The 7th The International Conference on Big data, IoT, and Cloud Computing (BIC 2023)
&
The 24th International Conference on Parallel and Distributed Computing, Applications and Technologies (PDCAT 2023)

August 16-18, 2023
Jeju, Korea

Organized by

BIC, PDCAT & KIPS CSWRG

KIPS
Korea Information Processing Society

KIPS CSWRG
Korea Information Processing Society
Computer Software Research Group

2023 International Conferences

(Sponsored / Technically Sponsored by KIPS / KIPS CSWRG)

The 15th International Conference on Computer Science and its Applications (CSA 2023)

- Dec 18-20, 2023, Nha Trang, Vietnam
- http://csa-conference.org/2023

The 17th KIPS International Conference on Ubiquitous Information Technologies and Applications (CUTE 2023)

- Dec 18-20, 2023, Nha Trang, Vietnam
- http://csa-conference.org/2023

The 10th World Congress on Information Technology Applications and Services (World IT Congress 2024)

- February 14-16, 2023 (Jeju, Korea)
- http://www.worlditcongress.org/2024/ (Unopened)

Message from the BIC 2023 General Chair

The 2023 International Conference on Big data, IoT, and Cloud Computing will be held in Jeju, Korea, August 16-18, 2023. The BIC 2023 is the newly renamed conference from highly successful series of the International Conference on Ubiquitous Computing Application and Wireless Sensor Network (UCAWSN) - 4th UCAWSN (July, 2016), 3rd UCAWSN (July, 2015), 2nd UCAWSN (July, 2014), and 1st UCAWSN (July, 2013) since 2013. The BIC 2023 will be the most comprehensive conference focused on Big data, IoT, and Cloud Computing (BIC). The BIC 2023 will provide an opportunity for academic and industry professionals to discuss the latest issues and progress in the area of BIC such as model, algorithms, applications, services, performance and reliability for Big data, IoT, Cloud Computing. Also, the conference will publish high-quality papers which are closely related to the various theories and practical applications in Big data, IoT, and Cloud computing. Furthermore, we expect that the conference and its publications will be a trigger for further related research and technology improvements in those important subjects. Accepted and presented papers highlight new trends and challenges of Computer Science and its Applications. The presenters showed how new research could lead to novel and innovative applications. We hope you will find these results useful and inspiring for your future research.

We would like to express our sincere thanks to Doo-soon Park (SoonChunHyang University, Korea), James J. (Jong Hyuk) Park (SeoulTech, Korea), and Young-Sik Jeong (Dongguk University, Korea). Our special thanks go to the Program Chairs, all Program Committee members and all the additional reviewers for their valuable efforts in the review process, which helped us to guarantee the highest quality of the selected papers for the conference. We cordially thank all the authors for their valuable contributions and the other participants of this conference. The conference would not have been possible without their support. Thanks are also due to the many experts who contributed to making the event a success.

BIC 2023 General Chair

Jungho Kang, Baewha Women's University, Korea
Han-Chieh Chao, National Ilan University, Taiwan
Qun Jin, Waseda University, Japan
Yi Pan, Georgia State University, USA

Message from the BIC 2023 Program Chairs

Welcome to the BIC 2023 which will be held in Jeju, Korea on August 16~18, 2023. The BIC 2023 provides an opportunity for academic and industry professionals to discuss the latest issues and progress in the area of Computer Science. In addition, the conference contains high quality papers which are closely related to the various theories and practical applications in Computer Science. Furthermore, we expect that the conference and its publications will be a trigger for further related research and technology improvements in this important subject. The BIC 2023 contains high quality research papers submitted by researchers from all over the world. Each submitted paper was peer reviewed by reviewers who are experts in the subject area of the paper. Based on the review results, the Program Committee accepted papers.

