, Japan*

Local Organizing Co-Chairs

Rosario Culmone, *Camerino University, Italy*

Diletta Cacciagrano, *Camerino University, Italy*

Steering Committee Chair

Leonard Barolli, *Fukuoka Institute of Technology, Japan*

Welcome Message from the 3PGCIC-2024 International Organizing Committee

Welcome to the 19-th International Conference on P2P, Parallel, Grid, Cloud and Internet Computing (3PGCIC-2024), which will be held in conjunction with BWCCA-2024 International Conference from November 13 to November 15, 2024, in San Benedetto del Tronto, Italy.

P2P, Grid, Cloud and Internet computing technologies have been established as breakthrough paradigms for solving complex problems by enabling large-scale aggregation and sharing of computational, data and other geographically distributed computational resources.

Grid Computing originated as a paradigm for high performance computing, as an alternative to expensive supercomputers. The Grid computing domain has been extended to embrace different forms of computing, including Semantic and Service-oriented Grid, Pervasive Grid, Data Grid, Enterprise Grid, Autonomic Grid, Knowledge and Economy Grid.

P2P Computing appeared as the new paradigm after client-server and web-based computing. These systems are evolving beyond file sharing towards a platform for large scale distributed applications. P2P systems have as well inspired the emergence and development of social networking, B2B (Business to Business), B2C (Business to Consumer), B2G (Business to Government), B2E (Business to Employee) and so on.

Cloud Computing has been defined as a “computing paradigm where the boundaries of computing are determined by economic rationale rather than technical limits”. Cloud computing is a multi-purpose paradigm that enables efficient management of data centres, timesharing, and virtualization of resources with a special emphasis on business model. Cloud Computing has fast become the computing paradigm with applications in all application domains and providing utility computing at large scale.

Finally, *Internet Computing* is the basis of any large-scale distributed computing paradigms; it has very fast developed into a vast area of flourishing field with enormous impact on today’s information societies. Internet-based computing serves thus as a universal platform comprising a large variety of computing forms.

The aim of the 3PGCIC conference is to provide a research forum for presenting innovative research results, methods and development techniques from both theoretical and practical perspectives related to P2P, Grid, Cloud and Internet computing.

Many people have helped and worked hard to produce a successful 3PGCIC-2024 technical program and conference proceedings. First, we would like to thank all the authors for submitting their papers, the PC members, and the reviewers who carried out the most difficult work by carefully evaluating the submitted papers.

We thank Web Administrators for their excellent work and support with the Web Submission and Management System of conference. We would like to express our gratitude to Prof. Makoto Takizawa, Hosei University, Japan and Flavio Corradini, Camerino University, Italy as Honorary Co-Chairs of 3PGCIC-2024 for their support and help. We give special thanks to Keynote Speakers of 3PGCIC -2024 and local arrangement team.

We hope you will enjoy the conference proceedings.

BWCCA-2024 & 3PGCIC-2024 Keynote I



Prof. Fatos Xhafa, Technical University of Catalonia, Barcelona, Spain

Title: Offloading in Cloud-to-Thing Continuum

Abstract: With the fast widespread and adoption of Internet technologies, Cloud computing has become a digital ecosystem, referred to as Cloud-to-thing continuum computing, embracing an array of computing paradigms and infrastructures, from large servers and data centers to tiny sensors and actuators at the Edges of the Internet. Thereby, the Intelligent Edge aims at placing intelligence to the end devices, at the edges of the Internet. The premise is that collective intelligence from the IoT data deluge can be achieved and used at the edges of the Internet by offloading the computation burden from the Cloud systems and leveraging real time intelligence. While (parallel) task offloading is a well-known problem from traditional distributed computing, it is more challenging in Cloud-to-thing continuum. In this talk, we will discuss some offloading computing models in Cloud-to-thing continuum, its challenges and opportunities for the Intelligent Edge. In particular, we will discuss the challenges of processing and analyzing the IoT data streams in real time and how offloading and agile optimization can be useful to harnessing the power of the intelligent edge. We will exemplify the discussion by a real-life scenario from augmented workspace based on affective computing and federated learning.

