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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 We welcome original, unpublished research papers that emphasize theoretical foundations, modeling, algorithmic methodologies, and data-driven applications in science and engineering.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

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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 5Venue: 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-termLijing Hu, Xianghui Hu, Zhou Zhang, Zhixin Liu, Jiaying Li, Jian Guo (Instituteof Systems Engineering Academy of Military Sciences) |
| 10:35-10:50 | Usage of Application-driven Ternary Divide-and-conquer Architecture ofHeterogeneous 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 PlatformHaitao Zhang, Yu Wu (Dongguan University of Technology) |
| 11:05-11:20 | The influence of the multicasting communication on the system capacity ofedge caching networksPeiyan Yuan, Ming Li, Shuhong Li, Chunhong Liu, Xiaoyan Zhao (HenanNormal University) |
| 11:20-11:35 | IoT Device Identification Base on Inter-flow Correlation Analysis Using GraphChuang Peng, Xiaobin Tan, Peng Xie, Mengxiang Li, Hao Wang, ShuangwuChen (University of Science and Technology of China) |
| 11:35-11:50 | Joint optimization of energy distribution, path selection and time allocationfor smart reflector assisted mmWave communication systemEnhui Yang, Yu Xing, Xing Guo (Anhui Jianzhu University) |
| 11:50-12:05 | TagVibra: push the limit of RFID-based vibration sensingJian Li, Ping Li, Biaokai Zhu, Chong Dong, Chao Gong, Zhao Lv (AnhuiUniversity) |
| 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 GraphJinyan Cheng, Xiaobin Tan, Hao Wang, Jian Wang, Xiaofeng Jiang, ZhaoyanJin (University of Science and Technology of China) |
| 14:15-14:30 | Reinforcement Learning based Attack Timing Optimization in Inter-domainNetworksYibing Weng, Yusheng Guo, Yu Gu (Hefei University of Technology) |
| 14:30-14:45 | A Trust Evaluation Based Attribute-Based Access Control Model for Smart HomeYufan Tao, FanPing Zeng(University Of Science And Technology Of China) |
| 14:45-15:00 | Pi-Sniffer: Privacy Sniffing through the Wall with WiFi CSIShun Zhu, Jiahui Hou, Xiang-Yang Li(University of Science and Technology ofChina) |
| 15:00-15:15 | Enabling Fuzzy Matching in Privacy-preserving Bilateral Task RecommendationChuan 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 SmartRenjie Ji, Wansen Wang, Yan Xiong, Wenchao Huang (University of Scienceand Technology of China) |
| 15:30-15:45 | MVVDroid: Android Malware Detection based on Multi-View VisualizationJiaqi Guo, Zhaoyi Meng, Qian Zhang, Yan Xiong, Wenchao Huang(Universityof Science and Technology of China) |
| 15:45-16:00 | EOSVERIF: An Automated Analyzer for EOSIO Smart ContractsCaichang 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-IndependentJiale Li, Zhixin Li, Yibo Wang, Yao Li, Lei Wang(Dalian University ofTechnology) |
| 16:15-16:30 | An Efficient Partial Video Copy Detection for a Large-scale Video DatabaseZhan Luo, Lan Zhang, Jiewei Lai, Xinming Wang, Chen Tang(University ofScience and Technology of China) |
| 16:30-16:45 | Personalized Multi-task Federated Learning on Non-IID Medical Health CareDataYanhao 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 SeriesHengzhu Liu, Ping Xiong, Dawei Jin, Lingzhi Yi (Zhongnan University ofEconomics and Law) |
| 17:00-17:15 | Road Traffic Prediction based on Multi-Feature BP Neural NetworksFan Liang, Linqiang Ge, Jingyi Zheng, Chao Xu, Ge Gao (Sam Houston StateUniversity)  |
