

Final Program



20th IEEE/ACIS International Conference on Computer and Information Science (ICIS 2021 Summer)



June 23-24, 2021

Shanghai Development Center of Computer Software Technology

Shanghai

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

Program at a Glance

Wednesday, June 23, 2021

Time (UTC+8)	Activity	Meeting information
9:30 – 9:50	Opening Ceremony	<p>Join Zoom Meeting https://zoom.us/j/93287592154?pwd=UmtRYU52eGtKbkNna3RCc2NtM2ZNdz09</p> <p>Meeting ID: 932 8759 2154 Passcode: 080609</p>
9:50 - 10:50	Keynote 1	
10:50 - 11:00	Break	
11:00 - 12:00	Keynote 2	
12:00 - 13:30	Lunch	
13:30 - 15:10	Regular Session (5)	
15:10 - 15:30	Break	
15:30 - 17:30	Regular Session (5)	

Time (UTC+8)	Activity	Meeting information
14:00 – 17:00	SMTA 2021 Workshop (11)	<p>Join Tencent Meeting https://meeting.tencent.com/s/Ume3u3arl9gX</p> <p>Meeting ID: 697 711 062 Passcode: 0623</p>

Thursday, June 24, 2021

Time (UTC+8)	Activity	Meeting information
9:30 – 10:50	Regular Session (4)	Join Zoom Meeting https://zoom.us/j/93287592154?pwd=UmtRYU52eGlKbkNna3RCc2NtM2ZNdz09 Meeting ID: 932 8759 2154 Passcode: 080609
10:50 - 14:00	Break	
14:00 – 15:20	Regular Session (4)	

Meeting Information

ICIS 2021-Summer (Zoom Meeting):

Topic: ICIS 2021-Summer

Time: Jun 23, 2021 09:00 AM Beijing, Shanghai

Every day, until Jun 24, 2021, 2 occurrence(s)

Jun 23, 2021 09:00 AM

Jun 24, 2021 09:00 AM

Please download and import the following iCalendar (.ics) files to your calendar system.

Daily: [https://zoom.us/meeting/tJcvf-](https://zoom.us/meeting/tJcvf-6tpzkrH9A4lbP08MFFalzJmgNtIO2U/ics?icsToken=98tyKuCrrDMtH92XsRyDRowqAIqgKO_xmHpcgvp8yBPnM3ALTyXQN-5YGL94Psz5)

[6tpzkrH9A4lbP08MFFalzJmgNtIO2U/ics?icsToken=98tyKuCrrDMtH92XsRyDRowqAIqgKO_xmHpcgvp8yBPnM3ALTyXQN-5YGL94Psz5](https://zoom.us/meeting/tJcvf-6tpzkrH9A4lbP08MFFalzJmgNtIO2U/ics?icsToken=98tyKuCrrDMtH92XsRyDRowqAIqgKO_xmHpcgvp8yBPnM3ALTyXQN-5YGL94Psz5)

Join Zoom Meeting

<https://zoom.us/j/93287592154?pwd=UmtRYU52eGIKbkNna3RCc2NtM2ZNdz09>

Meeting ID: 932 8759 2154

Passcode: 080609

One tap mobile

+13126266799,,93287592154#,,,,*080609# US (Chicago)

+13462487799,,93287592154#,,,,*080609# US (Houston)

Dial by your location

+1 312 626 6799 US (Chicago)

+1 929 205 6099 US (New York)

+1 301 715 8592 US (Washington DC)

SMTA 2021 Workshop (Tencent Meeting)

Topic: SMTA 2021 Workshop

Time: 2021/6/23 14:00-17:00 UTC+8

Join Tencent Meeting:

<https://meeting.tencent.com/s/Ume3u3arl9gX>

Meeting: 697 711 062

Passcode: 0623

One tap mobile

+8675536550000,,697711062# (China Mainland)

+85230018898,,2,697711062# (China Hongkong SAR)

Dial by your location

+8675536550000 (China Mainland)

+85230018898 (China Hongkong SAR)

Keynote 1

Self-Replay Augmented Record and Replay for Android

Zijiang Yang Ph. D

Founder of GuardStrike Inc.

Professor, Xi'an Jiaotong University, China

yang@guardstrike.com

Abstract

Record-and-replay tools are indispensable for quality assurance of mobile applications. In this talk, we present a record-and-replay tool targeting a wide adoption. Specifically, a dynamic instrumentation technique is used to accommodate rich sources of inputs in the application layer satisfying various constraints requested from industry. A self-replay mechanism is proposed to record more information of user inputs for accurate replaying without degrading user experience. In addition, an adaptive replay method is designed to enable replaying events on different devices with diverse screen sizes and OS versions. Through an evaluation on 53 highly popular industrial Android applications and 265 common usage scenarios, we demonstrate the effectiveness in recording and replaying rich sources of inputs on the same or different devices.

