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**Conference Introduction**

Big Data lies at the center of modern science and technology, with major advances in analyzing & learning from Big Data concurrently reshaping human knowledge, society, and economy. The overwhelming amounts of data generated in many applications (fundamental sciences, cyber-physical systems, smart cities, sensor networks, and many more) alongside the urge for fast and effective handling and decision-making, in real-time, pose a number of significant challenges on the underlying system design and methods.

The 9th International Conference on Big Data Computing and Communications (BigCom2023), which is to be held on Aug. 4-6, 2023 in Qionghai, China. The conference aims to attract researchers and practitioners with interest in the theme of Big Data, in its broadest sense: analytics, management, security and privacy, communications, and high-performance computing. We welcome original, unpublished research papers that emphasize theoretical foundations, modeling, algorithmic methodologies, and data-driven applications in science and engineering. We also welcome visionary papers on new and emerging topics.

The related topics include but are not limited to:

Computing

o Data-intensive Parallel and Distributed Computing (Clouds, Clusters, Grids, P2P)

o Performance Analysis of Big Data Tools and Applications

o Computing on Network Edge

o Large-scale Optimization Methods

Mining

o Modeling and Algorithms for Big Data Analytics and Data Mining

o Knowledge Mining from Big data

o Network and Graph Mining

o High Dimensional Data Mining

Security

o Security and Legal Issue in Mobile Applications/Apps

o Privacy of Open Data

o Trust and Privacy Issues in Mobile Commerce Environment

o Cryptographic Protocols

Networking

o Artificial Intelligence & Internet of Things

o Cyber-physical Systems

o Wireless Networks

o Multi-agent Systems

Management

o Big Data Storage, Indexing, Searching and Querying

o Big Data Quality Management

o Heterogeneous Data Management

o Database and Data Warehouse Technologies for Big data

Applications

o Infrastructures and Frameworks of Data-driven Applications

o Mobile Device Apps based on Big Data

o Big Data for Healthcare

o Big Data for Smart Cities

**Instructions for Attending Conference**

（一）会议时间：2023年8月4日-8月6日（4日报到、5-6日会议、7日离会）

（二）会议地点：海南省琼海市博鳌亚洲论坛大酒店（地址：琼海市博鳌东屿岛远洋大道1号(东屿岛上)）

（三）会议报到及注意事项：

报到流程：会议签到——领取材料——领取餐券——办理入住

1.外地参与人员：请于 8 月 4 日 20:00前在亚洲论坛大酒店一楼大堂签到并领取参会证和会议资料，按工作人员指引在酒店前台凭身份证办理入住手续。本地参会人员：于 8 月 4 日 20:00前在亚洲论坛大酒店一楼大堂签到并领取参会证和会议资料。

2. 8月 5日上午的开幕式在亚洲论坛大酒店天鹅4厅，请您于当日上午 8:30-8:50 入场落座。

3.请妥善保管随身物品，注意人身和财产安全。

4.请您在会议期间将手机置于静音、震动或关闭状态。

5.会议期间用餐：（8 月 4 日晚餐至 8 月 6 日午餐）

早餐：07：00-08：30，地点：一楼怡景西餐厅（亚论）、一楼玉带滩咖啡厅（金海岸）（凭房卡用餐）

午餐：12：00-13：30，地点：一楼聚贤阁中餐厅（凭餐券用餐）

晚餐：18：00-19：30，地点：一楼聚贤阁中餐厅（凭餐券用餐）

8 月 5 日晚宴，地点：博鳌亚洲论坛国际会议中心一楼·东屿A厅 如有调整则以具体通知为准。

6.会后所有参会人员需凭餐券用餐，餐券不兑现金，遗失不补，如对饮食有特殊要求（清真、素食等），请提前告知会务组。

7.中午退房时间为 14:00，下午退房时间为 18:00。18:00前收半日租，请与会代表离会前办理好退房手续。

8. 海南 8 月份温度较高，比较炎热，建议穿轻棉织物制作的等清凉透气的衣服，并请做好防暑降温。

9.您有任何意见或要求请与会务组工作人员联系：

后勤会务组：陈璐滢，Tel：13092236529

**Committees**

### General Co-Chairs

Xiaoming Fu, Georg-August-University of Goettingen, Germany

Yusheng Ji, the National Institute of Informatics, Japan

### TPC Co-Chairs

Xiaowen Chu, The Hong Kong University of Science and Technology (Guangzhou), China