For organizing an International Conference, the support and help of many people is needed. First, we would like to thank all authors for submitting their papers. We also appreciate the support from program committee members and reviewers who carried out the most difficult work of carefully evaluating the submitted papers. We would like to give my special thanks to Doo-soon Park (SoonChunHyang University, Korea), James J. (Jong Hyuk) Park (SeoulTech, Korea), Young-Sik Jeong (Dongguk University, Korea) as the Steering Chairs of BIC for their strong encouragement and guidance to organize the conference. We would like to thank BIC 2023 General Chairs for their advices to make possible organization of the BIC 2023. We would like to express special thanks to execute members for their timely unlimited support

BIC 2023 Program Chairs

Ji Su Park, Jeonju University, Korea
Arun Kumar Sangaiah, VIT University, India
Jin Wang, Yangzhou University, China

Organization

Honorary Chair
Doo-soon Park, Soonchunhyang University, Korea

Steering Committee
James Park, SeoulTech, Korea
Young-Sik Jeong, Dongguk University, Korea

General Chairs
Jungho Kang, Baewha Women's University, Korea
Han-Chieh Chao, National Ilan University, Taiwan
Qun Jin, Waseda University, Japan
Yi Pan, Georgia State University, USA

General Vice-Chairs
Ka Lok Man, Xi'an Jiaotong-Liverpool University, China
Luis Javier Garcia Villalba, Universidad Complutense de Madrid (UCM), Spain
Neil Yen, University of Aizu, Japan

Program Chairs
Ji Su Park, Jeonju University, Korea
Arun Kumar Sangaiah, VIT University, India
Jin Wang, Yangzhou University, China

Program Co-Chair
Deepak kumar Jain, Chongqing University of Posts and Telecommunications, China
Yan Li, Inha University, Korea

International Advisory Board
Jinmo Kang, President of KIPS, Korea
Nammee Moon, Hoseo University, Korea
Byoungsoo Koh, KOCCA(Korea Creative Content Agency), Korea
Albert Zomaya, University of Sydney, Australia
Hamid R. Arabnia, The University of Georgia, USA
Jianhua Ma, Hosei University, Japan
Mo-Yuen Chow, North Carolina State University, USA
Naveen Chilamkurti, La Trobe University, Australia
Sherali Zeadally, University of the District of Columbia, USA
Victor Leung, The University of British Columbia, Canada
Vincenzo Loia, University of Salerno, Italy
Wanlei Zhou, Deakin University, Australia
Weijia Jia, City U. of Hong Kong, Hong Kong

Publicity Chairs
Aziz Nasridinov, Chungbuk National University, Korea
Byung Seok Shin, Inha University, Korea
Deok-Gyu Lee, Seowon University, Korea
Hwamin Lee, Soonchunhyang University, Korea
Jinho Park, Soongsil University, Korea

KIPS Korea Information Processing Society
KIPS CSWRG Korea Information Processing Society Computer Software Research Group

Joon-Min Gil, Daegu Catholic University, Korea
Jun-Ho Huh, National Korea Maritime and Ocean University, Korea
Kwang-il Hwang, Incheon National University, Korea
Seokhong Min, Mindata co, Korea
Wei Song, North China University of Technology, China
Byoungwook Kim, Dongguk University, Korea
Eunyoung Lee, Dongduk Women's University, Korea
Yoo-jae Won, Chungnam National University, Korea

Industrial Cooperation Chairs
Yong Woo Lee, Ssangyong Information & Communications Corp, Korea
Sung Chul Yu, LG Hitachi.LTD, Korea
Sung Gil Kim, VAIV Company inc., Korea
Bong Sang Seo, ALL4LAND co.,LTD, Korea
Se Jong Kim, SJ Info & Communications CO.,LTD, Korea
Tae Yoon Kwon, Neighbor system co.,Ltd , Korea
Han Su Cheon, Selim TSG Co.,Ltd , Korea
Seokhong Min, MINDATA Corporation, Korea

Local Arrangement Chairs
Hyun-Woo Kim, Baewha Women's University, Korea
Min Choi, Chungbuk National University, Korea

Message from the PDCAT 2023 General Chairs

The 24th International Conference on Parallel and Distributed Computing, Applications and Technologies (PDCAT) is a major forum for scientists, engineers, and practitioners throughout the world to present their latest research, results, ideas, developments and applications in all areas of parallel and distributed computing. Beginning in Hong Kong in 2000, PDCAT-23 will be held in Jeju, Korea after 24 years of successful journey through various countries/regions including Taiwan, Japan, China, Singapore, Australia, New Zealand, and Korea across Asia-Oceania. We are inviting new and unpublished papers.

