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

December 18-20, 2023
Nha Trang, Vietnam

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2024 International Conferences
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The 10th World Congress on Information Technology Applications and Services (World IT Congress 2024)
- February 14-16, 2024 (Jeju, Korea)
- http://www.worlditcongress.org/2024/

The 18th International Conference on Multimedia and Ubiquitous Engineering (MUE 2024)
- April 23-215 2024 (Chongqing, China)
- http://www.mue-conference.org/2024/

The 19th International Conference on Future Information Technology (FutureTech 2024)
- April 23-215 2024 (Chongqing, China)
- http://www.futuretech-conference.org/2024/

The International Conference on Big data, IoT, and Cloud computing (BIC 2024)
- August 12-14, 2024 (unconfirmed)
- http://www.bic-conference.org/2024/ (Unopened)

The 16h International Conference on Computer Science and its Applications (CSA 2023)
- Dec 18-20, 2024 (unconfirmed)
- http://www.csa-conference.org/2024/ (Unopened)

Message from the CSA 2023 General Chair

International Conference on Computer Science and its Applications (CSA 2023) is the 15th event of the series of international scientific conference. This conference takes place Nha Trang University, Vietnam on December 18-20, 2023. CSA 2023 will be the most comprehensive conference focused on the various aspects of advances in computer science and its applications. CSA 2023 will provide an opportunity for academic and industry professionals to discuss the latest issues and progress in the area of CSA. In addition, the conference will publish high quality papers which are closely related to the various theories and practical applications in CSA. Furthermore, we expect that the conference and its publications will be a trigger for further related research and technology improvements in this important subject. CSA 2023 is the next event in a series of highly successful International Conference on Computer Science and its Applications, previously held as CSA 2022(14th Edition: Vientiane, Laos, 2022), CSA 2021(13th Edition: Jeju, Korea, 2021), CSA 2020 (12th Edition: Jeju, Korea, 2020), CSA 2019 (11th Edition: Macao, China, 2020), CSA 2018 (10th Edition: Kuala Lumpur, Malaysia), CSA 2017 (9th Edition: Taichung, Taiwan), CSA 2016 (8th Edition: Bangkok, Thailand, 2016), CSA 2015 (7th Edition: Cebu, December, 2015), CSA 2014 (6th Edition: Guam, December, 2014), CSA 2013 (5th Edition: Danang, December, 2013), CSA 2012 (4th Edition: Jeju, November, 2012), CSA 2011 (3rd Edition: Jeju, December, 2011), CSA 2009 (2nd Edition: Jeju, December, 2009), and CSA 2008 (1st Edition: Australia, October, 2008).

The papers included in the proceedings cover the following topics: Mobile and ubiquitous computing, Dependable, reliable and autonomic computing, Security and trust management, Multimedia systems and services, Networking and communications, Database and data mining, Game and software engineering, Grid and scalable computing, Embedded system and software, Artificial intelligence, Distributed and parallel algorithms, Web and internet computing and IT policy and business management.

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 Steering Chairs: James J. (Jong Hyuk) Park (SeoulTech, Korea), Young-Sik Jeong (Dongguk University, Korea), Nammee Moon(Hoseo University, Korea), Yi Pan (Georgia State University, USA), Vincenzo Loia (University of Salerno, Italy), Han-Chieh Chao (National Ilan University, Taiwan), Pham Thi Thu Thuy(Nha Trang University).

Our special thanks go to the Program Chairs: Ji Su Park (Jeonju University, Korea), Yan Li (Inha University, Korea), S. Vimal (National Engineering College, India), Alireza Souri (Islamic Azad University, Iran), Ping Liu(Chongqing University of Posts and Telecommunications, China), Nguyen Dinh Hung(Nha Trang University) and 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.

CSA 2023 General Chair

Jungho Kang, Baewha Woman University, Korea (Leading Chair)
Kim-Kwang Raymond Choo, The University of Texas at San Antonio, USA
Changhao Piao, Chongqing University of Posts and Telecommunications, China
Pham Van Nam, Nha Trang University, Vietnam

Message from the CSA 2023 Program Chairs

Welcome to the 14th International Conference on Computer Science and its Applications (CSA 2023) which will be held in Nha Trang University, Vietnam on December 18-20, 2023. CSA 2023 will be the most comprehensive conference focused on the various aspects of advances in computer science and its applications.

