

Final Program



22nd IEEE/ACIS International Fall Virtual Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD2021-Fall)



24-26 November, 2021

National Chin-Yi University of Technology, Taichung
Taiwan

<http://acisinternational.org/conferences/snpd-2021/>

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Program at a Glance

Wednesday, 24 November, 2021

Time (GMT+8)	Activity	Location
9:00AM – 10:00AM	Special Session 1-1	Virtual
10:00AM - 10:30AM	Break	
10:30AM - 11:30AM	Special Session 1-2	
11:30AM - 01:00PM	Break	
01:00PM - 02:00PM	Special Session 3	
02:00PM - 02:30PM	Break	
02:30PM - 03:30PM	Special Session 4	
03:30PM - 04:00PM	Break	
04:00PM-05:00PM	Regular Session 1	

Thursday, 25 November, 2021

Time (GMT+8)	Activity	Location
9:00AM – 10:00AM	Opening Ceremony (Campus Tour Video)	Virtual & National Chin-Yi University of Technology, Taiwan
10:00AM - 10:30AM	Break	
10:30AM - 11:30AM	Keynote (Prof. Pau-Choo Chung)	
11:30AM - 01:00PM	Break	
01:00PM - 02:00PM	Special Session 5	Virtual
02:00PM - 02:30PM	Break	
02:30PM - 03:30PM	Special Session 7 Workshop 1-1	
03:30PM - 04:00PM	Break	
04:00PM-05:00PM	Regular Session 2	

Friday, 26 November, 2021

Time (GMT+8)	Activity	Location
9:00AM – 10:00AM	Special Session 8	Virtual
10:00AM - 10:30AM	Break	
10:30AM - 11:30AM	Workshop 1-2	
11:30AM - 01:00PM	Break	
01:00PM - 02:00PM	Regular Session 3	
02:00PM - 02:30PM	Break	
02:30PM - 03:30PM	Regular Session 4	

Keynote

Deep Learning Networks for Medical Image Analysis: its past, future, and issues

IEEE Fellow Ph.D. Pau-Choo (Julia) Chung

Abstract

The advancement of image understanding with deep learning neural networks has brought great attraction to those in image analysis into the focus of deep learning networks. The demonstrated capability triggers broad interests of its application into medical image analysis. The characteristics of medical images are extremely different from photos and video images. The application of medical image analysis is also much more critical. For achieving the best effectiveness and feasibility of medical image analysis with deep learning approaches, several issues have to be considered. In this talk we will give a brief overview of the development of neural networks for medical image analysis in the past and the future trends with deep learning. Several issues in regard of the data preparation, techniques, and clinic applications will also be discussed.

Biography

Pau-Choo (Julia) Chung (S'89-M'91-SM'02-F'08) received the Ph.D. degree in electrical engineering from Texas Tech University, USA, in 1991. She then joined the Department of Electrical Engineering, National Cheng Kung University (NCKU), Taiwan, in 1991 and has become a full professor in 1996. She served as the Head of Department of Electrical Engineering (2011-2014), the Director of Institute of Computer and Communication Engineering (2008-2011), the Vice Dean of College of Electrical Engineering and Computer Science (2011), the Director of the Center for Research of E-life Digital Technology (2005-2008), the Director of Electrical Laboratory (2005-2008), and the Director of Computer and Network Center, NCKU. She was elected Distinguished Professor of NCKU in 2005 and received the Distinguished Professor Award of Chinese Institute of Electrical Engineering in 2012. She also served as Program Director of Intelligent Computing Division, Ministry of Science and Technology (2012- 2014), Taiwan. She was the Director General of the Department of Information and Technology Education, Ministry of Education (2016-2018). She served the Vice President for Members Activities, IEEE Computational Intelligence Society (CIS) (2015-2018). Currently she is the Vice President for Education, IEEE CIS. She is also the Dean of College of Electrical Engineering and Computer Science, and the Dean of Miin Wu School of Computing, NCKU.

Dr. Chung's research interests include computational intelligence, medical image analysis, video analysis, and pattern recognition. Dr. Chung participated in many international conferences and

society activities. She served as the program committee member in many international conferences. She served as the Publicity Co-Chair of WCCI 2014, SSCI 2013, SSCI 2011, and WCCI 2010. She served as an Associate Editor of IEEE Transactions on Neural Network and Learning Systems (2013-2015) and the Associate Editor of IEEE Transactions on Biomedical Circuits and Systems. Currently she is an Associate Editor of IEEE Transactions on Artificial Intelligence.