Bio: **Fatos Xhafa**, PhD in Computer Science, is Full Professor at the Technical University of Catalonia (UPC), Barcelona, Spain. He has held various tenured and visiting professorship positions. He was a Visiting Professor at the University of Surrey, UK (2019/2020), Visiting Professor at the Birkbeck College, University of London, UK (2009/2010) and a Research Associate at Drexel University, Philadelphia, USA (2004/2005). Prof. Xhafa has widely published in peer reviewed international journals, conferences/workshops, book chapters, edited books and proceedings in the field (H-index 62). Prof. Xhafa has an extensive editorial service. He is founder and Editor-In-Chief of Internet of Things - Journal - Elsevier (Scopus and WoS Science) and of International Journal of Grid and Utility Computing, (Scopus and WoS Science). Prof. Xhafa is a member of the IEEE Communications Society, IEEE Systems, Man & Cybernetics Society and Founder Member of Emerging Technical Subcommittee of Internet of Things. His research interests include IoT and Cloud-to-thing continuum computing, massive data processing and collective intelligence, optimization, and machine learning, among others. He can be reached at fatos@cs.upc.edu. Please visit <http://www.cs.upc.edu/~fatos/> and <http://dblp.uni-trier.de/pers/hd/x/Xhafa:Fatos>

BWCCA-2024 & 3PGCIC-2024 Keynote II



Dr. Diletta Romana Cacciagrano, University of Camerino, Camerino, Italy

Title: CPSs Modeling Challenge: From Real (Possibly Chaotic, Continuum and Nondeterministic) Systems to Computational Artifacts

Abstract: Cyber Physical System (CPS) is a new generation of digital systems, composed of computational and physical capability that engages with humans like never before. It is designed to act like a network of multiple variables with both physical input and output – rather than standalone technology. This talk examines the role of modeling in the engineering of CPSs. Through several examples, it investigates how chaotic behavior, i.e., the inability of computers to numerically handle a continuum and the incompleteness of determinism, can limit the possibility to build a faithful model- driven approach for engineering CPSs.

Bio: **Diletta Romana Cacciagrano** received the Computer Science degree in 1999 from the University of L'Aquila (Italy), and the Ph.D. degree in Computer Science in 2003 from the University of Roma La Sapienza (Italy). She moved to the University of Penn State (State College, Pennsylvania, USA) in 2002, collaborating with Catuscia Palamidessi on the communication topic in concurrent and distributed systems, by means of suitable process algebras. She also moved to the Ecole Polytechnique (Paris, France) several months in 2005-2006-2007-2008, collaborating with Catuscia Palamidessi and Frank Valencia in an expressiveness study of linearity and persistence in concurrency, by means of suitable process algebras. Since 2004 she is a Researcher in the COMplex SYstems Research Group, (Department of Mathematics and Computer Science, University of Camerino, Italy). She is the UNICAM delegate at the Student Advisory Service for the Master of Science (M.Sc.) degree course in Computer Science. Her research interests are principles of theory of concurrency, formal description techniques and analysis tools for concurrent systems, agent technologies for GRID architectures, formal description and automated testing and verification of Web services, knowledge modeling and ontology languages, operating systems principles and development.

BWCCA-2024 & 3PGCIC-2024 Keynote II



Prof. Inès Chihi, University of Luxembourg, Luxembourg

Title: Advanced Diagnostic techniques and Self-healing Approaches for Enhancing Resilience of Smart Manufacturing Systems

Abstract: Smart manufacturing systems, while transformative, are inherently vulnerable to various faults and failures in hardware, software, or communication networks. These vulnerabilities not only disrupt the operational efficiency of manufacturing systems but also have far reaching implications on sustainability, including increased machine runtime, higher energy consumption, elevated maintenance costs, reduced equipment lifespan, and have greater economic and environmental waste. This talk focuses on the presentation of a new holistic conceptual model designed to address these challenges. The focus will be on advanced diagnostic techniques and self-healing approaches that can significantly enhance the resilience of smart manufacturing systems. By integrating these strategies, we can improve system reliability, reduce downtime, and contribute to more sustainable manufacturing practices.

Bio: Prof. Inès Chihi earned her PhD in Electrical Engineering from the National Engineering School of Tunis, Tunisia in 2013, followed by her "Habilitation Universitaire" in Electrical Engineering in 2019. From 2013 to 2022, she served as an associate professor in Tunisia. From 2017 to 2022, Prof. Chihi was the founder and president of Association of Energy Efficiency and Environment and played a pivotal role as a member of the first Tunisian Network for Energy Transition. She was also actively involved in the Organization for Women in Science for the Developing World, under the UNESCO Program Unit, from 2017 to 2021. In January 2022, she joined the Department of Engineering at the University of Luxembourg, Luxembourg where she leads cutting-edge research in smart sensors and measurement technologies. As the head of Advanced Engineering and Smart Sensors Solutions (AE3S) lab, she focuses on tackling significant scientific challenges by developing innovative approaches in electrical measurement and sensors. The lab's work is distinguished by a deep integration of both methodological and applied research, with a particular focus on the creation of advanced smart sensors designed to monitor, model, and identify complex systems with unpredictable behaviors. The contributions from Prof. Chihi and her team are not only advancing the field of smart sensing but also driving progress toward a sustainable future, with applications across diverse sectors such as bioengineering, energy, and Industry 5.0.