CSA 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. CSA 2023 is the next event in a series of highly successful International Conference on Computer Science and its Applications, previously held as CSA 2022(14th Edition: Vientiane, Laos, 2022, CSA 2021(13th Edition: Jeju, Korea, 2021), CSA 2020 (12th Edition: Jeju, Korea, 2020), CSA 2019 (11th Edition: Macao, China, 2020), CSA 2018 (10th Edition: Kuala Lumpur, Malaysia), CSA 2017 (9th Edition: Taichung, Taiwan), CSA 2016 (8th Edition: Bangkok, Thailand, 2016), CSA 2015 (7th Edition: Cebu, December, 2015), CSA 2014 (6th Edition: Guam, December, 2014), CSA 2013 (5th Edition: Danang, December, 2013), CSA 2012 (4th Edition: Jeju, November, 2012), CSA 2011 (3rd Edition: Jeju, December, 2011), CSA 2009 (2nd Edition: Jeju, December, 2009), and CSA 2008 (1st Edition: Australia, October, 2008).

CSA 2022 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 Prof. James J. (Jong Hyuk) Park, Prof. Young-Sik Jeong, Prof. Nammee Moon, Prof. Yi Pan, Prof. Vincenzo Loia, Prof. Han-Chieh Chao, and Prof. Pham Thi Thu Thuy the Steering Committee Chairs of CSA for their strong encouragement and guidance to organize the symposium. We would like to thank CSA 2023 General Chairs: Prof. Jungho Kang, Prof. Kim-Kwang RaymondChoo, Prof. Piao Changhao and Prof. Pham Van Nam. We would like to express special thanks to committee members for their timely unlimited support.

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Alireza Souri, Islamic Azad University, Iran
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The 15th International Conference on Computer Science and its Applications (CSA 2023)

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Peng Ran, Chongqing University of Post and Telecom, China
Xu Zhang, Chongqing University of Post and Telecom, China

Invited Speaker

The contribution of Artificial Intelligence to the significant achievements of Computer Vision today and the future trends of Computer Vision development.

Dr. Nguyen Khac CUONG

Head of the Department of Information Systems,
Faculty of Information Technology, Nha Trang University.

Abstract:

The contribution of Artificial Intelligence (AI) has played a pivotal role in the significant achievements of Computer Vision (CV) today. Through Machine Learning capabilities and complex data processing, AI has propelled the advancement of CV systems. Applications such as Facial Recognition, Object Classification, Medical Image Processing, and Autonomous Driving have all benefited from the integration of AI, leading to enhanced performance and capabilities.

   Looking ahead, the future of CV holds promising developments. Continued progress in understanding and modeling image context, coupled with the evolution of powerful Deep Learning, is expected to further enhance the capabilities of CV systems in recognizing and interacting with the environment. Applications across fields such as healthcare, security, manufacturing, and more will continue to be optimized to deliver tangible benefits to individuals and society. AI is playing a pivotal role in driving the development of CV, yielding significant advancements and paving the way for a promising future in applying this technology to crucial aspects of our lives.

Biography:

Dr. Nguyen Khac CUONG is currently engaged in research and teaching in the field of Information Technology (IT). He has accumulated over 20 years of experience in the IT industry. Prior to his current position, he has held numerous significant roles in researching and developing HCI systems, integrating intelligent systems into smart cars, autonomous vehicles, signal processing systems derived from CCD, RADAR, LiDAR, and Laser Scanner sensors. Additionally, he has also participated in managing and developing various IT projects for major companies in South Korea. Dr. Nguyen Khac CUONG holds a Doctorate and Master's degree in Computer Science and Engineering from Yeungnam University (South Korea) and a Bachelor's degree in IT from Hanoi University of Science and Technology (Vietnam).

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PROGRAM SCHEDULE FOR CSA 2023

Day 1, December 18, 2023			
Time	**Min**	**HALL A**	**HALL B**
09:40-10:00	20	Registration	
10:00-11:30	90	**On/Off Session A-1** **Chair: Deok Gyu Lee**	**Session B-1** **BWW 2023** **Chairs: Se Dong Min**
11:30-11:40	10	Coffee Break	
11:40-13:00	80	**On/Off Session A-2** **Chair: Jaehwa Chung**	**Session B-2** **BWW 2023** **Chairs: Dae-Young Kim**
13:00-14:00	60	Lunch	
14:00-14:10	10	**Welcome speech: Prof. Pham Quoc Hung – Vice Rector of Nha Trang University** "Welcome speech from the hosting university" **Chair: Kwang-il Hwang**	
14:10-14:40	30	**Keynote Speech: Dr. Nguyen Khac CUONG** **"The contribution of Artificial Intelligence to the significant achievements of Computer Vision today and the future trends of Computer Vision development"** **Chair: Kwang-il Hwang**	
14:40-14:50	10	Coffee Break	
14:50-16:20	90	**Session A-3** **Chair: Sheng Miao**	**Session B-3** **NIDQ 2023** **Chair: Dongjae Kim**
16:20-16:30	10	Coffee Break	
16:30-18:00	90	**Session A-4** **Chair: Jin Wang**	**Session B-4** **EAVP 2023** **Chair: Yan Li**
18:00-19:00	60	Break	
18:30-21:00	150	**Banquet** **Chair: Kwang-il Hwang** **(Location: Sheraton Nha Trang)**	

