



2020 International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery

(Name in Chinese: 第12届网络分布式计算与知识发现国际会议)

October 29-30, 2020(Beijing Time)

Organized by:

Chongqing University of Posts and Telecommunications

Co-organizers:

Chongqing Institute of Engineering, Nanjing University of Posts & Telecommunications, Zhengzhou University, University of Louisville

Technically Sponsored by:

IEEE, IEEE Computer Society,

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Financially Sponsored:

Huawei, Chongqing University of Posts and Telecommunications, and InfoBeyond

Entrance to **CyberC2020 Main Venue & Session 1,3,5,7**

Link: <https://meeting.tencent.com/s/cd9Bj0bR86Eb>

(Please copy and paste in your browser to join the meeting.)

Platform: Tencent Meeting (China)/ VooV Meeting (overseas)

Meeting ID: 887 8971 3450

Beijing Time: 08:30am-18:00pm (10/29/2020-10/30/2020)

EST (New York): 20:30pm-06:00am (10/28/2020-10/30/2020)

Maximum Number of People: 300

Password: N/A



QR for Main Venue

Entrance to **CyberC2020 Branch Venue & Session 2,4,6,8**

Link: <https://meeting.tencent.com/s/lq8SjYKXDYai>

(Please copy and paste in your browser to join the meeting.)

Platform: Tencent Meeting (China)/VooV Meeting (overseas)

Meeting ID: 887 7697 4396

Beijing Time: 12:30pm-18:00pm (10/29/2020-10/30/2020)

EST (New York): 12:30am-06:00am (10/29/2020-10/30/2020)

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QR for Branch Venue

Web: www.CyberC.org; QQ Group: 426380304



Welcome

Welcome you to the 12th CyberC (International Conference on Cyber-enabled distributed computing and knowledge discovery). CyberC started from 2009 in focus of cyber-enabled technology. It especially covers various R&D topics in the areas of cyber-networks, AI and machine learning, Blockchain and cyber security, wireless communications, and Internet of Things, and other cyber-related research. CyberC has established itself as an informative forum for presentation and discussion of innovative cyber-enabled technologies. CyberC 2020 is hosted by Chongqing University of Posts and Telecommunications and co-organized with Chongqing Institute of Engineering, Nanjing University of Posts & Telecommunications, Zhengzhou University, University of Louisville.

Thanks for the supports from the IEEE, IEEE Computer Society, IEEE Big Data, IEEE SDN, and IEEE Communications society on Big Data. We also sincerely express our appreciation to Huawei, Chongqing University of Posts and Telecommunications, and InfoBeyond. CyberC is impossible without these sponsorships.

Enjoy the conference!

Bin Xie and Jin Dai
On behalf of CyberC 2020
October 12, 2020

Important notes for CyberC paper authors:

- ◆ CyberC 2020 is virtually hosting online
- ◆ All papers **have to** be orally presented with PPT.
- ◆ Please join in our WeChat, QQ (426380304) groups for urgent notification if we have.
- ◆ Oral presentation time slots — minimal time: 15 minutes, and maximal time: 20 minutes.
- ◆ Each session will have a Session Chair **who will record if your paper is presented or not.**
- ◆ Other issues please contact us: papers@cyberc.org or onsite.

International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery

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International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery

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TBD

CyberC 2020 Keynotes

Keynote A: Changxiang Shen, Chinese Academy of Engineering, China



Dr. Changxiang Shen is an academician of the Chinese Academy of engineering. He graduated from the Department of mathematics of Zhejiang University in 1965. His research interests include military computer information systems, cryptographic engineering, information security architecture, system software security (secure operating systems, secure databases, etc.), network security, etc. He is currently a member of the Standing Committee of the Information and Electronic Engineering Department of the Chinese Academy of Engineering, a member of the State Council Information Technology Expert Advisory Committee, an office consultant of the State Password Management Committee, and the director of the Information Confidentiality Professional Committee of the Chinese Computer Society. He was once awarded the honorary title of “Navy Model Scientific and Technological Worker” and was named a national young and middle-aged expert with outstanding contributions. He has completed more than 20 major scientific research projects and achieved many important results. He has won 2 first prizes, 3 second prizes, 3 third prizes, and more than 10 military science and technology progress awards.