BWCCA-2024

Main Conference and Workshops Program

Wednesday, 13 November, 2024

BWCCA-2024 Keynote I

10:00-11:00 (UTC+1) CET Time Zone (Rome, Italy)

18:00-19:00 (UTC+9) Japan Standard Time

BWCCA-2024 Keynote Talk I

Prof. Fatos Xhafa: Offloading in Cloud-to-Thing Continuum

Coffee Break

11:00-11:30 (UTC+1) CET Time Zone (Rome, Italy)

BWCCA-2024 Keynote II**11:30-12:30(UTC+1) CET Time Zone (Rome, Italy)****19:30-20:30(UTC+9) Japan Standard Time****BWCCA-2024 Keynote Talk II**

Dr. Diletta Romana Cacciagrano: CPSs Modeling Challenge: From Real (Possibly Chaotic, Continuum and Non-deterministic) Systems to Computational Artifacts

Lunch Break**12:30-14:00(UTC+1) CET Time Zone (Rome, Italy)**

Parallel Sessions**14:00-15:30(UTC+1) CET Time Zone (Rome, Italy)****22:00-23:30(UTC+9) Japan Standard Time****BWCCA-S1: Next Generation Wireless Networks****Session Chair: Evjola Spaho, Polytechnic University of Tirana, Albania**

1. Assessment of a Small Scale WMN for Different Number of Mesh Routers and Subway Distribution of Mesh Clients Considering Blend and Simplex Crossovers
Admir Barolli, Evjola Spaho, Shinji Sakamoto, Leonard Barolli, Makoto Takizawa
2. Enhancing Real-Time IoT Applications: Latency Reduction Techniques in 5G MIMO Networks
Chrysostomos Athanasios Katsigiannis, Konstantinos Tsachrelis, Vasileios Kokkinos, Christos Bouras, Apostolos Gkamas, Philippos Pouyioutas
3. A Fuzzy-based System for Handover in 5G/B5G Wireless Networks: Effect of Slice Active Time on Handover Decision
Phudit Ampririt, Shunya Higashi, Ermioni Qafzezi, Makoto Ikeda, Keita Matsuo, Leonard Barolli
4. A Modified Energy-Aware PROPHET DTN Routing Protocol for Low-Energy Networks
Evjola Spaho, Kristjan Toplana, Andeta Ilnica, Gledis Zdrukthi, Kristi Kuqi
5. Multi-Link/Multi-AP Coordination based Joint Transmission for Seamless Roaming in IEEE 802.11 bn (Wi-Fi 8)
Jiha Kim, Hyunhee Park

BWCCA-S2: IoT and Multimedia Networking**Session Chair: Zahoor Ali Khan, Higher Colleges of Technology, UAE**

1. Design and Evaluation of the Network-Based Fog Computing (NBFC) Model for Linear Applications of Sensor Data
Dilawaer Duolikun, Tomoya Enokido, Makoto Takizawa
 2. Development of a Framework for Web-based Collaborative VR Tours Using 360VR Images/Videos
Yoshihiro Okada, Kosuke Kaneko, Wei Shi
 3. Transforming Smart Factories: Real-Time Optimisation of Cyber-Physical Systems with Digital Twins
Kannan Manikandan, Srinidhi Madanagopal, William Davis, Raja Vara Prasad, Hrishikesh Venkataraman, Ramona Trestian, Purav Shah
-

4. SmartCamelHealth: An Innovative System for Real-Time Camel Health Monitoring
Zahoor Ali Khan, Yonatan Tekeste, Natnael Ghebremeskel, Nahom Kidanemariam
 5. Performance of LLMs on Computing Systems for Deployment in IoT Devices
Theodor Radu Grumeza, Thomas Andrei Lazăr, Alexandra Emilia Fortis
-

Coffee Break

15:30-16:00(UTC+1) CET Time Zone (Rome, Italy)

Parallel Sessions

16:00-17:30(UTC+1) CET Time Zone (Rome, Italy)