Day 2, December 19, 2023				
Time	**Min**	**HALL A**	**HALL B**	**HALL C**
09:40-10:00	20	Registration		
10:00-11:30	90	**Session A-1** **CAABE 2023** Chair: Weijun Gao	**Session B-1** **BWW 2023** Chairs: Seokhoon Kim	**Session C-1** Chairs: Jin Gon Shon
11:30-11:40	10	Coffee Break		
11:40-13:00	80	**Session A-2** **CAABE 2023** Chair: Sheng Miao	**On/Off Session B-2** Chair: Yan Li	
13:00-14:00	60	Lunch		
14:00-16:00	120	Local Arrangement Committee Meeting I		
16:00-18:00	120	Organizing Committee Meeting I		

Day 3, December 20, 2023		
Time	**Min**	**HALL A**
10:00-10:30	90	Local Arrangement Committee Meeting II
10:30-12:00	90	Organizing Committee Meeting II

1. **A paper presentation should be made by one of authors of the paper for 15 minutes (10 minutes for the presentation itself and 5 minutes for Q/A).**
2. **All speakers of each session should meet the session chair at their room 10 minutes before the session begins.**
3. **Windows 7/10 laptops running the Adobe Reader and Microsoft Office for paper presentations will be prepared. Please prepare for your presentation.**
4. **For Q&A in the online section, please email the author.**

DETAILED SCHEDULE FOR

THE 14TH INTERNATIONAL CONFERENCE ON COMPUTER SCIENCE AND ITS APPLICATIONS (CSA 2023)

Day 1, December 18, 2023 (Monday)

09: 40-10: 00   Registration

10: 00-11: 30   On/Off Session A-1
(HALL A)
(Chair: Deok Gyu Lee)

1. **Conditional Responsive Exploratory Causal Inference Analysis Visualization System Research**
   Jong-Jin Jung, Jong-Bin Park
2. **A Study on Improvement of EV Charging Occupancy Prediction Efficiency**
   Myung-Joe Kang, Mi-Hui Kim
3. **Malware Detection System Based on Static-Dynamic preprocessing Techniques Combined in an Ensemble Model**
   Hae-Soo Kim, Mi-Hui Kim
4. **A Stimulus Analysis for Sustaining Attention of Video Lecture Learners**
   Kyoungeui Roh, Ji Su Park, Jin Gon Shon
5. **Recognition of Fire Situation Using Graph Convolutional Network Model**
   Si Jin Kim, Jin Gon Shon, Ji Su Park
6. **Analyzing the Effects of Human Detection in Top-down Pose Estimation for Crowd Situation Recognitions**
   ChulYoung Kim, YoungGiu Jung, YOO-SUNG KIM
7. **Analyze WZT images to predict the type of depression and dementia in the elderly using deep learning**
   kyung-Yeul Kim, Young-Bo Yang, Mi-ra kim, Ji Su Park, Jihie Kim

10: 00-11: 30   Session B-1: BWW 2023
(HALL B)
(Chair: Se Dong Min)

1. **Deep Learning Method for Classifying PBD Cloth Characteristics Using Video-Based Dataset**
   Makara Mao, Do-Kyeong Lee, Sungyeup Kim, Jaehyoun Kim, Min Hong
2. **Initializing SDN-NFV Integration for Smart City as Environment to DQN Agent in QoS Optimization**

Inseok Song, Prohim Tam, Intae Ryoo, and Seokhoon Kim

3. **Emulator-Based Configuration on QoS Measurement: A Case Study of DRL Actions on Mininet and RYU Testbed**
   Seungwoo Kang, Prohim Tam, and Seokhoon Kim

4. **GNN Embedded SFC Provisioning Scheme for Efficient Resources in SDN/NFV**
   Seyha Ros, Geonho Cha, Prohim Tam and Seokhoon Kim

5. **Shader-based Cloth Dynamics in Unity3D: Accelerating GPU-based PBD**
   Hongly Va, Jaesung Shin, Kunthroza Hor and Min Hong

6. **Enhancing Binary Segmentation with an Effective Dual Attention U-Net**
   Seu Kimseth, Priyanka Rajana, Misun Kang

7. **Automatic Personal Information Vulnerability Detection and an Encryption System Using a DNN Model**
   MinSeung Kim, SeongCheol Yoon, Suhyun Kim, Dae-Young Kim

8. **Movie recommendation system based on Deep Learning**
   Sophort Siet, Sony Peng, Sadriddinov Ilkhomjon, Misun Kang and Doo-Soon Park

9. **Community detection in a movie network based on leading eigenvector of a modularity matrix**
   Sadriddinov Ilkhomjon, Sony Peng, Sophort Siet, Daeyoung Kim, Doo-Soon Park

11: 30-11: 40   Coffee Break

11: 40-13: 00   On/Off Session A-2
(HALL A)
(Chair: Jaehwa Chung)