The conference papers included in the proceedings cover the following topics: PDCAT of Networking and Architectures, Software Systems and Technologies, Algorithms and Applications, and Security and Privacy. Accepted and presented papers highlight new trends and challenges of Parallel and Distributed Computing, Applications and Technologies. We hope readers will find these results useful and inspiring for their future research. Our special thanks go to the Program Chairs: Ji Su Park(Jeonju University, Korea), Hiroyuki Takizawa(Tohoku University, Japan), Hui Tian (Griffith University, Australia) and all Program Committee members and all reviewers for their valuable efforts in the review process that helped us to guarantee the highest quality of the selected papers for the conference.

PDCAT 2023 General Chairs

James Park,SeoulTech, Korea
Hong Shen, Sun Yat-sen University, China

Organization

Honorary Chair
Doo-soon Park, SoonChunHyang University, Korea

General Chairs
James Park,SeoulTech, Korea
Hong Shen, Sun Yat-sen University, China

Program Chairs
Ji Su Park, Jeonju University, Korea
Hiroyuki Takizawa, Tohoku University, Japan
Hui Tian, Griffith University, Australia

Workshop Chairs
Michael Hwa Young Jeong, Kyung Hee University, Korea
Neil Y. Yen, The University of Aizu, Japan

Publicity Chairs
Sushil Kumar Singh, SeoulTech, Korea
Yong Zhang, Shenzhen Inst. of Adv. Tech., China
Byeong-Seok Shin, Inha University, Korea
Kwang-il Hwang, Incheon National University, Kore
Joon-Min Gil, Daegu Catholic University, Korea
Deok-Gyu Lee, Seowon University, Korea
Byoungwook Kim, Gangneung-Wonju National University, Korea

Local Arrangement Chair
Yan Li, Inha University, Korea
Yeongwook Yang, Hanshin University, Korea

Registration and Finance Chair
Jungho Kang, Baewha Woman University, Korea

Program Committee
Yuebin Bai, Baihang University, China
Raj Bayyar, University of Melbourne, Australia
Guoliang Chen, U. of Sci. & Tech. of China, China
Lin Chen, Sun Yat-sen University, China
Yawen Chen, Otago University, New Zealand
Luo Cao, Wuyi University, China
Huanwei He, Zhangshan College, China
Zhenxiong Hou, Northwestern Poly University, China
Shi-Jin Horng, Nat. Taiwan U. of Sci. and Tech, China
Longkun Guo, Fuzhou University, China
Mingyu Guo, University of Adelaide, Australia
Mirjana Ivanovic. Univ. of Novi Sad, Serbia
Teofilo Gonzalez, Univ. of Calif. Santa Barbara, USA
Ajay Gupta, Univ. of Western Michigan, USA
Huaxi Gu, Xidian Unviersity, China
Francis Lau, Univ. of Hong Kong, China
Shuangjuan Li, South China U. of Agriculture, China
Yidong Li, Beijing Jiaotong Univ, China

Invited Speaker

Smart Computing and Networking: Challenges and Opportunities

Hong Shen

Professor
Faculty of Applied Sciences
Macao Polytechnic University, Macao Special Administrative Region, China

Abstract

Driven by the increasing demands of large-scale cross-domain data processing and sharing from various applications of our modern society, smart computing and networking is evolving to be a critically important development direction of the current information and communication technologies. In this talk, I will first overview the recent advances of computing and communication technologies, and as well as their emerging convergence spotlighted by data center networks, space Internet, satellite Internet and computing power networks. Then, focusing on the major challenges in efficiency, resilience and security for data center networks, I will show our recent work in these dimensions. Particularly, as an illustration of bridging high-performance computing and AI, I will present our work on machine-learning enhanced smart scheduling of computation tasks in data center networks by combining greedy optimization with deep reinforcement learning. Our method takes advantage of the merits of both models to improve the overall performance while ensuring the worst-case performance guarantee. It exemplifies a promising approach of combining machine learning and traditional optimization techniques to empower the resulting method for solving hard application problems. Finally, I will conclude the talk by displaying our on-going work in smart computing and networking.