00:00-01:30(UTC+9) Japan Standard Time

BWCCA-S3: Security and Trust Computing

Session Chair: Leonardo Mostarda, University of Perugia, Italy

1. Hacking Using Social Engineering Detection and Prevention Methods
Ramiz Salama, Leonardo Mostarda, Diletta Cacciagrano, Fadi Al-Turjman
2. Securing FSK-based Paging System using Format Preserving Encryption (FPE)
Insu Oh, Junyoung Park, Sun-Young Lee, Juhyun Jang, Kangbin Yim
3. Comparative Analysis of Machine Learning and Deep Learning Models for Email Spam Classification Using TF-IDF and Word Embedding Techniques
Kamronbek Yusupov, Md Rezanur Islam, Ibromhim Botir Ugli Muminov, Mahdi Sahlabadi, Kangbin Yim
4. Trust Algorithm for the Information Flow Control in the Trust Zone Model
Shigenari Nakamura, Makoto Takizawa
5. Cybersecurity in UAVs: An Intrusion Detection System Using UAVCAN and Deep Reinforcement Learning
Md Rezanur Islam, Kamronbek Yusupov, Ibromhim Botir Ugli Muminov, Mahdi Sahlabadi, Kangbin Yim

BWCCA-S4: Intelligent and Cognitive Computing

Session Chair: Marek R Ogiela, AGH University of Krakow, Poland

1. An Isolation Forest Model for Anomaly Detection in IoT Networks using Directional Graphs
Donald Elmazi, Fatjon Mehmeti
 2. Polymorphic Keys in Multi-Secret Cryptography
Marek R Ogiela, Makoto Takizawa, Lidia D Ogiela
 3. Federated Virtual Sensors for IoT: Applying Machine Learning Algorithms through Federated Averaging and Distributed Intelligence
Klea Elmazi, Donald Elmazi, Jonatan Lerga
 4. Human Sleep Detection System Based on Thermal Camera and Fuzzy Control
Tomooki Matsui, Kyohei Wakabayashi, Chihiro Yukawa, Tetsuya Oda, Leonard Barolli
 5. Lightweight and Accurate FER for Driver Emotion Analysis: Optimizing ResNet with Patch Extraction and Self-Attention Techniques
Ibromhim Botir Ugli Muminov, Kamronbek Yusupov, Md Rezanur Islam, Mahdi Sahlabadi, Kangbin Yim
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-
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Reception Party

18:00-20:00(UTC+1) CET Time Zone (Rome, Italy)

Thursday, 14 November, 2024

BWCCA-2024 Keynote III

10:00-11:00 (UTC+1) CET Time Zone (Rome, Italy)

18:00-19:00 (UTC+9) Japan Standard Time

BWCCA-2024 Keynote Talk III

Prof. Inès Chihi: Advanced Diagnostic techniques and Self-healing Approaches for Enhancing Resilience of Smart Manufacturing Systems

Coffee Break

11:00-11:30 (UTC+1) CET Time Zone (Rome, Italy)

Parallel Sessions

11:30-13:00(UTC+1) CET Time Zone (Rome, Italy)

19:30-21:00(UTC+9) Japan Standard Time

BWCCA-S5: Distributed and Parallel Computing

Session Chair: Tetsuya Shigeyasu, Prefectural University of Hiroshima, Japan

1. Electric Power Transportation System on Battery Swapping EV for Emergency Power Supply while Reducing User Overhead
Mayu Hatamoto, Tetsuya Shigeyasu
 2. Improved Energy-Efficient Role Ordering Scheduler by Reading the Latest Committed Version of Objects
Tomoya Enokido, Dilawaer Duolikun, Makoto Takizawa
 3. A New Priority Based Relay Method Considering Fairness Among Message Generators
Fuka Isayama, Tetsuya Shigeyasu
 4. Min-Max Coverage in Multi-interface Networks: Series-parallel Graphs
Alessandro Aloisio, Francesco Piselli
 5. Sentiment Analysis of Hotel Reviews Using Lexicon-Based Methods: A Comparative Study of VADER and TextBlob
Dahlan Nariman
-

BWCCA-S6: Analysis and Protocols for Wireless Communication (MAPWC-2024)**Session Chair: Makoto Ikeda, Fukuoka Institute of Technology, Japan**

1. Assessment of Six Router Replacement Methods by WMN-PSODGA Simulation System for Boulevard Distribution of Mesh Clients Considering a Small-Scale Wireless Mesh Network
Yusuke Irie, Paboth Kraikritayakul, Shinji Sakamoto, Makoto Ikeda, Keita Matsuo, Leonard Barolli
 2. A Comparison Study of DTAG Recovery Method with Two Integrated DTAG-SpW and DTAG-Epidemic Methods
Shura Tachibana, Makoto Ikeda, Leonard Barolli
 3. A Comparison Study of Three Router Replacement Methods for SPX and UNDX Crossover Methods Considering Two Islands Distribution of Mesh Clients
Paboth Kraikritayakul, Yusuke Irie, Phudit Ampririt, Admir Barolli, Shinji Sakamoto, Leonard Barolli
 4. Performance Evaluation of Fuzzy-based Routing System for Vehicular Opportunistic Networks Considering Delivery Probability and Overhead Metrics
Ermioni Qafzezi, Kevin Bylykbashi, Shunya Higashi, Phudit Ampririt, Keita Matsuo, Leonard Barolli
-