1. **Confidence-aided Disparity Map Refinement with LiDAR-Stereo Fusion**
   Minho Lee, Ju Hong Yoon, Je-Woo Kim, Min-Gyu Park

2. **A Multimodal Interactive Dashboard for User Experience Evaluation**
   Junhyeok Lee, Hyejeong Jo, Hye Won Park, Minjae Kim, Yeonwoo Kim, TAE-SEONG KIM, Won Hee Lee

3. **Robot Following System Based on Convolutional Fast Sliding Window Approach for Motorized Wheelchair**
   Zongjing Cao, Yan Li, Zuyu Zhang, Byeong-Seok Shin

4. **Enhanced Single Packet Authorization System via Dynamic Input Port Allocation Using One-Time Passwords**
   Sunghyun Yu, Yoojae Won

5. **Design of Rule Translator for Temporal Rules Execution of BM-DEVS Model**
   Jungsub Ahn, Taeho Cho

6. **Development of learning evaluation technology using artificial intelligence for remote dance sports education**
   Jonghee Son, Tran Van Thanh, Ki Hyun Park, Jin-Woong Cho, Myung Ko, Kwang-Min Hong, In-Ho Choi

7. **3-tier Malware Detection on Cloud Computing**
   Jueun Jeon, Byeonghui Jeong, Young-Sik Jeong

11: 40-13: 00   Session B-2 : BWW 2023
(HALL B)
(Chair: Dae-Young Kim)

1. **Intrusion Detection System on Controller Area Network Based on Autoencoder**
   Kamronbek Yusupov, Md Rezanur Islam and Insu Oh, Kangbin Yim
2. **Comparison Collision Detection for AABB-based between CPU and GPU in Unity3D**
   Kunthroza Hor, Hongly Va, and Min Hong
3. **Meta-analyzing the Handwriting Peculiarities of Hangul to Evaluate Handwriting Disorders using U-NET**
   Eun Bin Kim, Onseok Lee
4. **Erythema severity classification via hyperspectral imaging**
   Seula Kye, Onseok Lee
5. **Effectiveness of skin elasticity prediction using spectral reflectance values of skin hyperspectral images**
   Juhyun Kim, Onseok Lee
6. **Quantitative Comparison of Reflectance and Melanin in Rat Skin Based on Hyperspectral and Synchrotron Radiation Imaging**
   Taeyeon Gil, Onseok Lee
7. **A Study on DID-based on Sequential Aggregate Signature for Credential Delegation**
   Taehoon Kim, Su-Hyun Kim, Im-Yeong Lee
8. **A Study on Source Code-based Graph Transformation**
   Seok-Joon Jang, Su-Hyun Kim, Im-Yeong Lee
9. **A Study on MyData Protocol based on Blockchain**
   Jaejeong Shin, Su-hyun Kim, Yong-Woon Hwang, and Im-Yeong Lee

13: 00-14: 00   Lunch

14: 00-14: 10   Welcome Speech
(KEYNOTE HALL)
(Chair: Kwang-il Hwang)

Prof. Pham Quoc Hung – Vice Rector of Nha Trang University
"Welcome speech from the hosting university"

14: 10-14: 40   Keynote Speech
(KEYNOTE HALL)
(Chair: Kwang-il Hwang)

Keynote Speech: Dr. Nguyen Khac CUONG
"The contribution of Artificial Intelligence to the significant achievements of Computer Vision today and the future trends of Computer Vision development"

14: 40-14: 50   Coffee Break

14: 50-16: 20   <u>Session A-3</u>
(HALL A)
(Chair: Sheng Miao)

1. **Fixed Value Output Scheduling Strategy of Photovoltaic-storage System**
   Zhong Xianzhun, Yu Hang, Zhao Mei
2. **Ocular Disease Classification using CNN with Deep Convolutional Generative Adversarial Network**
   Arun Kunwar, Dibakar Raj Pant, Jukka-Pekka Skön, Jukka Heikkonen, Riitta Turjamaa, Rajeev Kanth
3. **Precise 5G Traffic Forecasting by Using Search-Economics Algorithm to Fine-Tune the GRU Weights**
   Ming-Xuan Huang, Hsin-Hung Cho, Chi-Yuan Chen, Fan-Hsun Tseng, Wei-Ming Chen
4. **Prediction of Air Blower Flow Setpoint in Wastewater Treatment Plants Based on the LSTM Model**
   Jiuzhe Xu, Xuefei Li, Changqing Liu, Sheng Miao
5. **Spatiotemporal Identification and Quantification of Urban Sprawl Based on High-resolution satellite images**
   Guangyi Zhang, Dongmiao Zhao, Xingtian Wang
6. **Explore the Impact Mechanism of Urban Built Environment on Thermal Environment Based on Deep Machine Learning**
   Y Yansu Qi, Xiuhe Yuan, Chao Liu, Weijun Gao
7. **Study on printing and dyeing wastewater treatment by vertical flow labyrinth (VFL) process**
   Weizhong Wang, Xiaoxuan Wang, Ran Zhang
8. **Development of Central Air Conditioning Circulation System for Condominium Unit and Evaluation of the Indoor Environment in Summer**
   Yuko Kuma, Akihito Ozaki

