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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 10th International Conference on Big Data Computing and Communications (BigCom2024), which is to be held on Aug. 9-11, 2024 in Dalian, 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 We welcome original, unpublished research papers that emphasize theoretical foundations, modeling, algorithmic methodologies, and data-driven applications in science and engineering.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:

Track1：Architecture and Systems for Big Data

o Architecture for Big Data Processing, Storage, and Visualization

o Storage, and Parallel Processing Systems for Big Data

o Resource Management, Scheduling, and Caching Systems for Big Data

o Architecture and Systems for Big Data Applications

Track2：Algorithms for Big Data

o Mathematical Modeling for Efficient Big Data Management

o Combinatorial Optimization Algorithms in Big Data Processing

o Application of Deep Learning Algorithms in Big Data

o Parallel and Distributed Algorithms for High-Performance Big Data System

o Streaming Algorithms for Big Data Security and Privacy Protection

Track3：AI for Big Data

o Al models and algorithms such as large language models, neural networks

o AI for Multi-modality data processing techniques such as text, image, time series, graph, audio

o AI for big data applications such as healthcare, e-commerce, finance, education, etc.

Track4：Security and Privacy for Big Data

o Privacy & Security in Artificial Intelligence

o Privacy & Security in Mobile and Wireless Communications

o Privacy and Security in Big Data

o Privacy and Security in Large Model

Track5：Communication and Networking for Big Data

o Intelligent Networking for Big Data

o Data-driven Industrial Internet of Things

o Network Architecture for Big Data Systems

o Network Security for Big Data

**Instructions for Attending Conference**

（一）会议时间：2024年8月9日-8月11日（9日报到、10-11日会议、离会）

（二）会议地点：辽宁省大连市凯宾斯基饭店（地址：辽宁省大连市中山区解放路92号）

（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 9 日 20:00前在大连市凯宾斯基饭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 9 日 20:00前在大连市凯宾斯基饭店店一楼大堂签到并领取参会证和会议资料。

2. 8月 10日上午的开幕式在大连市凯宾斯基饭店大宴会厅，请您于当日上午 8:10-8:30 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9日晚餐：18：00-20：30，地点：红桔日本料理 （定食）

8月10日早餐：06：30-10：00，地点：柏林咖啡厅（二楼）/渤海明珠早餐

8月10日午餐：11：30-13：30，地点： 柏林咖啡厅（二楼）

8月10日晚宴18：00-20：00，地点： 大宴会BC（三楼）

8月11日早餐：06：30-10：00，地点：柏林咖啡厅（二楼）/渤海明珠早餐

8月11日午餐：11：30-13：30，地点：红桔日本料理 （定食）

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. 大连 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

Zhongxuan Luo, Dalian University of Technology, China

Omer F. Rana, Cardiff University, United Kingdom

### TPC Co-Chairs

Ramin Yahyapour, University of Göttingen, Germany

Lei Wang, Dalian University of Technology, China

### TPC Vice Chair

Zichuan Xu, Dalian University of Technology, China

### Local Arrangement Chairs

Hao Wang, Dalian University of Technology, China

Haozhe Ren, Dalian University of Technology, China

### Publicity Chairs

Jiankang Ren, Dalian University of Technology, China

Ruiting Zhou, Southeast University, China

Su Yao, Tsinghua University, China

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

### Publication Chairs

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

Haohua Du, Beihang University, China

### Industry Liaison Chairs

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

Qiang Li, USTC-Deqing Alpha Innovation Institute, China

Qiufen Xia, Dalian University of Technology, China

Jiao Luo, Dalian University of Technology, China

Pan Zhou, Huazhong University of Science and Technology, 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

Guangyuan Xu, Dalian University of Technology, China

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

### Program Committee

Track 1. Architecture and Systems for Big Data

Track Chairs

Zhenhua Han, Microsoft Research Asia, China

Varun Ojha, Newcastle University, United Kingdom

PC Members

Hao Wang, Louisiana State University, United States

Xiaoxi Zhang, Sun Yat-sen University, China

Ningxin Zheng, ByteDance, China

Zehua Guo, Beijing Institute of Technology, China

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

Yifei Zou, Shandong University, China

Yuedong Xu, Fudan University, China

Weihao Cui, Shanghai Jiao Tong University, China

Chen Chen, Shanghai Jiao Tong University, China

Feng Liang, Shenzhen MSU-BIT University, China

Track 2. Algorithms for Big Data

Track Chairs

Stojan Trajanovski, Microsoft, United States

Song Yang, Beijing Institute of Technology, China

PC Members

Gleb Polevoy, Paderborn University, Germany

Tingting Yuan, University of Goettingen, Germany

Enhuan Dong, Tsinghua University, China

Liangyi Gong, Computer Network Information Center, Chinese Academy of Sciences，China