Lunch Break**13:00-14:00(UTC+1) CET Time Zone (Rome, Italy)**

Parallel Sessions**14:00-15:30(UTC+1) CET Time Zone (Rome, Italy)****22:00-23:30(UTC+9) Japan Standard Time****BWCCA-S7: Robot and Vehicle Control and Communication (RVI3C-2024)****Session Chair: Takahiro Uchiya, Nagoya Institute of Technology, Japan**

1. A Fuzzy-Based System for Decision of Driver Mental Status Considering Driver Anxiety Level, Traffic Situation and Driving Operating Time
Yi Liu, Leonard Barolli
2. Proposal of Vehicle Routing System for Disaster Situations
Haruto Domoto, Taiki Naito, Takahiro Uchiya, Ichi Takumi
3. Genetic Algorithm-Based Optimization for Roadside Unit Placement in VANETs: A Multi-Objective Approach
Ronild Hako, Evjola Spaho
4. Design of Robot-Guided Evacuation Method Considering Congestion Status at Stairs
Takahiro Uchiya, Haruto Domoto, Daisuke Doi, Masafumi Hombe, Ichi Takumi

BWCCA-S8: Cloud, Wireless and e-Commerce Security (CWECS-2024)**Session Chair: Fang-Yie Leu, Tunghai University, Taiwan**

1. Detection of DoS Attacks in Cloud Computing: a Machine Learning Approach
Gabriele Capasso, Antonio Esposito
 2. Enhancing Legal Judgment Retrieval by Re-ranking based on Contrastive Implicit Factors
Peng-Yi Lin, Yao-Chung Fan, Fang-Yie Leu
 3. A Motion Analysis System for Danger Prediction During Soldering Process
Kyohei Wakabayashi, Tetsuya Oda, Leonard Barolli
 4. A Job Scheduling Method for Ensuring Long-Term Workload Fairness in Cloud Platforms
Lung-Pin Chen, Leu-Fang Yei, Hsin-Ta Chiao
-

Coffee Break

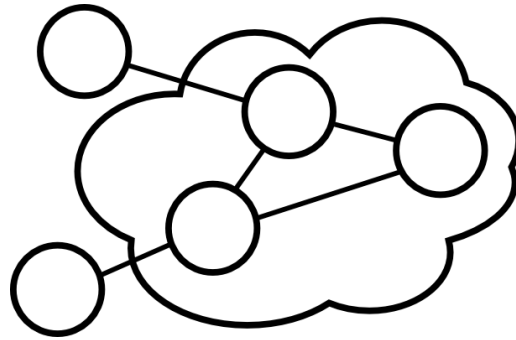
15:30-16:00(UTC+1) CET Time Zone (Rome, Italy)

Banquet Party

18:00-20:00(UTC+1) CET Time Zone (Rome, Italy)

Friday, 15 November, 2024

BWCCA-2024 Organizing Committee Meeting and Discussion



3PGCIC-2024

Main Conference and Workshops Program

Wednesday, 13 November, 2024

3PGCIC-2024 Keynote I

10:00-11:00 (UTC+1) CET Time Zone (Rome, Italy)

18:00-19:00 (UTC+9) Japan Standard Time

3PGCIC-2024 Keynote Talk I

Prof. Fatos Xhafa: Offloading in Cloud-to-Thing Continuum

Coffee Break

11:00-11:30 (UTC+2) CET Time Zone (Rome, Italy)

3PGCIC-2024 Keynote II

11:30-12:30(UTC+1) CET Time Zone (Rome, Italy)

19:30-20:30(UTC+9) Japan Standard Time

3PGCIC-2024 Keynote Talk II

Dr. Diletta Romana Cacciagrano: CPSs Modeling Challenge: From Real (Possibly Chaotic, Continuum and Non-deterministic) Systems to Computational Artifacts

Lunch Break

12:30-14:00(UTC+1) CET Time Zone (Rome, Italy)

Parallel Sessions

14:00-15:30(UTC+1) CET Time Zone (Rome, Italy)