14: 50-16: 20   <u>Session B-3 : NIDQ 2023</u>
(HALL B)
(Chair: Dongjae Kim)

1. **Internal Pneumatic Shuttering of Aerosol Jet Printing**
   Md. Abu Mosa and Jeong Yeop Jo, Kye-Si Kwon
2. **Highly Efficient Quantum Dot Light Emitting Diodes Using a Mixture of MoO3 and V2O5 as a Hole Injection Layer**
   Suyoung Kim, Youngbin Chae, Chang Kyo Kim
3. **Transparent Flexible Quantum-Dot Light-Emitting Diodes using Oxide/Metal/Oxide Electrodes**
   Jimyoung Kim and Honyeon Lee
4. **Graphene-wrapped single phase and mesoporous cobalt metal nanostructures for efficient and stable electrocatalytic hydrogen evolution reaction**
   Byeong Chan Ji and Byung Guk Kang, Bong kyun Kang

5. **Effect of V2O5 Addition on Sintering and Microwave Dielectric Properties of (1-x) Li2.08TiO3-xLi2ZnTi3O8 (x=0.4~0.6) Ceramics**
   Yu Seon Lee and Kyoung Ho Lee
6. **Eco-Friendly Hydrophobic Coating Solution for Enhanced Water Resistance**
   Woo Hyeong Ro and Jong-Min Lim
7. **Transient Analysis and Optimization of a Spatial Atom-ic Layer Deposition Model Utilizing Dynamic Mesh Methods**
   Yunseok Kim and Seulwon Choi, Hwanyeol Park
8. **Inverted OLEDs with Mg and Li Doped Zinc Oxide Electron Injection Layer**
   Go-Eun Kim, Sang-Uk Byun, Hwan-Jin Yoo, Da-Young Pak and Dae-Gyu Moon
9. **Synthesis of the Molecular Transporters Decorated with Multiple Guanidines and Their Utilization for Enhanced Delivery of Doxorubicin to Cancer Cells**
   Narim Koo and Jungkyun Im
10. **Reinforcement Learning to Stabilize Online Detection Performance**
    Jonggil Lee and Hyukdoo Choi

16: 20-16: 30   Coffee Break

16: 30-18: 00   <u>Session A-4</u>
(HALL A)
(Chair: Jin Wang)

1. **Implementation of Tableware Detection based on YOLO V4**
   Rundong Wang, Yanchun Cheng, Wenfeng Lu, Tay Eng Hock Francis
2. **Enhancing Pixel-wise Robotic Grasping with Residual Blocks**
   Zhengshen Zhang, Chenchen Liu, Haozhe Wang, Zhiyang Liu, Lei Zhou, Marcelo H. Ang Jr., Wen Feng Lu, Francis Eng Hock Tay
3. **Improving the Trust Measuring on Social Networks Based on Ontology**
   Pham Thi Thu Thuy, Hwa Soo Kim
4. **Multi-factor Relay-node Selection Algorithm for IoV in 3D Mountain Scenarios**
   Huicong Liao, Qinghua Liu, Jin Wang, Jing Wang, Dun Cao
5. **APS: Adaptive Priority-aware Sketch with Low Overhead for Heterogeneous Traffic**
   Houqiang Shen, Jin Wang, Yusheng Deng, Jing Wang, Jinbin Hu
6. **HACC: Hierarchical Automatic Selection of Congestion Control Algorithms**
   Yujie Peng, Jin Wang, Youyang Wang, Jing Wang, Jinbin Hu
7. **Dual Vision-based Reinforcement Learning: Solving Robot Manipulation Task with Both Static-view and Active-view Cameras**
   Chenchen Liu, Ruo Xuan Wang, Zhengshen Zhang, Marcelo H. Ang Jr, Wen Feng Lu, Francis EH Tay
8. **Internet Banking Mobile Application Development Using Flutter Framework (Case Study: BCEL i-Bank)**
   Anouza Saphakdy, Vimontha Khieovongphachanh, Phonexay Vilakone, Doo-Soon Park

16: 30-18: 00   Session B-4 : EAVP 2023
(HALL B)
(Chair: Yan Li)