Topic: Establish a scientific concept of network security and build a strong defense line of network security

Abstract: This talk will introduce an active immune trusted computing system in order to defend cyberspace vulnerability. This system is designed in a dual computing protection structure that consists of secure and trusted computing nodes, which implement active immune triple-protection supported by the Trusted Security Management Center. It achieves the safety protection such that unauthorized persons cannot obtain sensitive information, the system and its information cannot be changed, and cyber-attacks are immunized maximally. Such a system provides safe and reliable accessibility for users through innovative trusted cryptosystems, innovative active immune system structures, and advanced trusted computing. Trusted computing 3.0 has been successfully applied in 5G backbone networks, national power and other fields.

CyberC 2020 Keynotes

Keynote B: David M. Perry, InfoBeyond Technology LLC, USA



David Perry completed his education from the University of Kentucky and Purdue University (West Lafayette, IN). His research interests are software engineering, programming languages, and program verification. Specifically, he has performed research involving program analysis, automated program verification/testing, semantic-based program clustering, and symbolic execution optimization. He has conducted research at the National Security Agency, Sandia National Laboratory, and MIT Lincoln Laboratory where he contributed to software development for High Performance Computing systems. Since 2018, he has been working at InfoBeyond on R&D projects awarded by the Department of Energy and Department of Defense. David has published several papers at ACM SIGPLAN, ACM ICSE, IEEE/ACM ASE, ACM SIGSOFT, etc.

Topic: SemCluster: Clustering of Imperative Programming Assignments Based on Quantitative Semantic Features

Abstract: A fundamental challenge in automated reasoning about programming assignments at scale is clustering student submissions based on their underlying algorithms. State-of-the-art clustering techniques are sensitive to control structure variations, cannot cluster buggy solutions with similar correct solutions, and either require expensive pair-wise program analyses or training efforts. We propose a novel technique that can cluster small imperative programs based on their algorithmic essence: (A) how the input space is partitioned into equivalence classes and (B) how the problem is uniquely addressed within individual equivalence classes. We capture these algorithmic aspects as two quantitative semantic program features that are merged into a program's vector representation. Programs are then clustered using their vector representations. The computation of our first semantic feature leverages model counting to identify the number of inputs belonging to an input equivalence class. The computation of our second semantic feature abstracts the program's data flow by tracking the number of occurrences of a unique pair of consecutive values of a variable during its lifetime.

The comprehensive evaluation of our tool SemCluster on benchmarks drawn from solutions to small programming assignments shows that SemCluster (1) generates far fewer clusters than other clustering techniques, (2) precisely identifies distinct solution strategies, and (3) boosts the performance of clustering-based program repair, all within a reasonable amount of time.

CyberC 2020 Keynotes

Keynote C: Lei Zhang, James Watt School of Engineering, University of Glasgow, UK



Dr. Lei Zhang is a Senior Lecturer (Associate Professor) at the University of Glasgow, U.K. He received his Ph.D. from the University of Sheffield, U.K. His research interests include wireless communication systems and networks, blockchain technology, data privacy and security, radio access network slicing (RAN slicing), Internet of Things (IoT), multi-antenna signal processing, MIMO systems, etc. He has 19 patents granted/ filed in more than 30 countries/regions including US/ UK/EU/China/Japan etc. Dr Zhang has published 3 books and 100+ peer-reviewed papers. He received IEEE Communication Society TAOS Best Paper Award 2019. He is a Technical Committee Chair of 5th International conference on UK-China Emerging Technologies (UCET) 2020. He was the Publication and Registration Chair of IEEE Sensor Array and Multichannel (SAM) 2018, Co-chair of Cyber-C Blockchain workshop 2019. He is an associate editor of IEEE Internet of Things (IoT) Journal, IEEE Wireless Communications Letters and Digital Communications and Networks. Dr Zhang's research was widely covered by media including BBC.

Topic: Wireless Blockchain Networks for COVID-19, 6G, and Automation

Abstract: Originally proposed as the backbone technology of Bitcoin cryptocurrency, blockchain has become a revolutionary decentralised data management framework that can transform the way in which we share information. It offers immutable, transparent, secure and auditable ledger in a trust-less distributed environment, to verify the integrity and traceability of information/assets during their life cycle. Moreover, without a central authority's involvement, blockchain-enabled smart contracts can significantly reduce manual interventions and thus improve efficiency.

