





**25th IEEE/ACIS International Summer Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing**

# （SNPD 2023-Summer）

# Final Program

**July 5-6, 2023**

**JinYu International Convention Center, Taiyuan**

**https://acisinternational.org/conferences/snpd-2023-summer/**

**Sponsors**

**IEEE Computer Society**
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**Finance Chair**

Roger Y Lee, Central Michigan University, USA

## Program at a Glance

### Wednesday, July5, 2023-Online

| Time | Activity | Location |
|---|---|---|
| 8:30-8:40 | Opening Ceremony | Online |
| 8:40-9:30 | Keynote 1 | Online |
| 9:30-10:20 | Keynote 2 | Online |
| | | |
| 10:20-12:20 | | |
| Session1 A1 /A2 (Online) | | |
| | | |

### Thursday, July6, 2023–JinYu International Convention Center（瑾瑜国际会议中心）

| Time | Activity | Location |
|---|---|---|
| 8:00-12:00 | Registration | Foyer |
| 8:30-8:40 | Opening Ceremony | Academic Report Hall |
| | | |
| 9:10-10:40 | | |
| No. 5 Conference Room | | Academic Report Hall |
| Session A3<br>Special Session_SS1 | | Session B3<br>Workshop_SENGIT2023&SMTA2023 |
| 10:40-11:00 Coffee Break | | |
| 11:00-12:00 | | |
| No. 5 Conference Room | | Academic Report Hall |
| Session A4<br>Special Session_SS1 | | Session B4<br>Workshop_ICS2023 |
| | | |
| 12:00-13:30 Lunch Buffet | | |
| | | |
| 14:20-16:05 | | |
| No. 5 Conference Room | | No. 3 Conference Room |
| Session A5<br>Workshop_ICS2023 | | Session B5<br>Workshop_ICS2023 |
| 16:05-16:20 Coffee Break | | |
| 16:20-17:50 | | |
| No. 5 Conference Room | | No. 3 Conference Room |
| Session A6<br>Workshop_ICS2023 | | Session B6<br>Workshop_ICS2023 |
| | | |
| 18:00 - 20:00 Dinner Banquet | | |

## Keynote 1

# The convergence of digital twin technology and Personal Healthcare

Dr. Yeong-Tae Song

Dept. of Computer and Information Sciences, Towson University, USA

**Abstract**

The concept of Digital Twin (DT) has now been applied to various sectors of human society and the trend of using is rapidly growing despite the fact that it requires vast digital infrastructure. Regardless of their physical counterparts, the ultimate goal of using DT is to improve the quality of human life and living environment. Even though, there are numerous application areas such as manufacturing, smart city, supply chain, retail, and healthcare, in this talk, I'd like to focus more on healthcare sector starting out by discussing the convergence of the digital twin technologies and application of the technologies on healthcare especially on personal healthcare using IoT, networking technologies, standard based medical data, cybersecurity, and cloud computing. With such effort, DT will lead us to personalized precision medicine with less medical errors and the improvement of personal health.

**Bio**

**Dr. Yeong-Tae Song** has earned a MS and Ph.D. from the University of Texas at Dallas in 1993 and 1999, respectively. He has more than 8 years industry experience as a software engineer in Munro-Garrett International and a software test engineer at ODS networks, where he primarily worked on ATM (Asynchronous Transfer Mode) networks. He has been an assistant professor at the university of Arkansas at Little Rock for two years before joining Towson University in 2001 where he currently serves as a full professor. His research areas have been software engineering, program slicing, software impact analysis, enterprise architecture, digital twin, and health information technology. He has published more than 80 conference papers and journal papers. He has been principal investigator (PI) for numerous projects from federal (with NASA) to local industries. With federal grant (NASA), he worked on telemedicine project for astronauts. He has completed various state projects such as smart learning management system for medical personnel, Child fatality review, emergency medical info for paramedics. He also worked with a Ghanian university for electronic health record systems with clinical sensors.

## Keynote 2

# On the Opportunities and Risks of Large Models for the Field of Medical and Health Care

Dr. Lizhen Fu

School of Software, North University Of China, China

**Abstract**

A Large Model is any model that is trained on broad data that can be fine-tuned to a wide range of downstream tasks; current examples include SAM, GPT-3, GPT-4, ChatDoctor, etc.. From a technological point of view, large models are not new, they are based on deep neural networks and self-supervised learning, both of which have existed for decades. However, the sheer scale and scope of large models from the last few years have stretched our imagination of what is possible; for example, GPT-3 has 175 billion parameters and can be adapted via natural language prompts to do a passable job on a wide range of tasks despite not being trained explicitly to do many of those tasks. Large models acquire linguistic and visual capabilities to perform reasoning and search, and interact with humans. The capabilities of large models indicate that they have the potential to transform various sectors and industries, extending the role AI plays in society. At the same time, existing large models have the potential to accentuate harms, and their characteristics are in general poorly understood. In this talk, She will first overviews the emerging paradigms for building artificial intelligence (AI) systems based on a general class of models which we term large models, in the field of medical and health care. In addition, She will discuss the opportunities and challenges for the application of large models in this field.