1. **DQN-based transmit power control in V2V communications using Sensor Images**
   Jung Yun Moon, Duk Kyung Kim
2. **Efficient Parking Lot Management System and Aberrant Behavior Detection Only Using Surveillance Cameras**
   Janghyun Baek, Junhyek Jang, Yongcheol Ro, Mingu Jeong, Daekyo shin, Soohyun Jang
3. **Autonomous Vehicle Identification Technology for V2I based Cooperative Driving Protocol**
   JunHyek Jang, Sanghoon Yun, Byoungman An, Pusik Park, Soohyun Jang
4. **A Driving Status based Hybrid In-Vehicle Data Compression Technology**
   Yongcheol RO, Junhyek Jang, Seonghyun Jang, Daekyo Shin, Soohyun Jang
5. **Non-Line-of-Sight Error Reduction Algorithm for UWB Positioning**
   Changhao Piao, Zhe Guo, Shujun Lv, Houshang Li
6. **A Camera-LiDAR Fusion Tracking Framework with Search Area Parameters for Multi-Object Tracking**
   Menghan Wu, Chongchong Tan, Changhao Piao, Mingjie Liu
7. **Harnessing Attention Mechanisms for Improving Small Object Detection in Drone-Captured Scenarios**
   Mahmood Azka, Yi Xu, Mingjie Liu, Changhao Piao
8. **Incremental Learning-Based YOLOv5 Detector for Efficient Labor Protection Products Detection**
   Liangao Du,Yang Fang, Xin Deng, Weihua Ouyang, Yan Li, Yahui Li
9. **Autonomous cooperative driving history management protocol**
   Daekyo Shin, Soohyun Jang, Junhyek Jang, Hangyun Jung, Seonghyun Jang, Pusik Park

18: 00-19: 00   Break

19: 00-21: 00   Banquet
(Sheraton Nha Trang)
(Chair: Kwang-il Hwang)

Day 2, December 19, 2023 (Tuesday)

09: 40-10: 00   Registration

10: 00-11: 30   Session A-1 : CAABE
(HALL A)
(Chair: Weijun Gao)

1. **An Integrated Instant NeRF and Simulation based 3D Reconstruction for Immersive City Twin**
   Xiaoyu Song, Hansong Xu, Xing Liu, Fan Liang
2. **Value interpretations of Qingdao historic urban areas based on big data analysis from an official discourse perspective**
   Ang Sha, Pengcheng Li, Yifang Jing, Xiaolin Zang, Xinrui Wang, Yue Yu
3. **Quality Defect Diagnosis Method for Prefabricated Steel Structure Residences Based on Artificial General Intelligence**
   Jingyi Zhao, Xiang Li, Meijia Liu, Xing Zhang
4. **Numerical Feature Preprocessing Method for Daily Solar Radiation Pattern Classification**
   You Li, Yafei Wang, Ying Zheng, Hui Qian, Weisheng Zhou
5. **Simulation Study on the Influence of Green Space Layout on Microclimates and Thermal Comfort in Residential Areas of Shenyang, China**
   Xiangquan Wang, Long Zhou, Dong Sun, Weijun Gao
6. **Analysis of Long and Short Term Influencing Factors on Electricity Prices in the Japanese Electricity Market: A Case Study at Kyushu Region**
   Dan Yu, Fanyue Qian
7. **Thermal Comfort Evaluation Method Using Facial Thermal Imaging**
   Zhengyan Li, Zhanwang Zhang, Liyang Xia, Jie Sun
8. **A Dynamic Assessment Model for Managing Risk in Building Construction: Utilizing T-S Fuzzy Fault Tree and Bayesian Network Approach**
   Minwei Du, Gongxin Chen, Fanghui Xu, Lei Bi, Ke Shi

10: 00-11: 30   Session B-1 : BWW 2023
(HALL B)
(Chair: Seokhoon Kim)

1. **A Study on Similarity Detection of Source code using Dependence Graph**
   SeongCheol Yoon, Su-hyun Kim, Im-Yeong Lee
2. **Fusion of CNN and LSTM Model for Classification of Gait Patterns based on Gait Mimetic Words**
   Rathna Damsmoun, XIN GUO, Young Kim, Se Dong Min
3. **Quantified Correlation Analysis between Emotion and Gait using Mimetic Words**
   Jong Gab Ho, A Hyun Jung, Ji hee choe, Young Kim, Se Dong Min
4. **Comparison of Learning Strategies for Handling Imbalanced Problem for Sleep-wake Classification**
   Seungmin Jeong, Se Dong Min
5. **Acceleration Pattern and Frequecy Analysis of Upper and Lower Extremity Movements during Gait based on Mimetic Words**
   seungwan jang, Young Kim, Hyun Young Lee, Se Dong Min
6. **Machine Learning based Classification and Prediction of Four Stages of Sleep using Circadian Features**
   Ye Eun Kong, Young Kim, Se Dong Min
7. **A Study on Interoperability Digital Human (Avatar) in Metaverse Platforms through the Utilization of NFT**
   ChangHyun Roh, Dong-Myung Shin