In this talk, wireless blockchain network (WBN), with different network topology and communication protocols, for various commonly used blockchains will be introduced. We will also discover the challenges of WBN, and the relationship between the communication (in terms of spectrum and power provision), and the wireless blockchain network performance (in terms of scalability, throughput and latency, and security). We will try to answer one important question, how much communication resource is needed to run a wireless blockchain network. The talk will present three exemplary use cases we are recently developed: 1), how to use blockchain to achieve privacy-preserving contact tracing APP for COVID-19; 2) how to use blockchain for 5G and beyond spectrum (and computing, power) resource management and sharing; 3), how to use distributed blockchain protocols to achieve high reliable consensus for missing critical industrial IoT and automation.

CyberC 2020 Keynotes

Keynote D: Guangyi Liu, China Mobile, China



Dr. Guangyi Liu, received his PhD. from Beijing University of Posts and Telecommunications in 2006. He joined China Mobile since 2006, now he is the leading specialist and 6G director of China Mobile Group. Before he joined China Mobile, he has worked for Shanghai Bell and Siemens (Now Nokia) for 3 years. He has led the standardization and industrialization of 4G and 5G in China mobile from 2007 to 2019. Now he is leading the research of 6G. He is also acting as the vice chair of THz and mm-wave industry alliance, and has acted as the chair of spectrum working group and coordinator of 5G eMBB program in Global TD-LTE Initiative (GTI). He has been granted more than 150 patents, and authored and coauthored more than 7 books and published more than 150 papers in IEEE journal and conference.

Topic: 6G beyond 2030: digital twin, ubiquitous intelligence

Abstract: 5G has been commercialized globally in large scale since 2019. The new era of 'Internet of Everything' has been started, which will stimulate the new demand for improved capabilities of mobile network from the perspective of data rate, efficiency and reliability, etc. These demands will drive the mobile communication evolve towards 6G. Now the research of 6G is still in the stage of vision requirements definition and technical exploration, and the 6G key technical directions are still divergent and far from consensus. With the deep integration of DICT, 6G will fully support the digitization of the world to realize the vision of “digital twin, ubiquitous intelligences”. The twin digital world is the image of the physical world, helping us to further improve the quality of our life and increase the production efficiency. Some typical application scenarios, such as twin body area networks and sensory interconnections related to human development, super smart transportation, holographic communication and intelligent production related to social development, etc., demand higher and more comprehensive network performance indicator requirements for 6G network, such as extremely high reliability, global terrestrial and non-terrestrial 3D coverage, and 2~3 times the spectrum efficiency improvement.

With the emergence of new scenarios in the future, 6G network needs more new key performance indicators. The 6G network seems to have several basic features: on-demand fulfillment, lite network, soft network, native AI, native security and digital twin, which will bring innovations to the wireless communication network and realize more efficient and intelligent network development. Network architecture is the cornerstone and framework of the 6G mobile system. We need to further explore it and wish to reach consensus with the industry. So that the future network can be deeply integrated into people's daily life, work and entertainment, empower thousands of industries, and achieve the grand goal of 6G rebuild a new world.

CyberC 2020 Organizers

Anup Kumar - Steering Chair, PhD, Professor, University of Louisville, Kentucky, USA



Anup Kumar (ak@louisville.edu) completed his Ph.D. from North Carolina State University and is currently a Professor of CECS Department at the University of Louisville. He is also the Director of Mobile Information Network and Distributed Systems (MINDS) Lab. His research interests include web services, wireless networks, distributed system modelling, and simulation. He has co-edited a book titled, "Handbook of Mobile Systems: Applications and Services" published by CRC press in 2012. He is an Associate Editor of IEEE Tran. on Services Computing. He is also the Associate Editor of Internal Journal of Web Services Research and Int. Society of Computers and Their Application Journal. He is a member of IEEE Distinguished Visitor Program (2006-2008). He was the Chair of IEEE Computer Society Technical committee on Simulation (2004-2007). He has published and presented over 150 papers.

Some of his papers have appeared in ACM Multimedia Systems Journal, several IEEE Transactions, Wireless Comm. and Mobile Computing, Journal of Parallel and Distributed Computing, IEEE Journal on Selected Areas in Communications etc. He was the Associate Editor of Journal of Engineering Design and Automation 1995-1998. He has served on many conference program and organizing committees such as IEEE ISCC 2007, IEEE ICSW-2006, IEEE MASS-2005, IEEE SCC-2005, IEEE ICWS-2005, CIT-2005, IEEE MASCOTS, ADCOM 97 and 98. He has also edited special issues in IEEE Internet Magazine, and International Journal on Computers and Operations Research.