Xianpeng Wang, Hainan University, China

Jiahui Hou, University of Science and Technology of China, China

### Local Arrangement Chairs

Ting Jin, Hainan University, China

Di Wu, Hainan University, China

### Publicity Chairs

Ruiting Zhou, Southeast University, China

Zichuan Xu, Dalian University of Technology, China

Yupeng Li, Hong Kong Baptist University, Hong Kong, China

Tao Li, Indiana University-Purdue University Indianapolis, United States

### Publication Chairs

Xin He, University of Science and Technology of China, China

Haohua Du, Beihang University, China

### Industry Liaison Chairs

Haisheng Tan, University of Science and Technology of China, China

Chenren Xu, Peking University,China

Qiang Li, USTC-Deqing Alpha Innovation Institute, China

### Finance and Registration Chairs

Ludi Xue, University of Science and Technology of China, China

Luying Chen, USTC-Deqing Alpha Innovation Institute, China

### Web Chairs

Qi Song, University of Science and Technology of China, China

Shuli Zeng, University of Science and Technology of China, China

### Program Committee

Zichuan Xu, Dalian University of Technology, China

Zhuzhong Qian, Nanjing University, China

Zhi Zhou, Sun Yat-sen University, China

Zhenhua Han, Microsoft Research Asia, China

Zhenchun Wei, Hefei University of Technology, China

Zhen Ling, Southeast University, China

Zehua Guo, Beijing Institute of Technology, China

Yupeng Li, Hong Kong Baptist University, Hong Kong, China

Yong Xiao, Huazhong University of Science and Technology, China

Yijing Zeng, Meta, USA

Yifei Zhu, Shanghai Jiao Tong University, China

Yi Zhang, Xiamen University, China

Xiaozhen Lu, Nanjing University of Aeronautics and Astronautics, China

Xiaoxi Zhang, Sun Yat-sen University, China

Wenting Wei, Xidian University, China

Wang Ning, Chongqing University, China

Song Yang, Beijing Institute of Technology, China

Siguang Chen, Nanjing University of Posts and Telecommunications, China

Shigeng Zhang, Central South University, China

Shaohuai Shi, Harbin Institute of Technology, Shenzhen, China

Shang Gao, Jilin University, China

Qiang Ye, Memorial University of Newfoundland, Canada

Qiang Wang, Harbin Institute of Technology, Shenzhen, China

Qian Ma, Sun Yat-sen University, China

Qi Song, University of Science and Technology of China, China

Pan Zhou, School of Cyber Science and Engineering, Huazhong University of Science and Technology, China