8. **Design of copyright licensing agreements and management system for copyright usage and contract in the Web3.0 environment**
   Won-Bin Kim, Yong-Joon Joe, Ae Kyung Kim, Dong Myung Shin

9. **Real-Time Personalized Music Recommender System based on Facial Expression using Deep learning and Content Based Filtering**
   Sony Peng, Sophort Siet, Sadriddinov Ilkhomjon, Dae-young Kim, Doo-soon Park

10: 00-11: 30   Session C-1
(HALL C)
(Chair: Jin Gon Shon)

1. **Dynamic Conjunctive Search Encryption with Hash-Based Subset Membership Check**
   Ziren Xiong, Haipeng Qu

2. **Power Consumption Characteristics and Prediction of Airport Terminal Based on Data Mining**
   Sun Yongxiang, Chen Chao, Guan Dongya, Kang ChunhuaM Li Zhiyong, Qiao Peng

3. **Understanding Dynamics of Loneliness through Comparative Social Intelligence Analysis**
   Hurmat Shah, Mowafa Househ

4. **Self-Viewing and Attitudes towards Distance Learning**
   Xiaoyun Jia, Ting Yu, Ruili Wang

5. **Study on the method of determining the area of local heating demand for rural residential buildings in China**
   Wang Tianhui, Dengjia Wang, Yanfeng Liu, Weijun Gao

6. **Reducing the WSN's communication overhead by SD-SPDZ encryption protocol**
   Alexander Alexandrov

7. **Improving the Accuracy of the Electricity Consumption Prediction in SmartFarm**
   SaravanaKumar Venkatesan, Wajahat Ali Khan

8. **Blockchain-Based Framework for Protection in IoT Networks**
   Inyoung Bang, Usman Afzaal

11: 30-11: 40   Coffee Break

11: 40-13: 00   Session A-2 : CAABE
(HALL A)
(Chair: Sheng Miao)

1. **A Fully Integrated Deep Learning Framework for Semantic Segmentation of Vegetation Classification Based on Active Learning Strategies and UAV Remote Sensing**
   Yufeng Liu, Guangze Kong, Xiang Shen, Sheng Miao

2. **Spatial and Temporal Evolution of Vegetation Based on Optical Flow Algorithms**
   Ruolan Mu, Chuanlong Wang, Han Li, Chao Liu
3. **Visualization of Digital Twin Model of Wastewater Treatment Plant Based on Multi-modal Data**
   Shuqi Liu, Huaying Sun, Sheng Miao
4. **Utilizing Text Mining to Extract Critical Indicators for Wetland Health Evaluation**
   Lan Chen, Guoqing Ni, Shaoyu Lu, Didit Novianto, Chao Liu
5. **The Application of Event-Triggered-Based Model Predictive Control For Trajectory Tracking Of Quadrotor In Municipal Engineering**
   Ma HaoChen, Shao Bin, Wei TianXu, Jingbo Zhao
6. **Extracting Key Words from Picture Books to Reveal Attractive Topics Based on Text Mining Technology**
   Dezhen Wang, Yue Wang, Yin Wang, Sheng Miao
7. **Load Leveling Potential Evaluation of Virtual Power Plant based on Genetic Algorithm Optimization**
   Yafei Wang, You Li, Weijun Gao
8. **Study on the Spatial Distribution and Migration Characteristics of Petroleum Hydrocarbons in Soil Based on Artificial Neural Networks**
   Aili gao, Lihua Cheng, Xiaohan Wei

11: 40-13: 00   On/Off Session B-2
(HALL B)
(Chair: Yan Li)

1. **Survey on Quantum Machine Learning-Based Network Security System for Secure IoV Environments.**
   Heeji Park, Ji Su Park, Jong Hyuk Park
2. **A Comprehensive Study of Ransomware Attack in IoT Network: Challenge and Future Direction**
   Byunghyun Jo, Jong Hyuk Park
3. **Survey on Machine Learning based Privacy Protection in IoT Environment**
   Jimin Ha, Jong Hyuk Park
4. **Federated Learning-based Blockchain for secure data management in IoT networks**
   Abir EL Azzaoui, Jong Hyuk Park
5. **U-Net based Speech Denoising Model for Kiosk Environments**
   Kyungseok Hyun, Jaehwa Chung
6. **Advancement of Image Retrieval**
   Su-Joo An, YongSoo CHOI

13: 00-14: 00   Lunch

14: 00-16: 30   Local Arrangement Committee Meeting I

16: 30-18: 00   Organizing Committee Meeting I

Day 3, December 20, 2023 (Wednesday)