Chi-Ming Chen (陳啟明) - Advisor, Ph.D., AT&T Labs, USA



Chi-Ming Chen joined AT&T in 1995. He is with the AT&T Labs architecture organization which designs the Enhanced Control Orchestration Management Platform (ECOMP) and Open Network Automation Platform (ONAP). Prior to joining AT&T, Chi-Ming was with the Quality Assurance Center of Bell Communications Research (Bellcore) from 1985 to 1995 and was a faculty member at Tsing Hua University, Hsinchu, Taiwan from 1975 to 1979. He received his Ph.D. in Computer and Information Science from the University of Pennsylvania in 1985; M.S. in Computer Science from the Pennsylvania State University in 1981; M.S. and B.S. in Physics from Tsing Hua University, Taiwan, in 1973 and 1971 respectively.

Chi-Ming Chen is a Life Senior Member of IEEE and Senior Member of the ACM. He is an Advisory Board Member of IEEE Communications Society (ComSoc) Technical Committee on Communications Quality & Reliability (CQR). He was a member of the IEEE GLOBECOM & ICC Management & Strategy (GIMS) Standing Committee and served as the GLOBECOM and ICC Site Selection Chair from 2012 to 2017. He has chaired the Industry Forums of several GLOBECOMs and ICCs and is serving as the GIMS Advisor for ICC 2020, Shanghai, China.

From 2015 to 2017, Chi-Ming was a Steering Committee member of the IEEE SDN Initiative and IEEE Big Data Initiative. Currently, he is co-chairing the 5G Roadmap Working Group of IEEE 5G Initiative. He has been a key Organizing Committee member of CyberC conference since it's started in 2009. In addition, he also organizes the annual IEEE Emerging Technology Reliability Roundtable (ETR-RT) since 2014.

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Tzyh-Jong (TJ) Wang, PhD, AT&T, USA



Dr. TJ Wang is currently with AT&T since 2008. He is a system engineer for mobility operations support systems focusing on mobility network end-to-end performance and reliability. Prior to joining AT&T, TJ was with DEC, Bellcore, Lucent Technologies and UTStarcom between 1987 and 2008.

He received his Ph.D. in Industrial Engineering from the University of Wisconsin-Madison in 1987; and B.S. in Industrial Engineering from Tsing Hua University, Taiwan, in 1978.

Jin Dai, Dean of School of Software Engineering, Chongqing Univ. of Posts and Tele. China



Jin Dai is a professor at the Chongqing University of Posts and Telecommunications, China. He received his Ph.D. from the Chongqing University, China. His research interests include big data knowledge engineering and intelligent information processing. He has been serving as a PI or key personnel in more than 20 research projects funded by the national key research and development project, the national natural science foundation of China, etc. He has published papers and three academic books in the area of data mining and software design.

Keynote 9: Prof. Guangxia Xu, Chongqing University of Posts and Tele., Chongqing, China



Dr. Xu is currently Ph.D. adviser, vice director of Network and Information Security Engineering Center of Chongqing. She is a senior member of China Computer Federation (CCF); Blockchain Committee member; ACM and IEEE member; vice chairman of Information Security Association of Chongqing; expert of National Natural Science Foundation and committee member of Technical Committee on Fault Tolerant Computing of CCF. She has served as director of Big Data Security and Intelligence Analytics Technology Innovation Team in Chongqing. She was a visiting scholar at Stevens Institute of Technology, New Jersey, USA and a post-doctor at School of Communication and Information Engineering, Chongqing University. Prof. Xu 's research interests include Blockchain Technology and Application, Big Data Security and Analytics, Network Security and Management, IoT Security and AI Security. Extensive and novel results have been accomplished and most of them have already been published through high-quality journal, conference papers and projects. She is in charge of one sub-project of National Science and Technology Support Projects, two projects of National Natural Science Foundation of China, one sub-project of information Security Projects of National Development and Reform Commission, and more. In addition, she is a reviewer for ACM Computing Surveys, IEEE Access, Digital Communications and Network, International Journal of Geographical Information Science, and member of the editorial board of Journal of Chongqing University of Posts and Telecommunications.

