

Final Program



26th IEEE/ACIS International Winter Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD2023-Winter)



06-07 December, 2023

National Chin-Yi University of Technology, Taichung, Taiwan

<https://acisinternational.org/conferences/snpd-2023-winter/>

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Program at a glance

Wednesday, 6 December, 2023

Time (GMT+8), Taiwan Time	Sessions	Location
08:00AM - 10:00AM	Registration	Machine tool building, 1F Foyer
10:00AM - 10:30AM	Opening Ceremony	Machine tool building, 1F Room Num. : VA102
10:30AM - 12:00PM	Special Session 3	Machine tool building, 1F Room Num. : VA102
	Regular Session 6	Virtual Google meet room : https://meet.google.com/qaq-ioxf-znd
12:00PM - 01:00PM	Lunch	Machine tool building, 1F Room Num. : VA102
01:00PM - 14:30PM	Special Session 2	Machine tool building, 1F Room Num. : VA102

Thursday, 7 December, 2023

Time (GMT+8), Taiwan Time	Sessions	Location
08:00AM - 10:00AM	Registration	Machine tool building, 1F Foyer
09:00AM - 10:30AM	Regular Session 1	Machine tool building, 1F Room Num. : VA102
	Regular Session 2	Machine tool building, 4F Room Num. : VA405
10:30AM - 12:00PM	Keynote	Machine tool building, 1F Room Num. : VA102
12:00PM - 01:00PM	Lunch	Machine tool building, 4F Room Num. : VA405
01:00PM - 02:30PM	Special Session 1	
02:30PM - 04:00PM	Regular Session 3	
04:00PM - 05:30PM	Regular Session 5 CSII & IAI 2023 papers	
	Regular Session 4	Machine tool building, 3F Room Num. : VA302
05:30PM - 08:00PM	Banquet	Machine tool building, 1F

Development and Industrial Application of Artificial Intelligence

Sun-Yuan Hsieh Ph. D.

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Abstract

Artificial intelligence has been used in more and more fields, bringing changes to human life and economic development around the world. Artificial intelligence technology is also used in many aspects of the industry. For example, defect detection, intelligent scheduling, preventive maintenance, and raw material combination optimization in the manufacturing industry are examples of AI applications. At this time, technology leaders lead innovation and early application. We have also seen that new companies such as voice assistants, face recognition, and medical image interpretation will make rapid progress in specific applications.

This speech will discuss the development of artificial intelligence from the aspects of industry, talent cultivation, and university research. It will introduce broad artificial intelligence technologies: deep learning algorithms, machine learning, data exploration, data extraction, big data analysis, and natural science. Language processing is used in smart manufacturing, smart finance, smart agriculture and other fields.

Biography

Sun-Yuan Hsieh received the PhD degree in computer science from National Taiwan University, Taipei, Taiwan, in June 1998. He then served the compulsory two-year military service. From August 2000 to January 2002, he was an assistant professor at the Department of Computer Science and Information Engineering, National Chi Nan University. In February 2002, he joined the Department of Computer Science and Information Engineering, National Cheng Kung University, and now he is a chair professor. Dr. Hsieh has an extremely impressive record of research achievements in areas of algorithms and fault-tolerant computing for interconnection networks. His awards include the 2020 ACM Distinguished scientist, 2019 Kwoh Ting Li Honorable Scholar Award, 2016 Outstanding Research Award of Taiwan Ministry of Science and Technology, President's Citation Award (American Biographical Institute) in 2007, Engineering Professor Award of Chinese Institute of Engineers (Kaohsiung Branch) in 2008, National Science Council's Outstanding Research Awards in 2009, IEEE Outstanding Technical Achievement Award (IEEE Tainan Section) in 2011, Outstanding Electronic Engineering Professor Award of Chinese Institute of Electrical Engineers in 2013, and Outstanding Engineering Professor Award of Chinese Institute of Engineers in 2014. He is Fellow of the IEEE, Fellow of the British Computer Society (BCS), and Fellow of the Institution of Engineering and Technology (IET).