Dr. Chung was the Chair of IEEE Computational Intelligence Society (CIS) (2004-2005) in Tainan Chapter, the Chair of the IEEE Life Science Systems and Applications Technical Committee (2008-2009). She was a member in BoG of CAS Society (2007-2009, 2010-2012). She served as an IEEE CAS Society Distinguished Lecturer (2005-2007) and the Chair of CIS Distinguished Lecturer Program (2012-2013). She served on two terms of ADCOM member of IEEE CIS (2009-2011, 2012-2014), the Chair of IEEE CIS Women in CI (2014). She is a Member of Phi Tau Phi honor society and is an IEEE Fellow since 2008.

Program in Detail

Wednesday, 24 November, 2021

9:00AM - 10:00AM – Special Session (1-1)

Virtual

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

Determination of the Height of 3D Objects By Moire Measurement
Shang-Ya Wu, Hsia-Ping Lan, Cho-Fan Hsieh, Cheng-Yu Peng

Secret data transmission via hybrid sliding mode synchronization
Jun-Juh Yan, Jiunn-Shiou Fang, Jason Sheng-Hong Tsai, Li-Huseh Chiang, Shu-Mei Guo

Implementation of Tire Status Estimation Using Hall Sensor and G-Sensor
Wei-Hsuan Chang, Rong-Terng Juang, Min-Hsiang Huang, Min-Feng Sung

Automated Eight-Arm Maze Trajectory Tracking System for Feature Extraction of TBI Animals
Shu-Cing Wu, Chi-Yuan Lin, Liang-Jyun Hong, Chi-Chun Chen

Deep Learning used to Recognition Swimmers Drowning
Wei-Hsuan Chang, Rong-Terng Juang, Min-Hsiang Huang, Min-Feng Sung

10:00AM - 10:30AM –Break

10:30AM - 11:30AM – Special Session (1-2)

Virtual

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

Wearable Parkinson's Disease Finger Tapping Quantitative Evaluation Chip Design Combined with Impedance Sensing
Jih-Syong Fong, Ya-Hui Chuang, Fu-Sheng Yu, I-Chyn Wey, San Fu Wang

An Effective Preprocess for Deep Learning Based Intrusion Detection
Chia-Ju Lin, Ruey-Maw Chen

Truck driving assistance system
Chi-Chun Chen, Shang-Lin Tien, Yan-Ting Lin, Chung-Chen Teng, Meng-Hua Yen

Learning Inertial Measurement Error Compensation in GPS Signal Shielded Using LSTM
Yu-Fan Wu, Guo-Shing Huang, Ming-Cheng Kao

11:30AM - 01:00PM –Break

01:00PM - 02:00PM – Special Session (3)

Virtual

Chair: Jing-Wein Wang (National Chin-Yi University of Technology)

SVM-RBF Kernel Learning Model for Activity Recognition in Smart House
Zhi-Wei Chou, Ying-Kai Lu, Ke-Nung Huang

A YOLO-Based Method for Oblique Car License Plate Detection and Recognition
Wei-Chen Li, Ting-Hsuan Hsu, Ke-Nung Huang, Chou-Chen Wang

An Efficient HEVC Intra Frame Coding Based On Deep Convolutional Neural Network
Tien-Yang Hsu, Yueh-Ju Lu, Tung-Hung Hsieh, Chou-Chen Wang

A Novel Big Data Processing Approach to Feature Extraction for Electrical Discharge Machining based on Container Technology

Denata Rizky Alimadji, Min-Hsiung Hung, Yu-Chuan Lin, Benny Suryajaya, Chao-Chun Chen

02:00PM - 02:30PM – Break

02:30PM - 03:30PM – Special Session (4)

Virtual

Chair: Cheng-I Chen, Yeong-Chin Chen (National Central University, Asia University)

Fuzzy Q-learning Control for Temperature Systems

Lon-Chen Hung

Face-recognition System Design and Manufacture

Mengjun Wu

PV System Using Intelligent Controller for Unbalanced Current Compensation

Kuang-Hsiung Tan

Selective Compensation Strategy of Shunt Active Power Filter Based on IEEE Std. 1459

Cheng-I Chen

Using Dynamic Time Warping Method for the Similarity Measurement of Fluorescent Lamp Arc

Yu-Jen Liu

CFD simulations for thermal comfort and energy saving

Chung-Jen Tseng

03:30PM - 04:00PM – Break

04:00PM - 05:00PM – Regular Session (1)