CyberC 2020 Organizers

Bin Xie, CEO, InfoBeyond Technology LLC, USA



Dr. Bin Xie received his M.Sc. and Ph.D. degrees in Computer Science and Computer Engineering from the University of Louisville, Kentucky, USA, 2003 and 2006 respectively. He is the co-editor/author of books titled *Handbook/Encyclopedia of Ad Hoc and Ubiquitous Computing* (World Scientific: ISBN-10: 981283348X, World Scientific Publisher) (Best Selling in 2012 & 2013), *Handbook of Applications and Services for Mobile Systems* (Auerbach Publication, Taylor and Francis Group, ISBN: 9781439801529, 2012) and *Heterogeneous Wireless Networks- Networking Protocol to Security*, (VDM Publishing House: ISBN: 3836419270, 2007.

Dr. Xie has published 70+ papers (4000+ citations) in the IEEE conferences and journals. His research interests are focused on, cyber security, big data, machine learning, and wireless communications. In particular, he has performed research works on the fundamental aspects of ABAC & Security Policy, Multilevel Security, Authentications, Security Monitoring and Network Security, Cloud Computing and HPC, Data Security, Distributed Network Storage, Satellite Networks, Wireless Sensor networks, Collaborative Machine Learning and Streaming (e.g., Graph Streaming), and Deep Learning.

Dr. Xie is the founder of the InfoBeyond Technology LLC. The company provided services to many companies from small businesses to public companies. His research works are awarded from the U.S. Navy and Naval Research Laboratory, U.S. Air Force and Air Force Research Laboratory, U.S. Army and CERDEC, Department of Energy - Office of Science, Department of Transportation, NIST (National Institute of Standards and Technology), Department of Commerce, Missile Defense Agency, Marine Corps, Kentucky Cabinet for Economic Development, and Kentucky Office of Commercialization and Innovation. Some other achievements include: (i) Fast growth IT-tech small businesses featured by The Silicon Review in 2017, (ii) Successful SBIR Story in 2018 for R&D of Security Policy Tool by NIST, (iii) Business Leader in Advancing the Network and Data Security Industry by Insight Success Magazine, (iv) Most Promising Storage Solution Providers by CIOReview Magazine in 2020. His research on blockchain has reported by The Block that is the leading research, analysis and news brand in the digital asset space. His story is also reported by CryptoGround that is an independent publishing house to provide Cryptocurrency & Blockchain Technology News.

Dr. Xie severed for NIH Special Emphasis Panel on System Science and Health in the Behavioral and Social Sciences, ZRG1 HDM-Q (50), 2012-2017. He is an editor member of the Journal of International Journal of Information Technology, Communications, and Convergence (IJITCC). He was the Guest Edit Chair of Elsevier Future Generation Computer Systems (FGCS) in a special issue on Mobile Computing, 2012.

International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery

Conference Schedule

Meeting: **CyberC2020 Main Venue & Session 1,3,5,7**
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QR for Main Venue

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 Link: <https://meeting.tencent.com/s/lq8SjYKXDYai>
 (Please copy and paste in your browser to join the meeting.)
 Platform: Tencent Meeting (China)/VooV Meeting (overseas)
 Meeting ID: 887 7697 4396
 Beijing Time: 12:30pm-18:00pm (10/29/2020-10/30/2020)
 EST (New York): 12:30am-06:00am (10/29/2020-10/30/2020)
 Maximum Number of People: 300
 Password: N/A



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CyberC 2020 Keynotes, October 29, 2020

Time	Speaker	Topics
08:50 – 09:00	CQUPT	Opening Speech
09:00 – 10:00	Changxiang Shen (沈昌祥院士), China	<i>Establish a Scientific Concept of Network Security and Build a Strong Defense Line of Network Security</i>
10:00 – 10:20	Bin Xie	Opening Speech
10:20 – 11:20	David M. Perry, InfoBeyond, USA	<i>SemCluster: Clustering of Imperative Programming Assignments Based on Quantitative Semantic Features</i>
11:20 – 13:00	Lunch Break	
13:00 – 14:40	Paper Session 1 <i>Blockchain and Security</i>	Paper Session 2 <i>Security and Privacy</i>
	Paper Session 3 <i>Image Processing and NLP</i>	Paper Session 4 <i>Big Data and Machine Learning</i>