22:00-23:30(UTC+9) Japan Standard Time

3PGCIC-S1: Data Analytics and Management

Session Chair: Shinji Sakamoto, Kanazawa Institute of Technology, Japan

1. A Chatbot for Specialized Domain
Egidia Cirillo, Mattia Fonisto, Marco Giacalone, Alberto Moccardi
2. Single Sign-On System with Local Personal Information Store
Yoshiki Hosoda, Masaki Kohana
3. Some Bibliometric Considerations for Computer Science Conferences
Teodor-Florin Fortiș, Alexandra Emilia Fortis
4. A Fuzzy-based System for Assessment of Tie Strength in Online Social Networks
Shunya Higashi, Phudit Ampririt, Ermioni Qafzezi, Makoto Ikeda, Keita Matsuo, Leonard Barolli
5. Cloud Framework for Data Practitioners for Research and Higher Education Community
Shruthi Sreenivasa Murthy, Kathala Krishnachaitanya Rao, Guangli Zhang

3PGCIC-S2: Security and Privacy

Session Chair: Diletta Cacciagrano, Camerino University, Italy

1. P2FL: Privacy-Preserving Federated Learning Approach for Healthcare Informatics at the Edge
Farhan Ullah, Leonardo Mostarda, Diletta Cacciagrano, Hamad Naeem, Shamsheer Ullah, Pradeep Chaudhary, Yue Zhao
 2. Enhancing Customer-Perceived Value Through Personal Data Utilization in CRM Platforms: A Data Science Perspective
Sutipong Sutinaraphan, Juggapong Natwichai
 3. Connecting AI and Blockchain to Improve Security of Financial Services
Ramiz Salama, Diletta Cacciagrano, Fadi Al-Turjman
 4. A Comprehensive State-of-the-Art Review for Digital Twin: Cybersecurity Perspectives and Open Challenges
Aws Jaber, Ioannis Koufos, Maria Christopoulou
 5. Towards Quantum Machine Learning in Ransomware Detection
Fabio Martinelli, Francesco Mercaldo, Antonella Santone
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Coffee Break

15:30-16:00(UTC+1) CET Time Zone (Rome, Italy)

Parallel Sessions

16:00-17:30(UTC+1) CET Time Zone (Rome, Italy)

00:00-01:30(UTC+9) Japan Standard Time

3PGCIC-S3: Data Management Platforms and Web-based Systems

Session Chair: Masaki Kohana, Chuo University, Japan

1. A Data Platform for the Integration of Smart City Subsystems
Stefano Silvestri, Giuseppe Tricomi, Emanuele Damiano, Mario Sicuranza, Mario Ciampi
2. EDoViT-Alz: Alzheimer's Disease Identification with Vision Transformer Using Extremely Downscaled MRI Data
Diogen Babuc, Alexandra Emilia Fortis
3. A Learning Web System for Website Development
Aino Nakamura, Masaki Kohana
4. A Community Web System for LGBTQ+ Students with Identification
Miyu Sato, Masaki Kohana
5. Digital Twins for Improving Buildings Performances: A Literature Review Methodology Use Case
Ionica Larisa Puiu, Teodor-Florin Fortiş

3PGCIC-S4: Parallel and Distributed Systems

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

1. An Efficient Algorithm to Prevent Procrastination in Spatial Crowdsourcing
Naren Debnath, Sajal Mukhopadhyay, Fatos Xhafa
 2. Minimization of Transfer Time for User Files through Read Control for Backup with Deadline Time
Futa Takahashi, Takayuki Kushida
 3. Distributing Energy Consumption in Multi-Interface Networks: Dimension of Cycle Space
Alessandro Aloisio, Diletta Cacciagrano
 4. A Detour Route Selection Method Based on Node Density in Skip Graph
Riku Kamiya, Tomoya Kawakami
 5. Min-Max Coverage in Multi-interface Networks: Pathwidth
Alessandro Aloisio
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Reception Party

18:00-20:00(UTC+1) CET Time Zone (Rome, Italy)

Thursday, 14 November, 2024**3PGCIC-2024 Keynote III****10:00-11:00 (UTC+1) CET Time Zone (Rome, Italy)****18:00-19:00 (UTC+9) Japan Standard Time****3PGCIC-2024 Keynote Talk III**

Prof. Inès Chihi: Advanced Diagnostic techniques and Self-healing Approaches for Enhancing Resilience of Smart Manufacturing Systems

Coffee Break**11:00-11:30 (UTC+1) CET Time Zone (Rome, Italy)**

Parallel Sessions**11:30-13:00(UTC+1) CET Time Zone (Rome, Italy)****19:30-21:00(UTC+9) Japan Standard Time****3PGCIC-S5: IoT Applications and Mobile Computing Systems****Session Chair: Giamarco Mazzante, Camerino University, Italy**