Liyao Xiang, Shanghai Jiao Tong University, China

Lin Cui, Department of Computer Science, Jinan University

Huawei Huang, Sun Yat-sen University, China

Haohua Du, Beihang University, China

Hao Zhou, University of Science and Technology of China, China

Haipeng Dai, Nanjing University, China

Haiming Chen, Ningbo University, China

Geng Sun, Jilin University, China

Feng Shan, Southeast University, China

Fangxin Wang, The Chinese University of Hong Kong, Shenzhen, China

Dian Shen, Southeast University, China

Dan Tao, Beijing Jiaotong University, China

Chengjian Liu, Shenzhen Technology University, China

Chang Shan, Donghua University, China

### BIGCOM 2023 Conference Program

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| Day 1: Saturday, Aug 5  Venue:  Offline: BFA Hotel, Boao, Qionghai, Hainan China  会场：  线下：海南省琼海市博鳌亚洲论坛大酒店 | |
| **Opening Remarks**  **(开幕式)**  Host: Haisheng Tan | |
| Time | Speakers |
| 8:50:-9:00 | Opening Remarks by Chairs  会议主席发言 |
| 9:00-9:10 | Opening Remarks by TPC Chairs  会议技术委员会主席发言 |
| 9:10-9:30 | Take Photo  大会拍照 |
| **Keynote 1**  **(主题演讲1)** | |
| Time | Title /Author |
| 9:30-10:10 | **Prof. Yuguang Fang (**City University of Hong Kong, Hong Kong, China) Host: Jiahui Hou |
| 10:10-10:20 | Break |
| **Session 1: Network**  (论坛1：网络) | |
| Time | Title/Authors |
| 10:20-10:35 | NOMA-enhanced Uplink Transmission in STIN: Joint Optimization with Long-  term  Lijing Hu, Xianghui Hu, Zhou Zhang, Zhixin Liu, Jiaying Li, Jian Guo (Institute  of Systems Engineering Academy of Military Sciences) |
| 10:35-10:50 | Usage of Application-driven Ternary Divide-and-conquer Architecture of  Heterogeneous Internet of Things in Environmental Monitoring  Jinxin Zhang, Zhaoyi Meng, Fuyou Miao, Yan Xiong, Zonghao Xu, Yajie Yun, Ruikai Wang (University of Science and Technology of China) |
| 10:50-11:05 | INVA: An Intelligent Network Virtualization Architecture for Big Data Platform  Haitao Zhang, Yu Wu (Dongguan University of Technology) |
| 11:05-11:20 | The influence of the multicasting communication on the system capacity of  edge caching networks  Peiyan Yuan, Ming Li, Shuhong Li, Chunhong Liu, Xiaoyan Zhao (Henan  Normal University) |
| 11:20-11:35 | IoT Device Identification Base on Inter-flow Correlation Analysis Using Graph  Chuang Peng, Xiaobin Tan, Peng Xie, Mengxiang Li, Hao Wang, Shuangwu  Chen (University of Science and Technology of China) |
| 11:35-11:50 | Joint optimization of energy distribution, path selection and time allocation  for smart reflector assisted mmWave communication system  Enhui Yang, Yu Xing, Xing Guo (Anhui Jianzhu University) |
| 11:50-12:05 | TagVibra: push the limit of RFID-based vibration sensing  Jian Li, Ping Li, Biaokai Zhu, Chong Dong, Chao Gong, Zhao Lv (Anhui  University) |
| 12:05-13:10 | Lunch |
|  | |
| **Keynote 2**  **(主题演讲 2)** | |
| Time | Title /Authors |
| 13:20-14:00 | **Prof. Guoyin Wang** (Chongqing University of Posts and Telecommunications)  Host: Haisheng Tan |
| **Session 2: Security**  (论坛 2：安全) | |
| 14:00-14:15 | Network Vulnerability Assessment based on Knowledge Graph  Jinyan Cheng, Xiaobin Tan, Hao Wang, Jian Wang, Xiaofeng Jiang, Zhaoyan  Jin (University of Science and Technology of China) |