Virtual

Chair: To Be Invited

Proposal for a personalized adaptive speaker service to support the elderly at home

Takumi Akashi, Masahide Nakamura, Kiyoshi Yasuda, Sachio Saiki

Research and Design of Single Phase Inverter Based on Fuzzy PID Control

Xuebin Qin, Xing Nian and Wei Gao

Analyzing heatstroke patients in 2020 using Emergency Big Data

Kento Matsuba, Sachio Saiki and Masahide Nakamura

Concentration-based robot control method using FPGA

Yan Xin, Wang Mei, Li Yuancheng and Li Minghang

Compass4SL: a Service for Sharing Problems and Solutions for the Elderly at Home

Kazuki Unigame, Daiki Takatsuki, Sachio Saiki, Masahide Nakamura and Kiyoshi Yasuda

Characterizing Smart Systems with Interactive Personalization

Takuya Nakata, Sachio Saiki and Masahide Nakamura

Thursday, 25 November, 2021

9:00AM - 10:00AM – Opening Ceremony (Campus Tour Video)

Virtual

10:00AM - 10:30AM –Break

10:30AM - 11:30AM – Keynote Speech

Virtual/National Chin-Yi University of Technology

(Prof. Pau-Choo Chung)

11:30AM - 01:00PM –Break

01:00PM - 02:00PM – Special Session (5)

Virtual

Chairs: Guo-Shiang Lin (National Chin-Yi University of Technology)

Chen-Kuo Chiang (National Chung-Cheng University)

Chih-Chung Hsu (National Cheng Kung University)

Apply image identification to improve the localization of the selfdriving vehicles

Shao-Hui Liu, ShihYen Huang

Modified convolutional network for the identification of Covid-19 with a mobile system

Jzau-Sheng Lin, Shen-An Fang, Cheng-Ze Li

Pipeline Manager: A flexible semi-automatic dataflow analysis framework

Cheng-Hui Chen, Huai-Che Hong, Yu-Shiang Hong, Hsiao Yu Wang, Shyr-Shen Yu

Conditional Data Augmentation for Sky Segmentation

Zheng-An Zhu, Chien-Hao Chen, Chen-Kuo Chiang

Lightweiht Feature Aggregation Module for Object Detection of Radar Image

Chieh Lee, Chih-Chung Hsu

A Co-Attention Method Based on Generative Adversarial Networks for Multi-view Images

Qi-Xian Huang, Shu-Pei Shi, Guo-Shiang Lin, Day-Fann Shen, Hung-Min Sun

02:00PM - 02:30PM –Break

02:30PM - 03:30PM – Special Session (7)

Virtual

Chairs: Mei Wang (Xi'an University of Science and Technology)

Concentration-based robot control method using FPGA

Xuebin Qin, Nian Xing, Wei Gao

02:30PM - 03:30PM – Workshop (1-1)

Virtual

Chairs: Masahide Nakamura (Kobe University)

Conceptual Framework for Next-Generation Software Ecosystems

Kenichi Matsumotoo

How to Enlighten Novice Users on Behavior of Machine Learning Models?

Haruto Mizutani, Masateru Tsunoda, Keitaro Nakasai

Early Identification of Active Developers Based on Their Past Contributions in OSS Projects

Tomoki Koguchi, Akinori Ihara

A Simulation Model of Software Quality Assurance in the Software Lifecycle
Hiroto Nakahara, Akito Monden, Zeynep Yucel

Association Metrics Between Two Continuous Variables for Software Project Data
Takumi Kanehira, Akito Monden, Zeynep Yucel

03:30PM - 04:00PM –Break

04:00PM - 05:00PM – Regular Session (2)

Virtual

Chair: *To Be Invited*

Web-based systems for inventory control in organizations: A Systematic Review
Gunther Harold Misahuaman Zavaleta, Alfredo Daza and Emily Zavaleta

Segmentation of Spinal MRI Images and New Compression Fracture Detection
Yung-Kuan Chan, Chieh-Shan Lin, Hsuan-Jung Lin and Kei-Tung Yip

SolarWinds Software Supply Chain Security – Better Protection with Enforced Policies and Technologies
Jeong Yang, Young Lee and Arlen McDonald

Different Methods For Sound Source Localization
Vishwas Kumar and Ram Reddy

Insect Species Identification System Based on Deep Learning
Yung-Kuan Chan, Wei-Chin Lee, Wen-Xuan Chen, Yu-Chun Chen, Wu-Chun Tu and Zong-Han Yeh