Biography:

Hong Shen is a Professor in Macao Polytechnic University and specially-appointed Professor in Sun Yat-sen University, China. He is also an Adjunct Professor in University of Adelaide, Australia, where he was a tenured Professor (Chair of Computer Science) for 15 years. He received the BS degree from Beijing University of Science and Technology, MS degree from University of Science and Technology of China, and PhD degree from Abo Akademi University, Finland. With main research interests in parallel and distributed computing, privacy preserving computing, network optimization and data mining, he has led numerous research centers and projects in different countries. He has published 400+ papers including over 100 papers in major international journals such as a variety of IEEE and ACM transactions. Prof. Shen received many honors and awards, and served on different roles in professional societies, journal editorial boards and conference committees.

Invited Speaker 2

Cyber-Physical-Social Intelligence

Laurence T. Yang

Professor
FCAE, FEIC, MAE, FIEEE, FIET
Hainan University, China

Abstract

The booming growth and rapid development in embedded systems, wireless communications, sensing techniques and emerging support for cloud computing and social networks have enabled researchers and practitioners to create a wide variety of Cyber-Physical-Social Systems (CPSS) that reason intelligently, act autonomously, and respond to the users' needs in a context and situation-aware manner, namely Cyber-Physical-Social Intelligence. It is the integration of computation, communication and control with the physical world, human knowledge and sociocultural elements. It is a novel emerging computing paradigm and has attracted wide concerns from both industry and academia in recent years. This talk will present our latest research on Cyber-Physical-Social Intelligence. Corresponding case studies in some typically applications will be shown to demonstrate the feasibility and flexibility.

Biography:

Laurence T. Yang got his BE in Computer Science and Technology and BSc in Applied Physics both from Tsinghua University, China and Ph.D in Computer Science from University of Victoria, Canada. He is the Academic Vice-President and Dean of School of Computer Science and Technology, Hainan University, China. His research includes Cyber-Physical-Social Intelligence. He has published 300+ papers in the above area on top IEEE/ACM Transactions with total citations of 36553 and H-index of 96 including 8 and 40 papers as top 0.1% and top 1% highly-cited ESI papers, respectively.

His recent honors and awards include the member of Academia Europaea, the Academy of Europe (2021), the John B. Stirling Medal (2021) from Engineering Institute of Canada, IEEE Sensor Council Technical Achievement Award (2020), IEEE Canada C. C. Gotlieb Computer Medal (2020), Clarivate Analytics (Web of Science Group) Highly Cited Researcher (2019, 2020, 2022), Fellow of Institution of Engineering and Technology (2020), Fellow of Institute of Electrical and Electronics Engineers (2020), Fellow of Engineering Institute of Canada (2019), Fellow of Canadian Academy of Engineering (2017).

PROGRAM Schedule for BIC 2023 & PDCAT 2023

Day 1, August 16, 2023				
Time	**Min**	**HALL A**	**HALL B**	**HALL C**
08:40-09:00	20	**Registration**		
09:00-10:40	100	**Online Session A-1 PDCAT**	**Session B-1 BIC Chair: Jung-In Choi**	
10:40-10:50	10	**Coffee Break**		
10:50-12:30	100	**Session A-2 PDCAT Chair: Yan Li**	**Session B-2 BIC Chair: Im Jung**	
12:30-13:30	60	**Lunch**		
13:30-14:20	50	**Keynote Speech: Hong Shen "Smart Computing and Networking: Challenges and Opportunities" Chair: Kwang-il Hwang**		
14:20-16:10	100	**Session A-3 PDCAT Chair: Joon-Min Gil**	**Session B-3 BIC Chair: Aeyoung Kim**	**Session C-3 Korea-China R&D Workshop**
16:10-16:20	10	**Coffee Break**		
16:20-18:00	100	**Session A-4 PDCAT Chair: Eun-Seok Lee**	**On/Offline Session B-4 BIC & Emerging ICT**	**Session C-4 Korea-China R&D Workshop**
18:00-18:30	30	**Break**		
18:30-20:00	90	**Banquet Keynote Speech: Laurence T. Yang "Cyber-Physical-Social Intelligence" Chair: Kwang-il Hwang**		

KIPS Korea Information Processing Society
KIPS CSWRG Korea Information Processing Society Computer Software Research Group