1. A Scalable State Channel for IoT Using Interactive Consistency Protocols
Giamarco Mazzante, Leonardo Mostarda, Alfredo Navarra, Davide Sestili
2. Blockchain and Digital Twin Integration for Remote Control of Cyber-Physical Systems
Alessandro Bigiotti, Purav Shah, Ramona Trestian
3. Time Series Analysis and Modeling with Federated Learning Techniques in Cloud Edge Scenario: A Case Study on Environmental Air Quality in Homes
Gennaro Junior Pezzullo, Beniamino Di Martino, Oguz Mulayim, Eva Armengol
4. A Comparison Study Between Cuckoo Search and Particle Swarm Optimization Based Intelligent Systems for Optimization of Mesh Routers in a Small-Scale WMN
Shinji Sakamoto, Shigenari Nakamura, Leonard Barolli, Makoto Takizawa
5. Optimising Sea Rescue Missions by UAVs
Sajjad Ghobadi, Francesco Piselli

3PGCIC-S6: Multimedia and Virtual Reality Applications (MWVRTA-2024)**Session Chair: Tomoyuki Ishida, Fukuoka Institute of Technology, Japan**

1. Virtual Hazard Map for Disaster Prevention Education
Yumemi Fukushima, Tomoyuki Ishida
 2. Earthquake Virtual Reality Simulation System for Appropriate Evacuation Actions
Koichi Nishino, Tomoyuki Ishida
 3. Finding Representative Frames from Surveillance Video for Visualizing Viewer Behavior
Kaoru Sugita
-

4. Mixed Reality-Based Japanese Calligraphy Learning System: Development and Evaluation
Riko Oohashi, Tomoyuki Ishida
-

Lunch Break

13:00-14:00(UTC+1) CET Time Zone (Rome, Italy)

Parallel Sessions

14:00-15:30(UTC+1) CET Time Zone (Rome, Italy)

22:00-23:30(UTC+9) Japan Standard Time

3PGCIC-S7: Distributed Intelligence for Sustainable Solutions (DISS-2024)

Session Chair: Peter Hellinckx, University of Antwerp, Belgium

1. A Comparative Sensitivity Analysis of Loss Functions in Machine Learning-based Weather Forecasting
Aaron Van Poecke, Lukas Meuris, Matteo Cisneros, Michiel Van Ginderachter, Peter Hellinckx, Hossein Tabari
2. Autonomous Shipping in Complex Situations
Matteo Cisneros, Oliver Rommens, Renzo Massobrio, Peter Hellinckx
3. Transfer Learning for Traffic State Predictions in Small and Medium-sized Cities
Mohammadmahdi Rahimiasl, Ynte Vanderhoydonc, Siegfried Mercelis, Laure De Cock, Thomas Kusmirczak, Tamara De Swert
4. Evaluating the Impact of Suboptimal HVAC Systems on Control Strategies
Pieter Jan Houben, Stef Jacobs, Renzo Massobrio, Hossein Tabari, Ivan Verhaert, Peter Hellinckx
5. AI for Anticipating Human Behavior
Jeoffrey Canters, Pieter Jan Houben, Renzo Massobrio, Peter Hellinckx

3PGCIC-S8: Signal Processing and Machine Learning (SiPML-2024)

Session Chair: Ricardo Rodriguez Jorge, CEIT Research Center, Spain

1. Mamdani T1 NSFLS for Industrial Image Processing
Pascual Noradino N Montes Dorantes, Adriana Mexicano, Jesús C. Carmona-Frausto, Gerardo Maximiliano Mendez
 2. Weed Detection in a Sunflower Field Using Supervised Learning Techniques
Adriana Mexicano, Jesús C. Carmona-Frausto, Salvador Cervantes, Kevin Eduardo Bee Cruz, Pascual Noradino N Montes Dorantes
 3. Behavior Tree as a Decision Planning Algorithm for Industrial Robots
Martina Hutter-Mironovova, Benjamin Blumhofer, Christopher Schneider, Achim Wagner
 4. A Grey-box Model for Real-time Control and Monitoring
Ricardo Rodríguez Jorge
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Coffee Break

15:30-16:00(UTC+1) CET Time Zone (Rome, Italy)

Banquet Party

18:00-20:00(UTC+1) CET Time Zone (Rome, Italy)