| 17:15-17:30 | D2V-DDQN: Influence Maximization of Positive Opinions Based on DeepReinforcement LearningYuqi Chen, Xianyong Li, Weikai Zhou, Yajun Du, Xiaoliang Chen, YongquanFan (Xihua University) |
| 17:30-17:45 | A coarse-to-fine strategy based on a supervised learning method for non-intrusive load identificationKai Deng, Zihang Huo, Shiqi Yi, Peng Wang, Shuai Wang, ZhengminKong(China Southern Powergrid Technology Co.,Ltd.) |
| 17:45-18:00 | UAV-Assisted Maritime Data Collection via Optical Communications usingDeep Reinforcement LearningSaisai 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 MachineConsolidation Algorithm in Data CentersXiaodong Wu, Ronghai Wang, Guoxin Lin(Quanzhou Normal University) |
| 18:15-20:00 | BanquetBest Paper and Best Student Paper Announcement最佳论文颁奖典礼 |

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| Day 2: Sunday, Aug 6Venue: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 AnalyticsMingtao 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 BatchSizeFeiyu 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 SwarmWeiqing Ren, Yuben Qu, Zhen Qin, Chao Dong, Hao Sun, Lei Zhang, QihuiWu (Nanjing University of Aeronautics and Astronautics) |
| 8:45-9:00 | HeteroPush: Communication-Efficient Video Analytics by SchedulingHeterogeneousYi-Nan Zhang, Lan Zhang, Mu Yuan, Qi Song (University of Science andTechnology of China) |
| 9:00-9:15 | Efficient Data Loading for Deep Neural Network TrainingChengjian Liu, Pengcheng Shi, Yihong Li, Lixin Liang, Lin Lin (ShenzhenTechnology University) |
| 9:15-9:30 | Sequence to Sequence Load Recognition Model Based On Sparse Self-attentionZhihua Dong, Xing Guo (Anhui University) |
| 9:30-9:45 | Towards Efficient Edge Learning for Large Models in HeterogeneousResource-limited EnvironmentsDefang Liu, Zhibo Wang, Xiaoyi Pang, Yunan Sun, Jiahui Hu, Peng Sun, YukeHu (Wuhan University) |
| 9:45-10:00 | Edge Computing Sleep Mode Task Scheduling Based on Deep ReinforcementLearningShengkun Tao, Fanping Zeng, Yufan Tao, Pengcheng Xia, Tong Liu (UniversityOf 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 NetworksZhangbin Zhu, Yi Zhai, Yanyong Zhang (University of Science and Technologyof China) |
| 10:25-10:40 | WEAKLY SUPERVISED TARGET-SPEAKER VOICE ACTIVITY DETECTIONZixin Zhao, Lan Zhang(University of Science and Technology of China) |
| 10:40-10:55 | JP-DouZero: an enhanced DouDiZhu AI based on reinforcement learningwith peasant collaboration and intrinsic rewardsMu Yuan, Nikolaos M. Freris (University of Science and Technology of China) |
| 10:55-11:10 | Contrastive Learning Based Human Activity Recognition Using Body SensorsChuanshi Xie, Yu Zhou, Dandan Yu, Shilong Sun, Xiao Zhang (ShenzhenUniversity) |
| 11:10-11:25 | LMIE-BERT: A Learnable Method for Inter-Layer Ensembles to AccelerateInference of BERT-Style Pre-trained ModelsWeikai Qi, Xing Guo, Haohua Du (Anhui University) |
| 11:25-11:40 | Multi-Skill Policy Transfer by Option-based Deep Reinforcement Learning forAutonomous DrivingBo Wei, Jianxin Zhao, Yinuo Zhao, Feng Tian (Beijing Institute of Technology) |
| 11:40-11:55 | Using Sensors to Complement Cameras to Save Arithmetic Power forAutonomous Driving RecognitionRui Chen, Xing Guo, Haohua Du (Anhui University) |
| 11:55-12:10 | A Coalitional Autonomous Guiding Model Considering Traffic and Non-trafficXiaochuan Liu, Haohua Du, Fenzhu Ji (Beihang University) |
| 12:10-12:25 | Comp-RPKI: A Decentralized Protocol for Full Route Origin ValidationYanwei Wu, Yun Wang, Jack DeJulius, Riad Abboud, Melvin Woitel, BohdanOsadchyy, Kyree Richardson(University of Wisconsin - Platteville) |
| 12:25-13:25 | Lunch |