An Investigation on Multiscale Normalised Deep Scattering Spectrum with Deep Residual Network for Acoustic Scene Classification
Xing Yong Kek, Cheng Siong Chin and Ye Li

Friday, 26 November, 2021

09:00AM - 10:00AM – Special Session (8)

Virtual

Chair: Chia-Chen Lin(*National Chin-Yi University of Technology*)

Reversible Data Hiding for SMVQ Compressed Images Based on De-Clustering Rules
Kun-Sheng Sun, Ji-Hwei Horng and Chin-Chen Chang

Integrated Hamming Coding Operation to Reversible Data Hiding Scheme for Encrypted Images
Yi-Hui Chen, Pei-Yu Lin

A Data Hiding Technology by Applying Interpolation in Extended Local Binary Pattern
Chi-Shiang Chan, Li-Wei Chang, and Husan-Jen Lin

A High Embedding Capacity Steganographic Method Using Maximum and Minimum Pixels Difference Adaptive Strategy
Pei-Chun Lai, Jau-Ji Shen and Yung-Chen Chou

A Reversible Database Watermark Scheme for Textual and Numerical Datasets
Chin-Chen Chang, Thai-Son Nguyen, Chia-Chen Lin

Security Analyses of an Anonymous Two Factor Authentication Protocol for Roaming Service in Global Mobile Networks
Ya-Fen Chang, Huan-Wen Chen, Ting-Yu Chang, and Wei-Liang Tai

10:00AM - 10:30AM –Break

10:30AM - 11:30AM – Workshop (1-2)

Virtual

Chairs: Masahide Nakamura(*Kobe University*)

Effectiveness of Explaining a Program to Others in Finding Its Bugs
Toshihiro Nakamura, Akito Monden, Mariko Sasakura, Hidetake Uwano

Analysis of Human Competency Based on Used Classes
Wilson Chukwu Emmanuel, Akito Monden, Mariko Sasakura

Which Dependency was Updated? Exploring Who Changes Dependencies in npm packages
Vittunyuta Maeprasart, Ayano Ikegami, Raula Gaikovina Kula, Kenichi Matsumoto

Interactive ChatBots for Software Engineering: A Case Study of Code Reviewer Recommendation
Noppadol Assavakamhaenghan, Raula Gaikovina Kula and Kenichi Matsumoto

Developing Event Routing Service to Support Context-Aware Service Integration
Takuya Nakata, Sinan Chen, Masahide Nakamura

Study of Microservice Execution Framework Using Spoken Dialogue Agents
Hayato Ozono, Sinan Chen, Masahide Nakamura

11:30AM - 01:00PM –Break

01:00PM - 02:00PM – Regular Session (3)

Virtual

Chair: *To Be Invited*

Arabic Sign Language Recognition: Towards a dual way communication system between deaf and non-deaf people
Faculty of sciences of Gabes, Redcad Laboratory

Music Impression Extraction Method by chord impressions and Its Application to Music Media Retrieval
Hiroki Nakata and Takafumi Nakanishi

Quantum Annealing Approach for the Optimal Real-time Traffic Control using QUBO
Amit Singh, Chun-Yu Lin, Chung-I Huang and Fang-Pang Lin

Structure-Preserving Deep Autoencoder-based Dimensionality Reduction for Data Visualization
Ayushman Singh and Kaustuv Nag

Multi-layer Perceptron based Beamformer Design for Next-Generation Full-Duplex Cellular Systems
Sudip Biswas, Umesh Singh and Kaustuv Nag

Apply image identification to improve the localization of the self-driving vehicles
Shao-Hui Liu and Shih-yen Huang

02:00PM - 02:30PM –Break

02:30PM - 03:30PM – Regular Session (4)

Virtual

Chair: *To Be Invited*

Theory of Software to Calculate the Social Distancing in Covid-19 Times
Huber Nieto-Chaupis

Computational Simulation for Measuring Anomalous Dynamics of Therapeutic Nanoparticles
Huber Nieto-Chaupis

Geometry-based Software Theory for Predicting Subsequent Waves from a First One in Global Pandemic
Huber Nieto-Chaupis

Simulation of Beginning of Renal Damage from R-C Circuits at the Renal Glomerulus
Huber Nieto-Chaupis

The Covid-19 Outbreak Italy Case: Potential Causes and Factors that Triggered the Exponential Number of Cases: A Theory and Simulation Approach
Huber Nieto-Chaupis

Key issues for Digital Factory Designing and Planning: A Survey
Han Wang, Wencai Du and Shaobin Li

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>