| 14:15-14:30 | Reinforcement Learning based Attack Timing Optimization in Inter-domain  Networks  Yibing Weng, Yusheng Guo, Yu Gu (Hefei University of Technology) |
| 14:30-14:45 | A Trust Evaluation Based Attribute-Based Access Control Model for Smart Home  Yufan Tao, FanPing Zeng(University Of Science And Technology Of China) |
| 14:45-15:00 | Pi-Sniffer: Privacy Sniffing through the Wall with WiFi CSI  Shun Zhu, Jiahui Hou, Xiang-Yang Li(University of Science and Technology of  China) |
| 15:00-15:15 | Enabling Fuzzy Matching in Privacy-preserving Bilateral Task Recommendation  Chuan Zhang, Xingqi Luo, Weiting Zhang, Mingyang Zhao, Jinwen Liang,  Tong Wu, Liehuang Zhu(Beijing Institute of Technology) |
| 15:15-15:30 | SolScope: Effectively Hunting Potential Permission Backdoor Threats in Smart  Renjie Ji, Wansen Wang, Yan Xiong, Wenchao Huang (University of Science  and Technology of China) |
| 15:30-15:45 | MVVDroid: Android Malware Detection based on Multi-View Visualization  Jiaqi Guo, Zhaoyi Meng, Qian Zhang, Yan Xiong, Wenchao Huang(University  of Science and Technology of China) |
| 15:45-16:00 | EOSVERIF: An Automated Analyzer for EOSIO Smart Contracts  Caichang Tu, Wansen Wang, Yan Xiong, Wenchao Huang, Kaiwen Shi  (University of Science and Technology of China) |
| 16:00-16:15 | DBFed: Debiasing Federated Learning Framework based on Domain-  Independent  Jiale Li, Zhixin Li, Yibo Wang, Yao Li, Lei Wang(Dalian University of  Technology) |
| 16:15-16:30 | An Efficient Partial Video Copy Detection for a Large-scale Video Database  Zhan Luo, Lan Zhang, Jiewei Lai, Xinming Wang, Chen Tang(University of  Science and Technology of China) |
| 16:30-16:45 | Personalized Multi-task Federated Learning on Non-IID Medical Health Care  Data  Yanhao Feng, Xinyu Chang, Jianxin Zhao(Beijing Institute of Technology) |
| **Session 3: Applications**  (论坛 3：应用) | |
| 16:45-17:00 | Change Point Detection and Trend Analysis for Financial Time Series  Hengzhu Liu, Ping Xiong, Dawei Jin, Lingzhi Yi (Zhongnan University of  Economics and Law) |
| 17:00-17:15 | Road Traffic Prediction based on Multi-Feature BP Neural Networks  Fan Liang, Linqiang Ge, Jingyi Zheng, Chao Xu, Ge Gao (Sam Houston State  University) |
| 17:15-17:30 | D2V-DDQN: Influence Maximization of Positive Opinions Based on Deep  Reinforcement Learning  Yuqi Chen, Xianyong Li, Weikai Zhou, Yajun Du, Xiaoliang Chen, Yongquan  Fan (Xihua University) |
| 17:30-17:45 | A coarse-to-fine strategy based on a supervised learning method for non-  intrusive load identification  Kai Deng, Zihang Huo, Shiqi Yi, Peng Wang, Shuai Wang, Zhengmin  Kong(China Southern Powergrid Technology Co.,Ltd.) |
| 17:45-18:00 | UAV-Assisted Maritime Data Collection via Optical Communications using  Deep Reinforcement Learning  Saisai Ma, Mengzhen Li, Tinglong Deng, Jinglong Wang, Rukhsana Ruby,  Hanjiang Luo (Shandong University of Science and Technology) |
| 18:00-18:15 | A Local Regression-Based SLA-Aware Energy-Efficient Virtual Machine  Consolidation Algorithm in Data Centers  Xiaodong Wu, Ronghai Wang, Guoxin Lin(Quanzhou Normal University) |
| 18:15-20:00 | Banquet  Best Paper and Best Student Paper Announcement  最佳论文颁奖典礼 |