Dr. Hsieh is an experienced editor with editorial services to a number of journals, including serving as associate editors of *IEEE Transactions on Computers*, *IEEE Transactions on Reliability*, *IEEE ACCESS*, *Journal of Computer and System Science* (Elsevier), *Theoretical Computer Science* (Elsevier), *Discrete Applied Mathematics* (Elsevier), *Journal of Supercomputing* (Springer), Editor-in-Chiefs of *International Journal of Computer Mathematics* (Taylor & Francis Group), *Parallel Processing Letters* (World Scientific), *Discrete Mathematics, Algorithms and Applications* (World Scientific), and Managing editor of *Journal of Interconnection Networks* (World Scientific). In addition, he has served on organization committee and/or program committee of several dozens international conferences in computer science and computer engineering. His current research interests include design and analysis of algorithms, fault-tolerant computing, bioinformatics, parallel and distributed computing, and algorithmic graph theory.

Program Schedule

Wednesday, 6 December, 2023

08:00AM - 10:00AM – Registration (Foyer, Machine tool building, 1F)

10:00AM - 10:30AM – Opening Ceremony (Room: VA102, Machine tool building, 1F)

10:30AM - 12:00PM – Special Session (3) (Room: VA102, Machine tool building, 1F)

Chair: prof. Chuan-Kang Liu (National Chin-Yi University of Technology, Taiwan)

SS3-01 Network Intrusion Detection Using CNN-based Classification Method
Tzu-En Peng, I-Hsien Liu, Jung-Shian Li, Chuan-Kang Liu

SS3-02 Addressing Data Misalignment in Image-LiDAR Fusion on Point Cloud Segmentation
Wei-Jong Yang, Li-Yang Ho

SS3-03 Coefficient Optimization of Dehazing Algorithm Based on Contrastive Learning
Ping-Juei Liu

SS3-04 Machine Learning-Based Outcome Prediction of Acute Ischemic Stroke After Endovascular Treatment
Yeong-Yuh Xu, Pao-Sheng Yen, Yu-Hui Lin, Chung-Yu Lai, Yu-Chuan Chen, Chuan-Kang Liu

SS3-05 Image Recognition Technology for Abnormal Capsule Detection
Chuin-Mu Wang, Shao-Wei Chu, Yen-Ching Wu, Jia-Xian Jian, Ming-Yu Tsai, Meng-Fen Huang

10:30AM - 12:00PM – Regular Session (6) (Google meet room : <https://meet.google.com/qaq-ioxf-znd>)

Chair: prof. Hsiung-Cheng Lin (National Chin-Yi University of Technology)

47 Molecular Communications Through Quantum Coherent States
Huber Nieto-Chaupis

49 The Conjunction of Mitchell Criteria and Stochastic Methods to Identify and Predict the Arrival of Next Global Pandemic
Huber Nieto-Chaupis

50 Fast Seismic Detection Through Internet of Things Based in Pulse Laser and High Resolution Detector
Huber Nieto-Chaupis

51 Inherent RC Circuits in Cylindrical Geometries From the Fokker-Planck Equation
Huber Nieto-Chaupis

54 The Internet of Nanomedicine Things
Huber Nieto-Chaupis

12:00PM - 01:00PM – Lunch (Room: VA102, Machine tool building, 1F)

01:00PM - 14:30PM – Special Session (2) (Room: VA102, Machine tool building, 1F)

Chair: prof. Meng-Hua Yen (National Chin-Yi University of Technology, Taiwan)

SS2-01 A real time driving emotion detection based on yolov7 neural network
Chi-Chun Chen, Nabila Rizqia Novianda, Yuan-Hong Guan, You-Xuan Lin, Meng-Hua Yen

SS2-02 Evaluation and Analysis of Derivative Constant Current-Constant Voltage Charging Method for Lithium-Ion Batteries

Jhan-Fong Lin, Guan-Jhu Chen

SS2-03 Digital Electricity Meter Reading Using AlexNet

Yu-Quan Xu, Ruey-Maw Chen

SS2-04 Smart and Automatic Weld bead Visual Defect detection system

Meng-Hua Yen

SS2-05 Medicine Powder Inspection by Image Processing Technique

Reynard Moses, Cheng-Yu Peng, Cho-Fan Hsieh, Kao-Chi Lin

SS2-06 Enhancement of smart building operation efficiency using ensemble-based deep learning approach

Hsuan-Chao Huang, Pei-Yu Wang, Jheng-Hua Huang

SS2-07 Development of parking space certificate management system based on blockchain approach

Yu-Che Tsai, Ming-Te Chen, Yi-Ying Chang

Thursday, 7 December, 2023

8:00AM - 10:00AM – Registration

(Foyer, Machine tool building, 1F)

9:00AM - 10:30AM – Regular Session (1)

(Room: VA102, Machine tool building, 1F)