Day 2, August 17, 2023		
Time	**Min**	**HALL A**
09:30-10:00	30	**Registration (Open only until 11:30)**
10:00-11:40	100	**On/Offline Session A-1 BIC & PDCAT & Emerging ICT**
11:40-13:00	80	**Lunch**
13:00-15:30	150	**Local Arrangement Committee Meeting – BIC 2023 (Only for Invited Members)**
15:30-18:00	150	**Local Arrangement Committee Meeting – PDCAT 2023 (Only for Invited Members)**

Day 3, August 18, 2023		
Time	**Min**	**HALL -A**
10:00-12:00	120	**Organizing Committee Meeting - BIC 2023 (Only for Invited Members)**
12:00-13:00	60	**Lunch**
13:00-15:00	120	**Organizing Committee Meeting – PDCAT 2023 (Only for Invited Members)**

1. **A paper presentation should be made by one of authors of the paper for A paper presentation should be made by one of authors of the paper for 15 minutes (12 minutes for the presentation itself and 3 minutes for Q/A).**
2. **All speakers of each session should meet the session chair at their room 15 minutes before the session begins.**
3. **Windows 10 laptops running the Adobe Reader and Microsoft Office for paper presentations will be prepared. Please prepare for your presentation.**
4. **All online sections are played recorded video only.**
5. **For Q&A in the online section, please email the author.**

DETAILED SCHEDULE FOR
The 7th The International Conference on Big data, IoT, and Cloud Computing (BIC 2023)
&
The 24th International Conference on Parallel and Distributed Computing, Applications and Technologies (PDCAT 2023)

Day 1, August 16, 2023 (Wednesday)

08:40-09:00 Registration

09:00-10:40 Online Session A-1 PDCAT

1. **A Task Offloading and Content Caching Strategy for the Internet of Vehicles in Cloud-Edge Environment**
   Yaping Wang, Junye Qiao, Zekun Hu, Pengwei Wang
2. **A Data-Centric Approach for Efficient and Scalable CFD Implementation on Multi-GPUs Clusters**
   Ruitian Li, Liang Deng, Zhe Dai, Jian Zhang, Jie Liu, Gang Liu
3. **Research on Psychological Testing Methods of Criminal Suspects Based on Multi-features of EEG**
   Peng Yijie, Zhao Xiaofan
4. **Insider Trading Detection Algorithm in Industrial Chain Based on Logistics Time Interval Characteristics**
   Fulin Chen, Kai Di, Hansi Tao, Yuanshuang Jiang, Pan Li
5. **Fine Time Granularity Allocation Optimization of Multiple Networks Industrial Chains in Task Processing Systems**
   Pan Li, Kai Di, Xinlei Bai, Yuanshuang Jiang, Fulin Chen
6. **epsilon-Maximum Critic Deep Deterministic Policy Gradient for Multi-Agent Reinforcement Learning**
   Yuanshuang Jiang, Kai Di, Zhongjian Hu, Fulin Chen, Pan Li, Yichuan Jiang
7. **An End-to-End Multiple Hyper-Parameter Prediction Method for Distributed Constraint Optimization Problem**
   Chun Chen, Yong Zhang, Li Ning, Shengzhong Feng
8. **Action Segmentation Based on Encoder-Decoder and Global Timing Information**
   Yichao Liu, Yiyang Sun, Zhide Chen, Chen Feng, Kexin Zhu

09:00-10:40 Session B-1 BIC
(Chair: Jung-In Choi)

1. **A Scalable Framework Leveraging Co-Purchase History for Optimal Representation of Core Purchase Preferences in Customer Segments**
   Seonghyun Kim, Doyeon Kwak
2. **ReLIRec: Reinforcement Learning for Interactive Recommendation Systems**
   Sony Peng, Yixuan Yang, Sophort Siet, Sadriddinov Ilkhomjon, DaeYoung Kim, Doo-Soon Park
3. **Movie Recommendation System Using KNNbaseline and Deep Learning**
   Sophort Siet, Sony Peng, Yixuan Yang, Sadriddinov Ilkhomjon, Mi-Sun Kang, Doo-Soon Park
4. **Generalizing to unseen domains via Adaptive Spectral Random Convolution for Medical Image Segmentation**
   Zuyu Zhang, Yan Li, Byeongseok Shin
5. **Study on Agricultural AI model serving system for Interoperability**
   Jung-Ho Um, YoungHo Shin, Minyeong Hwang, Juseop Kim, Suntae Kim, Hwan Suk Cheong