**Bio**

**Dr. Lizhen Fu** was a vice President of Blockchain Technology Research Institute in North University of China. She received a Ph.D from Renmin University of China, and did two year Postdoc research at the University of Helsinki, Finland. Her research interests include following fields: Big data and data mining technology, intelligent diagnosis technology, graph database system and block-chain technology. She has published more than 30 SCI/EI papers and won the second prize of Beijing Science and Technology Progress Award.

## July 5, 2023

| Opening Ceremony& Keynotes (SNPD2023) | | Online |
|---|---|---|
| **8:30-10:20 CST (GMT+8)** | | |
| 8:30-8:40 | Opening Ceremony | |
| 8:40-9:30 | Keynote 1 | Yeong-Tae Song |
| 9:30-10:20 | Keynote 2 | Lizhen Fu |

**Zoom Link for the Opening Ceremony/Keynote Speakers**
https://us06web.zoom.us/j/83470357472?pwd=Y0sreURzVkhFaG5tQlpIZE8rTkpvdz09
Meeting ID: 834 7035 7472
Passcode: 311114

**Zoom Link for Sessions A1/A2**
https://us06web.zoom.us/j/87887495433?pwd=Y0ZqNVJTZ2FhSjZYOE45YjNKaC9oZz09
Meeting ID: 878 8749 5433
Passcode: 949202

| Sessions A1/A2 | | Online |
|---|---|---|
| **Session Chair: Wencai Du** | | |
| **10:20-12:20 CST (GMT+8)** | | |
| 10:20 | An Empirical Study on Scrum Deviations in Organizations with Software Development | Maytawee Juntorn and Twittie Senivongse |
| 10:35 | A GAN-based Approach to Detect AI-Generated Images | Galamo Monkam, Weifeng Xu and Jie Yan |
| 10:50 | Efficient MIH/SDN SDN-Based Vertical Handover for 5G HetNets | Khitem Ben Ali and Faouzi Zarai |
| 11:05 | Subcellular Protein Patterns Classification Using Extreme Gradient Boosting with Deep Transfer Learning As Feature Extractor | Manop Phankokkruad and Sirirat Wacharawichanant |
| 11:20 | Fault diagnosis and prognosis modeling methods in predictive maintenance: A Systematic Review | Yosr Baccari, Ismael Bouassida Rodriguez and Nesrine Khabou |
| 11:35 | An Assessment of Fintech for Open Banking: Data Security and Privacy Strategies from the Perspective of Fintech Users | Amila Munasinghe, Srimannarayana Grandhi and Tasadduq Imam |
| 11:50 | An Approach for Constructing Multi-Modal Spatio-Temporal Ontology of Ship Communication | Yitao Zhang, Ruiqing Xu, Zaiwen Feng, Wangping Lu, Junfeng Xu and Da Ning |
| 12:05 | Optic Cup Segmentation from Fundus Image using Swin-Unet | Xiaozhong Xue, Linni Wang, Ayaka Ehiro, Yahui Peng and Weiwei Du |

## July 6, 2023

| Opening Ceremony Offline (SNPD2023) | | Academic Report Hall |
|---|---|---|
| **8:30-9:00 CST (GMT+8)** | | |
| 8:00-12:00 | Registration | Foyer |
| 8:30-8:40 | Opening Ceremony | Academic Report Hall |
| 8:40-9:00 | Take Photo for all the participants | Foyer |

**Note：Registration 14:30-20:00 July 5，Zhongbei Hotel**
**Dinner buffet 18:30-20:00 July 5，Zhongbei Hotel**

| **Session A3** | | **No. 5 Conference Room** |
|---|---|---|
| **Special Session_SS1** | | |
| **Session Chair: Kailong Zhang** | | |
| **9:10-10:40 CST (GMT+8)** | | |
| 9:10 | A Genetic Algorithm based Parallel Task Planning Method for Cooperative MRS | Li Yu, Wang Tianyang, Zhang Zhongqiu, Ren Xiaokun |
| 9:25 | Design of Airborne Intelligent Computing System Oriented to Intelligent Task Processing | Linting Bai, Pengcheng Wen, Jianchun Xie, Yunxi Li, Rongchao Lin |
| 9:40 | Improve Information Service Capabilities from Content Aggregation to Knowledge Provision with Generative Pre-trained Transformer (GPT) | Li Yu, Pei Bohao, Yu Qiang, Zhang Wei |
| 9:55 | Service-oriented Intelligent OODA Loop | Zhirou Yang, Linting Bai, Kai Che, Pengcheng Wen |
| 10:10 | Improving Efficiency of Catastrophic Cascade Attacks by Combining Multi-attribute Node Influence | Yan Zhao, Pengcheng Wen, Linting Bai, Xinzhi Liu, Zhonghua Wang, Na Wu |
| 10:25 | SAR Imaging of Targets with Complex Motions Based on the Non-uniformed Sampled Integrated Modified Chirp Rate-Quadratic Chirp Rate Distribution | Zongyang Sun |