CyberC 2020 Keynotes, October 30, 2020

Time	Speaker	Topics
09:00 – 09:20	Bin Xie	<i>Logistics</i>
09:20 – 10:20	Lei Zhang, Univ of Glasgow, UK	<i>Wireless Blockchain Networks for COVID-19, 6G, and Automation</i>
10:20 – 11:20	Guangyi Liu, China Mobile, China	<i>6G beyond 2030: Digital Twin, Ubiquitous Intelligence</i>
11:20 – 13:00	Lunch Break	
13:00 – 14:40	Paper Session 5 <i>Cloud, Database, and Learning Applications</i>	Paper Session 6 <i>Machine Learning and Analytics</i>
	Paper Session 7 <i>6G, Network, and Wireless Communications</i>	Paper Session 8 <i>Robot, IoT, and Smart Sensor Networks</i>
16:20 – 17:00	Closing Ceremony and Best Paper Award Presentation	

International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery

Session 1: Blockchain and Security

Session Chair: Prof. Long Li, Guilin University of Electronic Technology, China

Conference Link: <https://meeting.tencent.com/s/cd9Bj0bR86Eb>, 13:00pm — 14:40pm October 29 (Beijing Time)

Authors (包括演讲人)	Paper Titles (报告主题)
Yuxiang Chen; Jian Bai; Yao Hao; Sijie Liao; Zhongqiang Yi; Hao Zhang	<i>Blockchain-based dynamic group management for multiple keywords searchable encryption technology</i>
Yang Tan; Wei Li; Juan Yin; Yun Deng	<i>A universal decentralized authentication and authorization protocol based on Blockchain</i>
Dominik Welte; Axel Sikora; Daniel Schönle; Jan Stodt; Christoph Reich	<i>Blockchain at the Shop Floor for Maintenance</i>
Haochen Yang; Guanghui Wang; Zhonghao Zhai; Xin He	<i>Towards Decentralized Trust Management Using Blockchain in Crowdsourcing Networks</i>
Etienne Elie; Yassin MT Hafid; Dimitrios Makrakis	<i>An Ethereum-Based Energy Trading Protocol (EETP)</i>
Siyuan Zhang; Chaoming Du	<i>Semi-supervised deep learning based network intrusion detection</i>
Guohang Lu; Yi Liu; Yifei Chen; Chengwei Zhang; Yayu Gao; Guohui Zhong	<i>A Comprehensive Detection Approach of Wannacry Analysis Rule Design and Experiments</i>

Session 2: Security and Privacy

Session Chair: Prof. Weifeng Lu, Nanjing Univ. of Posts and Tele., China

Conference Link: <https://meeting.tencent.com/s/lq8SjYKXDYai>, 13:00pm — 14:40pm October 29 (Beijing Time)

Authors (包括演讲人)	Paper Titles (报告主题)
Jingzhong Wang; Yue Zhang; Haibin Li	<i>Electronic voting protocol based on ring signature and secure multi-party computing</i>
Yuxin Sun; Yingzhou Zhang; Linlin Zhu	<i>An anti-collusion fingerprinting Based on CFF code and RS code</i>
Si Liao; Chenming Zhou; Yonghui Zhao; Zhiyu Zhang; Chengwei Zhang; Yayu Gao; Guohui Zhong	<i>A Comprehensive Detection Approach of Nmap: Principles, Rules and Experiments</i>
Meng Zhao; Yong Ding; Yujue Wang; Huiyong Wang; Bo Han	<i>Verifiable and Privacy-Preserving Outsourcing of Matrix Multiplications</i>
Haisheng You	<i>Intelligent Cybersecurity Situational Awareness Model Based on Deep Neural Network</i>
Jiajun Zhang	<i>Network Attack Detection Based on Kernel Principal Component Analysis and Decision Tree</i>
Jianbo Huang; Liang Chang; Long Li; Xuguang Bao	<i>An Adaptive Dummy-based Mechanism to Protect Location Privacy in Smart Health Care System</i>
Ying Fang; Tianlong Gu; Liang Chang; Long Li	<i>Algebraic Decision Diagram-Based CP-ABE with Constant Secret and Fast Decryption</i>

International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery

Session 3: Image Processing and NLP

Session Chair: Zhe Wang, University of Louisville, USA

Conference Link: <https://meeting.tencent.com/s/cd9Bj0bR86Eb>, 14:40pm — 16:20pm October 29 (Beijing Time)