10: 00-11: 30   Local Arrangement Committee Meeting II

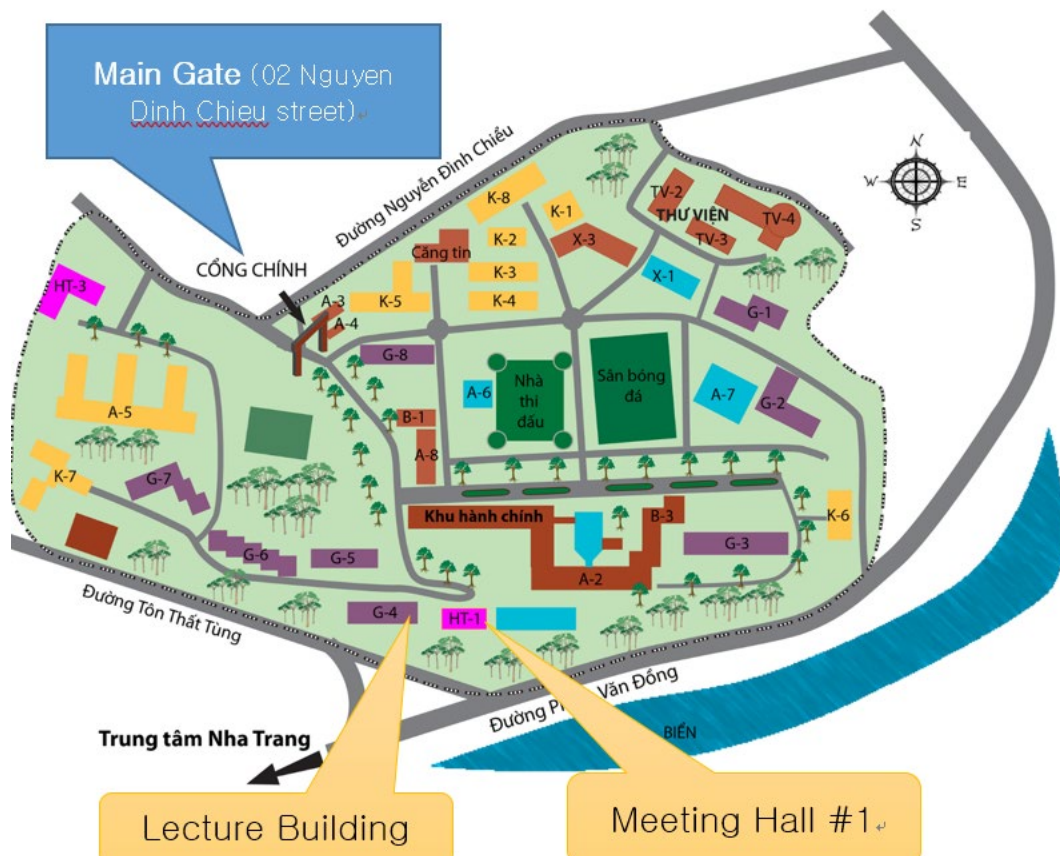**11: 30-13: 00   Organizing Committee Meeting II**

Conference Venue

Nha Trang University

Address: Meeting Hall number 1 and Lecture Building number 4

Nha Trang University, No 02 Nguyen Dinh Chieu street, Nha Trang city, Vietnam.

Phone: +856-20-5441-1199

How do I get to Nha Trang University?

The main campus of Nha Trang University (NTU) is located on the long beach of Nha Trang city. This is the capital city of Khanh Hoa province, a land rich in history and culture. The city is located in the south of Central Vietnam, about 440 km north of Ho Chi Minh City, 1280 km south of Vietnam's capital Hanoi.

1. Go to Nha Trang University by plane

Most international airlines have flights to Hanoi, Ho Chi Minh or Da Nang. From one of these cities, local airlines (Vietnam Airlines, Vietjet Air, Jetstar Pacific, Bamboo Airways) can connect you to Nha Trang (Cam Ranh airport). These airlines offer daily flights. Recently, due to increased demand from international tourists, many international direct flights have been connected to Cam Ranh airport such as from China, Russia, Korea, etc. You can refer to flight times as well as Airfare prices via https://www.traveloka.com / en-vn / From Cam Ranh airport, you can go to Nha Trang University by taxi or airport bus. It takes you about 45 minutes to travel.

2. By Grab

Get a safe and reliable ride in minutes with Grab (formerly GrabTaxi). With the largest team of drivers in Nha Trang, Grab provides the fastest taxi, personal car or motorbike booking service.

There are many options for you to choose from when you want to go anywhere in Nha Trang City.

 * GrabTaxi: Book a budget or premium taxi from the largest driver network in Southeast Asia.

* GrabCar: Ride comfortably and pay a pre-agreed fixed fee.

3. By taxi

Taxis in Nha Trang often have meters and prices are generally quite reasonable.

There are several companies that stand out:

Mai Linh (Green taxi): (0258) 38 38 38 38

International (Green Taxi): (0258) 3 52 52 52

Asia (Yellow Taxi): (0258) 35 35 35 35

Vinasun (Blue and white taxi): (0258) 38 27 27 27

Banquet

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

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Nha Trang, Vietnam

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