Friday, 15 November, 2024

3PGCIC-2024 Organizing Committee Meeting and Discussion

Hybrid Meeting Schedule for BWCCA-2024 and 3PGCIC-2024, 13 November to 15 November, 2024

| 1st day: Wednesday, 13 November, 2024 | Room #1 Meeting ID: 819 6607 3455 | | Room #2 Meeting ID: 862 8808 6591 | | Room #3 Meeting ID: 898 9091 8425 | | Room #4 Meeting ID: 827 4726 2856 | |
|---|--|-----------------------------|--------------------------------------|---------------------------|--------------------------------------|-----------------------------|--------------------------------------|-----------------------------------|
| | Session title | Session Chair | Session title | Session Chair | Session title | Session Chair | Session title | Session Chair |
| Slot 1 10:00-11:00 (UTC+1) CET Time Zone (Rome, Italy) 18:00-19:00 (UTC+9) Japan Standard Time | BWCCA-2024 and 3PGCIC-2024 Keynote #1: Prof. Fatos Xhafa Meeting ID: 819 6607 3455 | | | | | | | |
| 11:00-11:30 (UTC+1) CET Time Zone (Rome, Italy) | Coffee Break | | | | | | | |
| Slot 2 11:30-12:30(UTC+1) CET Time Zone (Rome, Italy) 19:30-20:30(UTC+9) Japan Standard Time | BWCCA-2024 and 3PGCIC-2024 Keynote #2: Dr. Diletta Romana Cacciagrano Meeting ID:819 6607 3455 | | | | | | | |
| 12:30-14:00(UTC+1) CET Time Zone (Rome, Italy) | Lunch | | | | | | | |
| Slot 3 14:00-15:30(UTC+1) CET Time Zone (Rome, Italy) 22:00-23:30(UTC+9) Japan Standard Time | BWCCA-S1 | Evjola Spaho, Albania | BWCCA-S2 | Zahoor Ali Khan, UAE | 3PGCIC-S1 | Shinji Sakamoto, Japan | 3PGCIC-S2 | Diletta Cacciagrano, Italy |
| 15:30-16:00(UTC+1) CET Time Zone (Rome, Italy) | Coffee Break | | | | | | | |
| Slot 4 16:00-17:30(UTC+1) CET Time Zone (Rome, Italy) 00:00-01:30(UTC+9) Japan Standard Time | BWCCA-S3 | Leonardo Mostarda, Italy | BWCCA-S4 | Marek R Ogiela, Poland | 3PGCIC-S3 | Masaki Kohana, Japan | 3PGCIC-S4 | Fatos Xhafa, Spain |
| 18:00-20:00(UTC+1) CET Time Zone (Rome, Italy) | Reception Party | | | | | | | |
| 2nd day: Thursday, 14 November, 2024 | Room #1 Meeting ID: 819 6607 3455 | | Room #2 Meeting ID: 862 8808 6591 | | Room #3 Meeting ID: 898 9091 8425 | | Room #4 Meeting ID: 827 4726 2856 | |
| | Session title | Session Chair | Session title | Session Chair | Session title | Session Chair | Session title | Session Chair |
| Slot 1 10:00-11:00 (UTC+1) CET Time Zone (Rome, Italy) 18:00-19:00 (UTC+9) Japan Standard Time | BWCCA-2024 and 3PGCIC-2024 Keynote #3: Prof. Inès Chihi Meeting ID: 819 6607 3455 | | | | | | | |
| 11:00-11:30 (UTC+1) CET Time Zone (Rome, Italy) | Coffee Break | | | | | | | |
| Slot 2 11:30-13:00(UTC+1) CET Time Zone (Rome, Italy) 19:30-21:00(UTC+9) Japan Standard Time | BWCCA-S5 | Tetsuya Shigeyasu, Japan | BWCCA-S6 | Makoto Ikeda, Japan | 3PGCIC-S5 | Giamarco Mazzante, Italy | 3PGCIC-S6 | Tomoyuki Ishida, Japan |
| 13:00-14:00(UTC+1) CET Time Zone (Rome, Italy) | Lunch | | | | | | | |
| Slot 3 14:00-15:30(UTC+1) CET Time Zone (Rome, Italy) 22:00-23:30(UTC+9) Japan Standard Time | BWCCA-S7 | Takahiro Uchiya, Japan | BWCCA-S8 | Fang-Yie Leu, Taiwan | 3PGCIC-S7 | Peter Hellinckx, Belgium | 3PGCIC-S8 | Ricardo Rodriguez Jorge, Spain |
| 15:30-16:00(UTC+1) CET Time Zone (Rome, Italy) | Coffee Break | | | | | | | |
| 18:00-20:00(UTC+1) CET Time Zone (Rome, Italy) | Banquet Party | | | | | | | |
| 3rd day: Friday, 15 November, 2024 | Room #1 | | Room #2 | | Room #3 | | Room #4 | |
| | Session title | Session Chair | Session title | Session Chair | Session title | Session Chair | Session title | Session Chair |
| BWCCA-2024 and 3PGCIC-2024 Steering Committee Meeting and Discussion | | | | | | | | |