Authors (包括演讲人)	Paper Titles (报告主题)
Lei Huang	<i>Single High-Value Region Detection Based on Image Equal-Segmentation</i>
Xia Huang	<i>An Image Data Query Algorithm Based on Ontology and singular value decomposition</i>
Deli Chen	<i>Image encryption algorithm based on Logistic-Sine compound chaos</i>
Yang Tao	<i>A VR/AR-based Display System for Arts and Crafts Museum</i>
Yanru Zhong; Leixian Zhao; Chaohao Jiang; Zhaorong He; Xiaonan Luo	<i>A semi-supervised feature fusion method for sentence similarity matching</i>
Zhaorong He; Leixian,Zhao	<i>Information extraction method based on dilated convolution and character-enhanced word embedding</i>
Zhen Li; ZengChun Yang	<i>Open Entity Semantic Relation Extraction in Big Data Environment</i>
Yu Wu; Zhenni Zhao; Jie Yang; Yijun Lin	<i>Weibo Sentiment Classification Based on Two Channels Text Convolution Neural Network with Multi-Feature</i>
Zhen Li	<i>Research on Open Entity Semantic Relation Extraction in Big Data Environment</i>

Session 4: Big Data and Machine Learning

Session Chair: Ruixuan Han, University of Louisville, USA

Conference Link: <https://meeting.tencent.com/s/lq8SjYKXDYai>, 14:40pm — 16:20pm October 29 (Beijing Time)

Authors (包括演讲人)	Paper Titles (报告主题)
Fulian Yin; Xueying Shao; Yifan Zhang; Xiaowei Zhu	<i>Classification and Characteristics analysis with Dynamic Model on Public Opinion in the Chinese Sina-microblog</i>
Fengcai Qiao; Jinsheng Deng; Wei Li	<i>An Online Framework for Temporal Social Unrest Event Prediction Using News Stream</i>
Dongmei Xia	<i>Fine clustering analysis of Internet financial credit investigation based on big data</i>
Fulian Yin; Sitong Li; Xiaowei Liu; Lingyao Zhu; Wenhui Yu	<i>A Hierarchical Participant Classification Model of Hot Events in Chinese Microblog</i>
Jindan Tan; Liang Chang; Tiejuan Liu; Xue-mei Zhao	<i>Attentional Autoencoder for Course Recommendation in MOOC with Course Relevance</i>
Yan Zhang; Liang Chang; Tiejuan Liu	<i>MOOCs Dropout Prediction Based on Hybrid Deep Neural Network</i>
Zelu Kang; Nong Xiao; Zhiguang Chen; Yang Ou; Xinming Li	<i>An Improved Parallel SVM Algorithm on Distributed System</i>
Muhammad Mufti Ramadhan; Budhi Irawan; Casi Setianingsih	<i>Translation Russian Cyrillic to Latin Alphabet using Random Forest Algorithm</i>

International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery

Session 5: Cloud, Database, and Learning Applications

Session Chair: Dr. Chunyan Sang, Chongqing University of Posts and Telecommunications, China
 Conference Link: <https://meeting.tencent.com/s/cd9Bj0bR86Eb>, 13:00pm — 14:40pm October 30 (Beijing Time)

Authors (包括演讲人)	Paper Titles (报告主题)
Robert Kelley, Antara Debnath Antu, Anup Kumar, Bin Xie	<i>Choosing the Right Compute Resources in the Cloud: An analysis of the compute services offered by Amazon, Microsoft, and Google</i>
Xi Shen	<i>Relational Database Watermarking for Data Tracing</i>
Chonghui Ge; Yunlong Di; Yuxin Sun; Yongjin Zhu; Linfeng Xie; Yingzhou Zhang	<i>A Database Collusion Detection and Measurement Based on Bloom Filter</i>
Chonghui Ge; Jian Sun; Yuxin Sun; Yunlong Di; Yongjin Zhu; Linfeng Xie; Yingzhou Zhang	<i>Reversible Database Watermarking Based on Random Forest and Genetic Algorithm</i>
Xiaowen Feng; Pengcheng Deng; Yanzi Yi; Qi Yu; Decun Luo; Hua, Deng; Yujue, Wang	<i>Verifiable Decentralized Access Control for Distributed Databases</i>
Yingzhou Zhang; Yunlong Di; YuXin Sun	<i>Database Traceability Algorithm Based On Zero Watermark</i>
Wei Wei	<i>Research on Index Scheme of Encrypted XML Data Structure</i>
Kou Lu; Jiajing Zhao; Jianming Zhang; Cheng Qin	<i>Multiple Kernel Learning via Ensemble Artifice in Reproducing Kernel Hilbert Space</i>