| **Session B3** | | **Academic Report Hall** |
|---|---|---|
| **Workshop_SENGIT2023&SMTA2023** | | |
| **Session Chair: Lizhi Cai** | | |
| **9:10-10:40 CST (GMT+8)** | | |
| 9:10 | Object Oriented BDD and Executable Human-language Module Specification | Eric Lee, Jiayu Gong, Qinghong Cao |
| 9:25 | Honeytoken-Detector: A Symbolic Execution-Based Honeypot Token Detection Tool | Lizhi Cai, Yi Liu |
| 9:40 | Research on Quality Model for Quantum Simulator Software | Chao Wang, Jingwei Chen, JianXin Ge, XueZhong Wu, QianQian Qu, Le Luo |
| 9:55 | Research on Measuring Method of function size of information system | Du Chunye |
| 10:10 | Research on domain knowledge representation techniques | Wei ji, Qinghong Cao, Jin Shi, Enyao Zhu, Tianyi Xu, Hao He, Meihong Jin |
| 10:25 | Business Scenario Driven Reinforcement Learning Testing Method | Jin Wang |
| 10:40 | The Research and Improvement of Facial Expression Recognition Algorithm Based on Convolutional Neural Network | Xiaofang Jin, Jinyu Liu, Ding Yue |

| **Session A4** | **No. 5 Conference Room** |
|---|---|
| **Special Session_SS1** | |

| Session Chair: Kailong Zhang | | |
|---|---|---|
| **11:00-12:00 CST (GMT+8)** | | |
| 11:00 | Research on the Distributed Secure Storage of Embedded Terminals Based on the Blockchain | LI Yun-xi, WANG Zhong-hua, Du Cheng-lie, LI Ya-hui, MA Jian-feng, NIU Wen-sheng |
| 11:15 | The Scheduling analysis method of embedded real-time system based on AADL-IO Annex | Guo Peng, Zhang Xiao, Wang Yang |
| 11:30 | Inter-satellite routing study for LEO constellations based on orbit prediction | Lei Chaowen, Wang Zhijun, Wang Junrui, Cheng Shiqi, Wang Tao |
| 11:45 | ISAR Imaging of Targets with Complex Motions Based on the Non-uniformed Sampled Integrated Modified Chirp Rate-Quadratic Chirp Rate Distribution | Zongyang Sun, Linting Bai, Kangfa Xu |

| Session B4 | Academic Report Hall | |
|---|---|---|
| **Workshop_ICS2023** | | |
| **Session Chair: Xin Zhang** | | |
| **11:00-12:00 CST (GMT+8)** | | |
| 11:00 | Research on Information Dissemination and Digital Art | Jinbao Song, Xiangyu Sun,Yu He, Ran Li |
| 11:15 | Multi-Head Self-Attention Network for Multi-View Deep Clustering | Jian Zhou, Qike Cao,Chao Song, Yu Zhou, Xiaowen Xi,Dongmei Li |
| 11:30 | Named entity recognition in electronic medical records based on RoBERTa embedding and BiLSTM-CRF | Feng Lin, Sisi Luo, Dongsheng Shi, Qian Zhong, Yiying Lin, Dongmei Li |
| 11:45 | Fusion of Multi-headed Self-attention for Traditional Chinese Medicine Knowledge Graph Representation Learning | Yiying Lin, Feng Lin, Yu Yang, Dongsheng Shi,Qianzhong Chen,Wentao Zhu,Dongmei Li, Pingxiao Zhao |