Biography

Zijiang Yang received his PhD from the Univ. of Pennsylvania, M.S. from Rice Univ. and B.S. from the University of Science and Technology of China, all in computer science. He is the founder of GuardStrike Inc and professor at Xi'an Jiaotong University. Before founding GuardStrike he was a professor at Western Michigan University. He is the chair of IEEE Technical Committee on Electric and Autonomous Driving, general chair of the 2019 IEEE International Conference on Software Testing, Verification and Validation, program committee chair of the 2018 International Conference on Reliable Software Engineering. Dr. Yang received ACM SIGSOFT outstanding paper award, ACM TODAES best Journal Paper Award. As of February 2021 he published 98 papers and a co-inventor of 10 US patents.

Keynote 2

Heterogeneous Computing: Tackling Various Computational Operations with Differential Software and Hardware

Hai Jiang, Ph.D.

Professor, Department of Computer Science

Arkansas State University, USA

hjiang@astate.edu

Abstract

In modern computers, all computational operations are specified in programs and executed in corresponding pipelines in unified Central Processing Units (CPUs). To improve system efficiency and speed up application execution, heterogeneous computing decentralizes the processing process and utilizes different software and hardware components on various computational operations. Other than CPU, many autonomous co-processors, accelerators, device drives, and special circuits have been developed to address domain specific tasks. In recent years, DSPs (Digital Signal Processors), GPUs (Graphics Processing Units), APUs (Accelerated Processing Units), TPUs (Tensor Processing Units), FPGAs (Field-Programmable Gate Array) and ASICs (Application-Specific Integrated Circuits) have demonstrated their effectiveness in domain specific processing. Both data and computations are arranged to achieve “Near Resource Computing” for efficient and accelerated application execution. This talk focuses on the architectural and programming trends in Heterogeneous Computing.

Biography

Dr. Hai Jiang is a professor in the Department of Computer Science at Arkansas State University, USA. He received his Ph.D. degrees from Wayne State University, USA. His research interests include Parallel & Distributed Systems, Cloud Computing, Big Data, High Performance Computing & Communication, Cryptography, and Computer & Network Security. Dr. Jiang is a professional member of ACM and IEEE computer society. He has published four books and more than 100 papers in refereed journals, conference proceedings and multiple book chapters. He has been involved in more than 100 conferences and workshops as a program/workshop chair or as a program committee member. He serves as an editor or guest editor for multiple international journals such as IEEE

Transactions on Network Science and Engineering. He has been chairing IEEE Technical Committee on Scalable Computing (TCSC) PhD Dissertation Award Selection Committee since 2017.

Program in Detail

Thursday, June 23, 2021

9:30 - 9:50 – Opening Ceremony **Zoom Meeting**

9:50 - 10:50 – Keynote 1 **Zoom Meeting**

10:50 - 11:00 –Break

11:00 - 12:00 – Keynote 2 **Zoom Meeting**

12:00 - 13:30 – Lunch

13:30 - 15:10 – Regular Session(5) **Zoom Meeting**

Chair: Jianxin Ge(Shanghai Development Center of Computer Software Technology)

Situational Awareness Platform Based on Multi-source Vulnerability Fusion
Chao Wang, MinGang Chen and JiaYu Gong

Evaluation method of Enterprise Cybersecurity
Meng Zhang, Yue Zhou, Che Li, Shuang Li, Jianhua Wu and Chao Yan

Mobile App Personal Information Security Detection and Analysis
Shuang Li, Meng Zhang, Che Li, Yue Zhou, Kanghui Wang and Yaru Deng

Application of BP Neural Network in Prediction of Ground Settlement in Shield Tunneling
Min Hu, Bin Zhang and Mengdong Lu

Automatic Music Mashup Creation Method by Similarity of Features
Kyosuke Miyamura, Ryotaro Okada and Takafumi Nakanishi

15:10 - 15:30 –Break

15:30 - 17:10 – Regular Session (5) **Zoom Meeting**

Chair: Jianxin Ge(Shanghai Development Center of Computer Software Technology)

Image Steganography using GANs
Ketan Ramaneti, Pranavi Kakani and Chaitanya Krishna Mullapudi