Session 6: Machine Learning and Analytics

Session Chair: Prof. Yinna Ye, Xi'an Jiaotong-Liverpool University, China
 Conference Link: <https://meeting.tencent.com/s/lq8SjYKXDYai>, 13:00pm — 14:40pm October 30 (Beijing Time)

Authors (包括演讲人)	Paper Titles (报告主题)
Junliang Wang; Kaiyou Yuan; Zehan Shi	<i>Multi-grained rough set in job guidance for college graduates</i>
Jinrui Gan; Peng Wu; Guoliang Zhang; Shiwen Dong; Zhaogang Han; Weiwei Liu	<i>Intelligent Fault Diagnosis with Deep Architecture</i>
Tinghui Huang; Sijun Li; Xinyu Gao	<i>Computing Resource Allocation and Offloading Method Based on Simulated Annealing Algorithm</i>
Bo Jiao	<i>Evaluating the Structural Model using Internet Interdomain Topological Datasets</i>
Wei Wang; Tiejuan Liu; Liang Chang; Tianlong Gu; Xuemei Zhao	<i>Convolutional Recurrent Neural Networks for Knowledge Tracing</i>
Yingchen Su; Yinna Ye	<i>Daily Passenger Volume Prediction in the Bus Transportation System using ARIMAX Model with Big Data</i>
Jin Dai; Jiayao Li	<i>News Influence Model Based on Neural Network</i>
Jin Dai; Haichuan Liu; Qirui Zhang	<i>One Class Support Vector Machine Active Learning Method for Unbalanced Data</i>

International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery

Session 7: 6G, Network, and Wireless Communications

Session Chair: Prof. Xiaolong Xu, Nanjing Univ. of Posts and Tele, China

Conference Link: <https://meeting.tencent.com/s/cd9Bj0bR86Eb>, 14:40pm — 16:20pm October 30 (Beijing Time)

Authors (包括演讲人)	Paper Titles (报告主题)
Jian Xie	<i>Design of wireless distributed monitoring system for brazing process parameters of four-way valve based on ZigBee</i>
Xia Sun; Yin Chen	<i>Utility Function based Power Control Scheme in Femtocell Network</i>
Weifeng Lu; Zhihao Ren; Jia Xu; Siguang Chen	<i>Cooperative Jamming Algorithm Based on Trust Update</i>
Runze Dong; Buhong Wang; Tianhao Cheng	<i>Security Performance Analysis of Physical Layer for UAV Swarm Networks</i>
Shengnan Chen; Liang Qian	<i>A Reliable and Efficient Distributed Semantic Discovery Mechanism for Mobile P2P Networks</i>
Junior Milembolo Miantezila; Bin Guo; Chenjie Zhang; Xuemei Bai	<i>Primary User Channel State Prediction Based on Channel Allocation and DBHMM</i>
Jin Dai; Xianjing Zhao; Xingxing Zhou; Qirui Zhang	<i>Research on Data Fusion Scheme of WSNs Based on DGM Prediction Model</i>
Bobo Yin; Ning Wang; Yajun Fan; Xiaofang Sun; Danping He; Wenhao Liu	<i>Evaluation of TDM-Based Integrated Access and Backhaul Schemes for 5G and Beyond at mmWave Band</i>

Session 8: Robot, IoT, and Smart Sensor Networks

Session Chair: Prof. Guangxia Xu, Chongqing University of Posts and Telecommunications, China

Conference Link: <https://meeting.tencent.com/s/lq8SjYKXDYai>, 14:40pm — 16:20pm October 30 (Beijing Time)

Authors (包括演讲人)	Paper Titles (报告主题)
Wenkao Yang; Wei Zhang	<i>Real-time Traffic Signs Detection Based on YOLO Network Model</i>
Chengchang WAN; Xinghui CAO; Wei WU; Chen WANG	<i>Ocean Sound Velocity Estimation Based on RBF Neural Networks</i>
Xiaosu Tan; Qingqin Luo; Shuang Yang; Yulian Jiang	<i>Hand-assisted rehabilitation robot based on human-machine master-slave motion mode</i>
Hanzhong Tan	<i>Line inspection logistics robot delivery system based on machine vision and wireless communication</i>
Hung-Chang Chang; Chen-Yi Lin; Da-Jyun Liao; Tung-Ming Koo	<i>The Modbus Protocol Vulnerability Test in Industrial Control Systems</i>