| Session A5 | No. 5 Conference Room | |
|---|---|---|
| **Workshop_ICS2023** | | |
| **Session Chair: Wenqian Shang** | | |
| **14:20-16:05 CST (GMT+8)** | | |
| 14:20 | A novel method of translation memory to improve machine translation | Weida Han |
| 14:35 | A Health Management System for Forest Musk Deer Based on YOLOv5 | Meiqi Zhao, Haiyan Wang,Yinuo Li,Chi Zhang |
| 14:50 | Research on the Financing of College Students' Innovation and Entrepreneurship from the Perspective of Fusion Media | Zheng Dan, Xu Xianhong |
| 15:05 | Research on the Management Strategy of Marketing Personnel Loss Risk Based on Big Data Marketing | Xianhong Xu, Fengyang Sun |
| 15:20 | Research on the improvement strategy of digital transformation of education based on ChatGPT | Zhang Yinping, Zhou Yongxin |
| 15:35 | Feedback Attention Neural Network | Chunhua Wang, Wenqian Shang |
| 15:50 | Differential game and simulation of supply chain joint promotion considering spillover effect | Yongjie Tian |

| Session B5 | No. 3Conference Room | |
|---|---|---|
| **Workshop_ICS2023** | | |
| **Session Chair: Jian Yang** | | |
| **14:20-16:05 CST (GMT+8)** | | |
| 14:20 | Design and Implementation of A High-Performance Rendering Algorithm for Large Terrain Systems based on GPU Parallel Computing | Sun Hongdi, Jia Minzheng, Gao Zhu |
| 14:35 | An Extractive Text Summarization Model Based on Rhetorical Structure Theory | Xin Zhang, Qiyi Wei, Qing Song, Pengzhou Zhnag |
| 14:50 | A Fact-searching and Matching System Based on News Content about COVID-19 | Liu Jianyang, Bao Junrong, Li Bingjin, Feng Zhiang, Zhang su |
| 15:05 | Detection of New Crown Epidemic Rumors Based on Knowledge Graph | Liu Jianyang, Bao Junrong, Li Bingjin, Feng Zhiang, Zhang su |
| 15:20 | The Character Recognition Method Based on OCR | Liu Jianyang, Bao Junrong, Li Bingjin,Feng Zhiang,Zhang su |
| 15:35 | Video Copy Detection Based on Blockchain | Liu Jianyang,Bao Junrong,Li Bingjin,Feng Zhiang,Zhang su |
| 15:50 | Chinese Text Correction System Based on Ernie | Shang Wenqian,Ji Jialing,Liu Yiru |

| Session A6 | No. 5 Conference Room | |
|---|---|---|
| **Workshop_ICS2023** | | |
| **Session Chair: Wenqian Shang** | | |
| **16:20 -17:50 CST (GMT+8)** | | |
| 16:20 | Analysis of the employment intention of students under the epidemic situation | Yuping Li,Weiguang Zheng |
| 16:35 | A Multi-label Support Vector Machine-based Transformer Fault Prediction Method | Zhimin Shao,Qi Shao, Yong Wang, Junsan Zhang |
| 16:50 | RoBGP: A Nested Biomedical Named Entity Recognition Method Based on RoBERTa and Global Pointer | Chao Song,Jiao Long,Dongmei Li,Feng Lin,Xiaoping Zhang |
| 17:05 | Discussion on Network Security under SDN Architecture | Chenqing Tsai, Kai Song |
| 17:20 | The Intellectualized Disposal System of Cognitive Domain's Confrontation | Zhengxiang Tan, Wenqian Shang |
| 17:35 | Analysis and Discussion of Ecological Architecture for Resource-Oriented Online Programming | Yuhao Gao, Shufeng Duan, Yiru Huo |

| Session B6 | No. 3 Conference Room | |
|---|---|---|
| **Workshop_ICS2023** | | |
| **Session Chair: Jian Yang** | | |
| **16:20 -17:50 CST (GMT+8)** | | |
| 16:20 | Sentiment Analysis of Hybrid Network Model | Shang Wenqian, Zhen Hongzhan, Zhang Wanyu |
| 16:35 | Design and Implementation of a Bluetooth Privacy-preserving Contact Tracking App | Jianjun Lin,Mingming Dong,Qianning Cui |
| 16:50 | Video AI Super-Resolution Reconstruction System | Jingtao Shang, Taolong Zhou, ChongFahui,LiWei |
| 17:05 | Organotin-Induced Embryonic Oxidative Stress as an Analogue for Harmful Data Perturbations in Model Training | Haojia Zhu, Zitong Zhao, Tianyi Wang |
| 17:20 | Exploring the Current Landscape and Future Directions of Information Technology in Dance Education | Chen, J., Du, W., Xu, S. |

# 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. Published by Springer, Germany.

https://acisinternational.org/ijndc/

**International Journal of Software Innovation (IJSI)**
IJSI is a world-class international journal. IJNDC Journal has been indexed in ESCI and Scopus. Published by IGI-Global, USA

http://www.igi-global.com/ijsi

**International Journal of Big Data Intelligence and Applications (IJBDIA)**
Published by IGI-Global, USA

https://acisinternational.org/ijndc/

## ACIS Official Website
http://www.acisinternational.org