Chair: prof. Chu-En Lin (National Chin-Yi University of Technology, Taiwan)

01 Leveraging Unannotated Data to Improve Question Answering for French Contract Analysis
Ahmed Touila, Hamza Gharbi and Elie Louis

05 PyTPU: Migration of Python Code for Heterogenous Acceleration with Automated Test Generation
Arghya Kundu and Uyen Trang Nguyen

07 Employee Management Support Application for Operation Managers and Its Security
Toshihiro Uchibayashi, Chinasa Sueyoshi, Yoshihiro Yasutake and Kentaro Inenaga

10 Use Key Point Detection to Extracte Three Dimensional Phenotypes of Corn
Yuliang Gao, Zhen Li, Seiichi Serikawa, Bin Li and Lifeng Zhang

16 A Middleware to Improve Analysis Coverage in IoT Vulnerability Detection
Minami Yoda, Shigeo Nakamura, Yuichi Sei, Yasuyuki Tahara and Akihiko Ohsuga

46 Deep Learning and Augmented Reality Based Pollution Detection System for Sea Surface Applications
Cherifa Nakkach, Khalil Moussi and Badii Louati

9:00AM - 10:30AM – Regular Session (2)

(Room: VA405, Machine tool building, 4F)

Chair: prof. Chi-Chun Chen (National Chin-Yi University of Technology)

17 Text-based Data Analysis for Mental Health Using Explainable AI and Deep Learning
Tazrin Rahman, Rehnuma Shahrin, Faharia Akter Pospu, Nafia Sultana and Mohammad Rashedur Rahman

19 Few-shot FMCG Product Recognition based on Feature Transfer Learning
Hua Zeng, Tao Long, Xuan Li and Yonghai Liu

20 Predicting Oil Spills in Real-Time: A Machine Learning and AIS Data-Driven Approach
Tanmay Bisen, Aastha Shayla and Susham Biswas

21 An experimental evaluation of upper bounds of clique weights based on graph coloring
Yuki Kashihara and Kazuaki Yamaguchi

22 Data-driven OCL Invariant Patterns-based Process Model Exploration for Process Mining
Duc-Hieu Nguyen, Yuichi Sei, Yasuyuki Tahara and Akihiko Ohsuga

24 An Analysis of Program Comprehension Process by Eye Movement Mapping to Syntax Trees
Haruhiko Yoshioka and Hidetake Uwano

10:30AM - 12:00AM –Keynote Speech

(Room: VA102, Machine tool building, 1F)

12:00PM - 01:00PM – Lunch

(Room: VA405, Machine tool building, 4F)

01:00PM - 02:30PM – Special Session (1)

(Room: VA405, Machine tool building, 4F)

Chair: prof. Seiichi Serikawa (Kyushu Institute of Technology, Japan)

SS1-01 Extraction study of leaf area and plant height of radish seedlings based on SAM
Chen Yaoyao, Zhang Lifeng and Yang Zijun

SS1-02 Respiratory Sound Data Augmentation Method based on Respiratory Physiology
Shunsuke Komoto, Katsuma Fujimoto, Tsunahiko Hirano, Keiko Doi, Kazuto Matsunaga, Seiji Nishifuji, Shota Nakashima

SS1-03 Development of Under-Bed Mounted Obrid-Sensor
Shunki Tanaka, Seiji Nishifuji, Tomohiro Hayata, Kazuko Kotoku, Eri Eguchi, Yuhki Kitazono, Seiichi Serikawa, Shota Nakashima

SS1-04 Material Identification Method for Railway Structures Using 2D-LiDAR
Masaya Kawaguchi, Seiji Nishifuji, Junya Ueki, Tsukasa Arimitsu, Yuhki Kitazono, Seiichi Serikawa, Shota Nakashima

SS1-05 Enhancing Epilepsy Diagnosis with Deep Learning and Multi-Channel Processing of EEG Signals
Zijun Yang, Zhen Li, Yaoyao Chen, Lifeng Zhang and Seiichi Serikawa

02:30PM - 04:00PM – Regular Session (3) (Room: VA405, Machine tool building, 4F)
Chair: prof. Chu-En Lin (National Chin-Yi University of Technology, Taiwan)

25 An algorithm using mathematical programming solver for the nurse scheduling problem
Kazuki Nonaka and Kazuaki Yamaguchi

26 Comparing a composite model versus chained models to locate a nearest visual object
Antoine Le Borgne, Xavier Marjou, Fanny Parzysz and Tayeb Lemlouma