10:40-10:50 Coffee Break

10:50-12:30 Session A-2 PDCAT
(Chair: Yan Li)

1. **R-RPT- A Reliable Routing Protocol for Industrial Wireless Sensor Networks**
   Roy Kripanita, Myung-Kyun Kim
2. **Packet Tracer Simulation Tool as Pedagogy to Improve Learning and Teaching of Computer Network Concepts**
   Femi Elegbeleye, Munienge Mbodila, Saphulele Ngcobo, Omobayo Esan
3. **A blockchain system for fake news detection**
   Janusz Bobulski
4. **Formalization and Verification of the Zab Protocol Using CSP**
   Wenting Dong, Jiaqi Yin, Sini Chen, Huibiao Zhu
5. **Parallelizable Loop Detection using Pre-trained Transformer Models for Code Understanding**
   Soratouch Pornmaneerattanatri, Keichi Takahashi, Yutaro Kashiwa, Kohei Ichikawa, Hajimu Iida
6. **SAHF-LightPoseResNet: Spatially-aware Attention-based Hierarchical Features Enabled Lightweight PoseResNet for 2D Human Pose Estimation**
   Ali Zakir, Sartaj Ahmed Salman, Hiroki Takahashi
7. **List-Based Workflow Scheduling Utilizing Deep Reinforcement Learning**
   Wei-Cheng Tseng, Kuo-Chan Huang

10:50-12:30 Session B-2 BIC
(Chair: Im Jung)

1. **Effective Machine Learning Approach for Accurate Recognition of Ship Digits**
   Suleiman Tundea, Abdulkabir Abdulraheem, Im Jung
2. **Supervised Classifier for Special Dataset of Diverse Engraved Digits**
   Abdulkabir Abdulraheem, Suleiman Tundea, Im Jung
3. **Design and Implementation of Health Monitoring Platform**
   Mingeun Son, Min Choi
4. **Adoption of Artificial Intelligence in the Construction Life Cycle: Scientometric Analysis and Systematic Review of SWOT**
   Nyein Mon Shwe Linn, Jae-ho Choi
5. **Service-aware Resource Management in Cloud computing for HPC workload**
   A-Young Son, Hyeyoung Cho, Junyoung Park, Gi-Mun Jeong
6. **Efficient Edge Computing-based Compression Method for LiDAR Detection Data**
   Eun-Seok Lee, Young-Chul Kim, Yoonyim Lee, Sung Hyun Lee, Byeong-Seok Shin

12:30-13:30 Lunch

13:30-14:20 Keynote Speech
(Chair: Kwang-il Hwang)

Smart Computing and Networking: Challenges and Opportunities
Prof. Hong Shen

14:20-14:30 Coffee Break

14:30-16:10 Session A-3 PDCAT
(Chair: Joon-Min Gil)

1. **Link Attributes Based Multi-Service Routing for Soft-ware-Defined Satellite Networks**
   Xueyu Lu, Wenting Wei, Liying Fu, Dong Zhang
2. **Effective Density-based Concept Drift Detection for Evolving Data Streams**
   Zelin Cui, Hui Tian, Hong Shen
3. **Federated Learning for Skin Cancer Classification**
   Zhe Kai Xu, Yan We Lin
4. **A Fuzzy Logic RAT Selection Scheme in SDN-Enabled 5G HetNets**
   Khitem Ben Ali, Faouzi Zarai
5. **Dynamic Priority Coflow Scheduling in Optical Circuit Switched Networks**
   Hongkun Ren, Hong Shen, Xin Wang
6. **Deep Reinforcement Learning Based Multi-WiFi Offloading of UAV Traffic**
   Zhiyong Liu, Hong Shen

14:30-16:10 Session B-3 BIC
(Chair: Aeyoung Kim)