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| Day 2: Sunday, Aug 6  Venue:  Offline: BFA Hotel, Boao, Qionghai, Hainan China  会场：  线下：海南省琼海市博鳌亚洲论坛大酒店 | |
| **Session 4: Computing**  **(论坛 4：计算)** | |
| Time | Title/Authors |
| 8:00-8:15 | SAC: Dynamic Caching upon Sketch for In-Memory Big Data Analytics  Mingtao Ji, Mingxian Zhou, Haodong Zou, Ming Tang, Zhuzhong Qian,  Xiaoliang Wang (Nanjing University) |
| 8:15-8:30 | Efficient Online Edge Learning for UAV Object Detection via Adaptive Batch  Size  Feiyu Wu, YuBen Qu, Weijun Wang, Chao Dong, Yuqian Jing, Lei Zhang, Qihui Wu (Nanjing University of Aeronautics and Astronautics) |
| 8:30-8:45 | Energy-Efficient Collaborative DNN Inference in UAV Swarm  Weiqing Ren, Yuben Qu, Zhen Qin, Chao Dong, Hao Sun, Lei Zhang, Qihui  Wu (Nanjing University of Aeronautics and Astronautics) |
| 8:45-9:00 | HeteroPush: Communication-Efficient Video Analytics by Scheduling  Heterogeneous  Yi-Nan Zhang, Lan Zhang, Mu Yuan, Qi Song (University of Science and  Technology of China) |
| 9:00-9:15 | Efficient Data Loading for Deep Neural Network Training  Chengjian Liu, Pengcheng Shi, Yihong Li, Lixin Liang, Lin Lin (Shenzhen  Technology University) |
| 9:15-9:30 | Sequence to Sequence Load Recognition Model Based On Sparse Self-  attention  Zhihua Dong, Xing Guo (Anhui University) |
| 9:30-9:45 | Towards Efficient Edge Learning for Large Models in Heterogeneous  Resource-limited Environments  Defang Liu, Zhibo Wang, Xiaoyi Pang, Yunan Sun, Jiahui Hu, Peng Sun, Yuke  Hu (Wuhan University) |
| 9:45-10:00 | Edge Computing Sleep Mode Task Scheduling Based on Deep Reinforcement  Learning  Shengkun Tao, Fanping Zeng, Yufan Tao, Pengcheng Xia, Tong Liu (University  Of Science And Technology Of China) |
| 10:00-10:10 | Break |
| **Session 5: Mining**  **(论坛 5：数据挖掘)** | |
| Time | Title/Authors |
| 10:10-10:25 | Information Fusion Channel Pruning for Accelerating Neural Networks  Zhangbin Zhu, Yi Zhai, Yanyong Zhang (University of Science and Technology  of China) |
| 10:25-10:40 | WEAKLY SUPERVISED TARGET-SPEAKER VOICE ACTIVITY DETECTION  Zixin Zhao, Lan Zhang(University of Science and Technology of China) |
| 10:40-10:55 | JP-DouZero: an enhanced DouDiZhu AI based on reinforcement learning  with peasant collaboration and intrinsic rewards  Mu Yuan, Nikolaos M. Freris (University of Science and Technology of China) |
| 10:55-11:10 | Contrastive Learning Based Human Activity Recognition Using Body Sensors  Chuanshi Xie, Yu Zhou, Dandan Yu, Shilong Sun, Xiao Zhang (Shenzhen  University) |
| 11:10-11:25 | LMIE-BERT: A Learnable Method for Inter-Layer Ensembles to Accelerate  Inference of BERT-Style Pre-trained Models  Weikai Qi, Xing Guo, Haohua Du (Anhui University) |
| 11:25-11:40 | Multi-Skill Policy Transfer by Option-based Deep Reinforcement Learning for  Autonomous Driving  Bo Wei, Jianxin Zhao, Yinuo Zhao, Feng Tian (Beijing Institute of Technology) |
| 11:40-11:55 | Using Sensors to Complement Cameras to Save Arithmetic Power for  Autonomous Driving Recognition  Rui Chen, Xing Guo, Haohua Du (Anhui University) |
| 11:55-12:10 | A Coalitional Autonomous Guiding Model Considering Traffic and Non-traffic  Xiaochuan Liu, Haohua Du, Fenzhu Ji (Beihang University) |
| 12:10-12:25 | Comp-RPKI: A Decentralized Protocol for Full Route Origin Validation  Yanwei Wu, Yun Wang, Jack DeJulius, Riad Abboud, Melvin Woitel, Bohdan  Osadchyy, Kyree Richardson(University of Wisconsin - Platteville) |
| 12:25-13:25 | Lunch |