27 Using the Internet of Things and machine learning to monitor and detect COVID-19
Al Mehedi Hasan, Istiak Ahmed Sheam, Md. Maruf Chowdhury and Mohammad Rashedur Rahman

28 Segment Routing Traffic Engineering by Pruned Landmark Label
Shan Jiang and Naoshi Sakamoto

30 An Approach to Reveal Unknown Malware Hiding Techniques
Zhiyong Shan and Harsha Vardhan Reddy Channu

04:00PM - 05:30PM – Regular Session (4) (Room: VA302, Machine tool building, 3F)
Chair: prof. Guan-Jhu Chen (National Chin-Yi University of Technology, Taiwan)

31 Examining the Influence of Dependency Injection Documentation on Software Maintainability
Chun-Wei Sun and Chun-Feng Liao

32 Parallel Computation of Random Walks on Distributed Graphs
Yao Hu

33 Self-supervised Monocular Depth Estimation and Ego-motion Made Better: A Masking Constraints
Tian Wen, Gaofei Sun and Lifeng Zhang

34 Using Additional Sets of Random Data to Assess Possible Dissaving Risk against Life Expectancy for Elderly People
Yuya Yokoyama

35 Cohesive Group Emotion Recognition using Deep Learning
Anish Nethi, Dhathri Meda, Chinnamallu Yashwanth Reddy, Shashi Kanth Koppala, Anusha Nandy, Varnika Bethireddy, Sanatan Sukhija and Yayati Gupta

36 Personalized Recommendation: A novel approach based on Hybrid methods and fog computing architecture
Noura Abdaoui, Ismahene Hadj Khalifa and Sami Faiz

41 Aspect Level Sentiment Analysis with CNN Bi-LSTM and Attention Mechanism
Jionghui Lin

04:00PM - 05:30PM –

(Room: VA405, Machine tool building, 4F)

Regular Session (5)&CSII & IAI 2023 papers

Chair: *prof. Hsiung-Cheng Lin (National Chin-Yi University of Technology, Taiwan)*

06 A Deep Learning-Based Study for Cyclone Track Forecasting: Comparative Analysis using Historical Data from The Bay of Bengal

Rafi Majid, Akmam Hasan, Shayrey Mostarin, Kazi Rabiul Alam and Rashedur M. Rahman

39 Comparison between the Route Using Improved Detours and Shortest Route on Distributed Key-Value Store Based on Order Preserving Linear Hashing and Skip Graph

Ken Higuchi, Yurika Tsubouchi and Tatsuo Tsuji

42 HybridSeqNet: A Multimodal Approach Incorporating Convolutional and Long Short-Term Memory Networks for Comprehensive Structural Protein Classification

Soumen Sinha, Pranav Sunil, Neha Bharill and Om Prakash Pate

45 Benchmarking OpenStack for edge-computing applications

Jean-François Dollinger, Kaouther Bouhouch and Imen Bouzarkouna

03 Towards Privacy-preserving, Low-storage, and High-quality Image Processing in Clouds

Shushan Zhao, Ching-Hsiao Chiang

08 Maximum-Speed Search Algorithm

Abo Bakr Almostafa

01 Leveraging Unannotated Data to Improve Question Answering for French Contract Analysis

Ahmed Touila, Hamza Gharbi and Elie Louis

52 From Above and Beyond: Decoding Urban Aesthetics with the Visual Pollution Index

Advait Gupta, Manan Padsala, Tanmay Bisen, Aastha Shayla, Gargi Srivastava and Devesh Jani

05:30PM - 08:00PM – Banquet

(Foyer, Machine tool building, 1F)

ACIS Journal Information

International Journal of Networked and Distributed Computing (IJNDC)

IJNDC is a world-class international journal. IJNDC Journal has been indexed in ESCI and Scopus and will ultimately be indexed in SCI **approximately** within one year or so.

<http://www.atlantis-press.com/publications/ijn/dc/>

International Journal of Software Innovation (IJSI)

IJSI is a world-class international journal. IJSI Journal has been indexed in ESCI and Scopus and will ultimately be indexed in SCI **approximately** within one year or so.

<http://www.igi-global.com/ij/si>

International Journal of Big Data Intelligence and Applications (IJBDA)

IJBDA is a world-class international journal. IJBDA Journal has been indexed in Scopus.

<http://www.igi-global.com/ij/bdia>

ACIS Official Website

<http://www.acisinternational.org>