1. **T-test-based TVLA Review for lightweight encryption in a drone environment**
   Juhee Lee, Geunshik Han, Aeyoung Kim
2. **Confidence Interval-Based Position Recognition Technique for Autonomous Indoor Drone Navigation**
   Jung-In Choi, Juhee Lee, Jiwon Lee, Aeyoung Kim
3. **Design of QDT-based anomaly detection model for autonomous drones**
   Jung-In Choi, Juhee Lee, Aeyoung Kim
4. **A Study on Dynamic Motion Comparison**
   Jun-Hyuk Choi, Kwang-il Hwang
5. **CI/CD cluster construction and service for HPC service on EDISON platform**
   Ye Jin Kwon, Jeong Cheol Lee
6. **CoHA: Context-optimized Hybrid Autoscaling Scheme based on Reinforcement Learning and Deep Learning**
   Byeonghui Jeong, Jueun Jeon, Young-Sik Jeong

16:10-16:20 Coffee Break

16:20-18:00 Session A-4 PDCAT
(Chair: Eun-Seok Lee)

1. **Triple-Path RNN Network: A Time-and-Frequency Joint Domain Speech Separation Model**
   Yu-Huan Zhai, Qiang Hua, Xiao-Wen Wang, Chun-Ru Dong, Feng Zhang, Da-Chuan Xu
2. **Design of query based gallery selector and mask-aware loss for person search**
   Qiang Hua, Ao Sun, Yu-chen Liu, Feng Zhang, Chun-ru Dong, Da-Chuan Xu
3. **The Prediction Model of Water Level in Front of the Check Gate of the LSTM Neural Network Based on AIW-CLPSO**
   Linqing Gao, Dengzhe Ha, Litao Ma, and Jiqiang Chen
4. **Privacy-preserving Retrieval Scheme over Encrypted Medical Records with Relevance Ranking**
   Wanting Lei, Xiehua Li, Yingzhu Wang, Xiaoyu Mei
5. **A Privacy-Preserving Blockchain Scheme for the Reliable Exchange of IoT Data**
   Mnar Alnaghes, Nickolas Falkner, Hong Shen
6. **Security Challenges and Lightweight Cryptography in IoT: Comparative Study and Testing Method for PRESENT-32bit Cipher**
   Ngo Van Nam, Le Anh Ngoc, Do-Hyeun Kim

16:20-18:00 On/Offline Session B-4 BIC& Emerging ICT

1. **Design and Analysis of High-weight Drones for Wireless Quantum Communication**
   Tae Woo Kim, Keun-ho Kim, Yo Han Sohn, Il Chul Shin
2. **Basic model and scenario research for utilization in quantum cryptography communication**
   Seo Yeon Moon, Tae Woo Kim, O Sub Cha, Il Chul Shin
3. **MEC-enabled CCTV Network Inference Framework for Real-Time Personal Identifiers Detection, De-identification, and Re-identification**
   Sekione Reward Jeremiah, Jong Hyuk Park
4. **Quantum-Powered Secure Multi-Party Collaboration Framework for Smart Manufacturing**
   Haotian Chen, Jong Hyuk Park
5. **FPGA-Based Edge-Cloud Collaborative Computing System for Low-latency Real-time Image deidentification in CCTV System**
   Abir El Azzaoui, Jong Hyuk Park
6. **GPU memory management techniques to prevent GPU memory monopoly for small training jobs in a container environment with shared the GPU**
   Jihun Kang, Joon-Min Gil

18:00-18:30 Break

18:30-20:00 Banquet

Day 2, August 17, 2023 (Thursday)

09:30-10:00 Registration

10:00-11:40 On/Offline Session A-1 BIC & PDCAT& Emerging ICT

1. **Using MPIs Non-Blocking Allreduce for Health Checks in Dynamic Simulations**
   Jana Gericke, Harald Klimach, Neda Ebrahimi Pour, Sabine Roller
2. **SSR-MGTI: Self-Attention Sequential Recommendation Algorithm based on Movie Genre Time Interval**
   Wen Yang, Ruibo Yue, Yawen Chen, Jun Zhao
3. **Quantum-based MACsec Protocol for Secure Communication in Network Environment**
   Byunghyun Jo, Jong Hyuk Park
4. **Servey on Machine Learning-Based Network Security System for Secure Smart City Environments**
   Heeji Park, Jong Hyuk Park