Face depth prediction by the scene depth
Bo Jin, Leandro Cruz and Nuno Gonçaves

Weather Map Prediction Using RGB Metaphorical Feature Extraction for Atmospheric Pressure Patterns
Takeru Hakii, Koshi Shimada, Takafumi Nakanishi, Ryotaro Okada, Keigo Matsuda, Keiko Takahashi and Ryo Onishi

Heart Sound Segmentation Based On a Joint HSMM Method
Yao Zhang, Zeyu Ma, Xin Zhou, Xianhong Li, Ying Liu, Mingang Chen, Xin Sun, Xuying Wang, Jingtao Wang, Lizhi Cai and Kun Sun

A Framework and Decision Algorithm to Determine the Best Feature Extraction Technique for Supporting Machine Learning-Based Hate Speech Detection,
Chun-Kit Ngan and Kashyap Bhuvva.

14:00 - 17:00 – SMTA 2021 Workshop (11)

Chair: Jiefeng Liu & Xin Zhang(Communication University of China)

Tencent Meeting

Marketing Logistics Cost Optimization and Application Research in Smart Living
Xianhong Xu

Classifying subway passengers based on mobile network data analysis
Xingrui Lou, Ming Yan

Transformer-IC : The Solution to Information Loss
Wenqian Shang, Jiazhao Chai

Acoustics Measurement and Simulation Analysis of Small Theater
Hui Ren, Yushu Zhao, Nili Bai

Construction and Application of a Tree Knowledge Graph
Xianghao Meng, Yu Yang, Hexiang Qi, Dongmei Li, Jiayuan Zhang, Yu Lu, Guoliang Huang

The Influence of Reverberation on the Perceptual Judgment of Cross-Lingual Speakers' Timbre
Yali Liu, Mian Wu

Multi-Hop Reasoning for Question Answering with Knowledge Graph
Jiayuan Zhang, Yifei Cai, Qian Zhang, Zehao Cao, Zhenrong Cheng, Dongmei Li, Xianghao Meng

Optimizing convolutional neural network performance by mitigating underfitting and overfitting
Qipei Li, Ming Yan

Research on Image Classification Based on Deep Learning
Jiao Li, Nanchang Cheng

A New Wolves Intelligent Optimization Algorithm
Yanchao Sun, Wei Chen, Yuqing Wu

Research on the Model of Academic Status Based on Deep Learning
Yanchao Sun, Wei Chen, Minzheng Jia

Thursday, June 24, 2021

9:30 – 10:50 – Regular Session (4)

Zoom Meeting

Chair: Zeyu Ma(Shanghai Development Center of Computer Software Technology)

Performance comparison test of HBase and Cassandra based on YCSB
Cui Xiaoxue and Chen Wenjie

Max-Fusion of Random Ensemble Subspace Discriminant with Aggregation of MFCCs and High Scalogram Coefficients for Acoustics Classification
Cheng Siong Chin and Jianfang Xiao

Accessible Programming Language for Visually Impaired Students
Sajeban Antonyrex and Saman Hettiarachchi

On the Erdős-Sós conjecture for stars, paths and some of their variants
Antoine Bossard

10:50 - 14:00 –Break

14:00 – 15:20 – Regular Session(4)

Zoom Meeting

Chair: Meng Zhang(Shanghai Development Center of Computer Software Technology)

Analysis on the quality model of big data software
Xijiao Xu, Huanming He, Wei Song and Jiayu Gong

Algorithms for a variant of the full Steiner tree problem
Haiyan Wang, Binchao Huang and Jianping Li

Sustainable Energy Resources of Bangladesh: A Big Data Approach
Sowvik Kanti Das, H. M. Mahir Shahriyar and Mahady Hasan

A Partitioning Algorithm Based on Exact Resolution to Solve Big Data PTSP
Mohamed Abdellahi Amar

2021 Conference Schedule

Dates	Location	Conference Name	Acronym
Sept. 13-15	Zhohai China	6 th IEEE/ACIS International Conference on Big Data, Cloud Computing, and Data Science Engineering	BCD 2021
		*Technically sponsored by IEEE 8 th ACIS International Conference on Computational Science/Intelligence & Applied Informatics (co-located with BCD 2021)	CSII 2021
June 20-22	Kanezawa Japan	18 th IEEE/ACIS International Conference on Software Engineering, Management and Applications	SERA 2021
		8th ACM/ACIS International Conference on Applied Computing & Information Technology (co-located with SERA 2021)	ACIT 2021
Nov. 24-26	Taichung Taiwan	22 nd IEEE/ACIS International Summer Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing	SNPD 2021 Summer
Oct 13-15	Xi'An China	21 st IEEE/ACIS International Fall Conference on Computer and Information Science	ICIS 2021 Fall

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>