5. **Servey on Machine Learning based User Privacy Protection in CCTV Environment**
   Jimin Ha, Jong Hyuk Park
6. **AI-enabled Digital Twin Model for Secure IIoT in Smart System**
   Abir EL Azzaoui, Byoungwook Kim, Ji Su Park
7. **Survey on Blockchain for IoT-enabled Smart City**
   Jungho Kang, Jong Hyuk Park
8. **A Survey on Intelligent Edge based IoT-enabled Smart City**
   Mikail Mohammed Salim, Jungho Kang
9. **Federated Intrusion Detection Framework for Healthcare IoT Based on Adversarial Resilience**
   Nguyen Van Giang, Tong Minh Duc, Jong Hyuk Park

11:40-13:00 Lunch

13:00-15:30 Local Arrangement Committee Meeting – Organized by BIC 2023

15:30-18:00 Local Arrangement Committee Meeting – Organized by PDCAT 2023

Day 3, April 21, 2023 (Friday)

10:00-12:00 Organizing Committee Meeting – Organized by BIC 2023

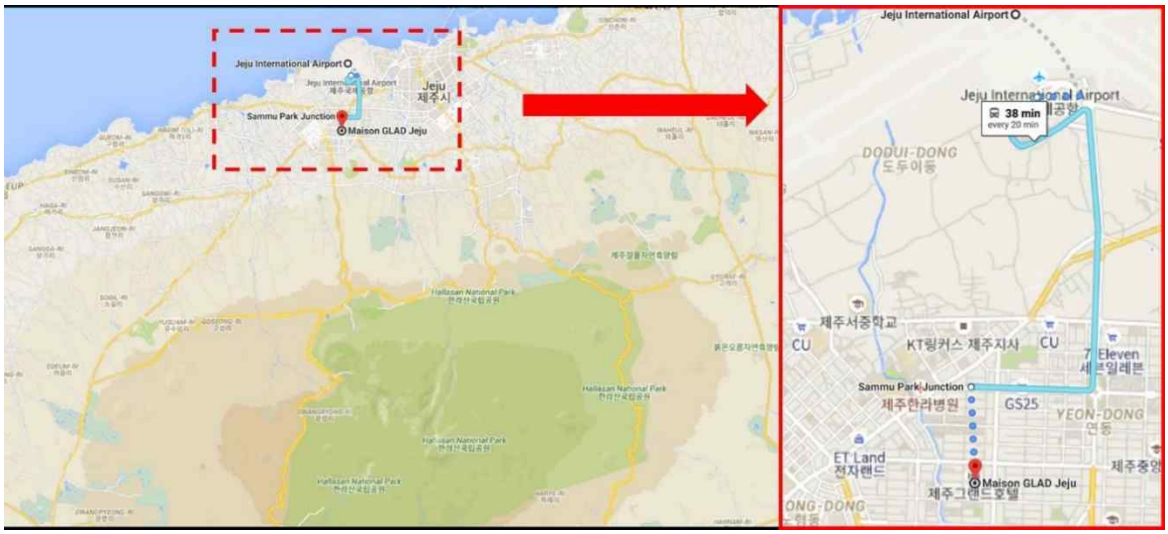
12:00-13:00 Lunch

13:00-15:00 Organizing Committee Meeting – Organized by PDCAT 2023

Conference Venue

MAISON GLAD JEJU

- MAISONGLAD JEJU Hotel
- 80, Noyeon-ro, Jeju-si, Jeju-do, Korea
- Hotel TEL +82-64-747-5000 / FAX +82-64-742-3150
- Web : https://maisongladjeju-hotels.com/en/web/maison-en



Useful Links

Official Travel Information

- Official Korea Tourism Organization (http://english.visitkorea.or.kr/enu/index.kto)
- Jeju Tour Info (http://www.ijto.or.kr/)

KIPS Korea Information Processing Society

KIPS CSWRG Korea Information Processing Society Computer Software Research Group

The 7th The International Conference on Big data, IoT, and Cloud Computing (BIC 2023)
&
The 24th International Conference on Parallel and Distributed Computing, Applications and Technologies (PDCAT 2023)

August 16-18, 2023
Jeju, Korea

Organized by

BIC, PDCAT & KIPS CSWRG

KIPS
Korea Information Processing Society

KIPS CSWRG
Korea Information Processing Society
Computer Software Research Group