Dazi Li, Beijing University of Chemical Technology, China

Huijie Chen, Beijing University of Technology, China

Geng Sun, Jilin University, China

Yang Chen, Fudan University, China

Zhen Liu, Beijing Jiaotong University, China

Hongju Cheng, Fuzhou University, China

Rongfei Zeng, Northeastern University, China

Renyu Yang, Beihang University, China

Youqi Li, Beijing Institute of Technology, China

Xinliang Wei, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

Track 3. AI for Big Data

Track Chairs

Huizhi Liang, Newcastle University, United Kingdom

Li Zhang, Microsoft Research Asia, China

PC Members

Bing Zhai, Northumbria University, United Kingdom

Thanet Markchom, University of Reading, United Kingdom

Nicolay Rusnachenko, Bournemouth University, United Kingdom

Yi Yin, University of Oxford, United Kingdom

Yitong Li, Huawei, China

Yuan Li, Seek, Australia

Varun Ojha, Newcastle University, United Kingdom

Jinrui Zhang, Tsinghua University, China

Xiaotian Guo, University of Amsterdam, Netherlands

Haoran Du, Newcastle University, United Kingdom

Thomas Szydlo, Newcastle University, United Kingdom

Chandresh Pravin, Skanska, United Kingdom

Lingping Kong, Tecnical University of Ostrava, Czechia

Remy Vandale, University of Exeter, United Kingdom

Almar Cantu, Newcastle University, United Kingdom

Track 4. Security and Privacy for Big Data

Track Chairs

Lei Zhang, Tianjin University, China

Kun Qian, University of Virginia, United States

PC Members

Zhichao Cao, Michigan State University, United States

Xuyu Wang, Florida International University, United States

Longfei Shangguan, University of Pittsburgh, United States

Tao Chen, University of Pittsburgh, United States

Yaxiong Xie, University at Buffalo, United States

Cong Wang, Tianjin University of Science and Technology, China

Lijun Gao, Shenyang Aerospace University, China

Zhaohua Zheng, Hainan University, China

Track 5. Communication and Networking for Big Data

Track Chairs

Qiao Xiang, Xiamen University, China

Alan Zaoxing Liu, University of Maryland, United States

PC Members

Xi Chen, Huawei Canada, Canada

Haizhou Du, Shanghai University of Electric Power, China

Xing Fang, Xiamen University, China

Fanxin Kong, University of Notre Dame, United States

Franck Le, IBM, United States

Lingjun Pu, Nankai University, China

Lu Tang, Xiamen University, China

Yuwei Xu, Southeast University, China

Menghao Zhang, Beihang University, China

Yuchao Zhang, Beijing University of Posts and Telecommunications, China

Track 6. Rising Star Forum

Track Chairs

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

Chenren Xu, Peking University, China

### BIGCOM 2024 Conference Program

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| --- | --- |
| Day 1: Saturday, Aug 10  Venue:  Offline: Kempinski Hotel Dalian, Liaoning China  会场：  线下：辽宁省大连市凯宾斯基饭店 | |
| **Opening Remarks**  **(开幕式)**  Host: Zichuan Xu | |
| Time | Speakers |
| 8:30:-8:35 | Opening Remarks by Chairs（**Zhongxuan Luo**）  会议主席发言 |
| 8:35-8:40 | Opening Remarks by TPC Chairs（**Zichuan Xu**）  会议技术委员会主席发言 |
| 8:40-8:45 | Take Photo  大会拍照 |
| **Keynote**  **(主题演讲)**  Host: Lei Wang and Haisheng Tan | |
| Time | Title /Author |
| 8:45-9:30 | **Prof. Jie Wu (**Temple University，USA) |
| 9:30-10:15 | **Prof. Yi Pan (**Shenzhen Institue of Advanced Technology, Chinese Academy of Sciences, China) |
| 10:15-11:00 | **Prof. Kun Yang (**Nanjing University (Suzhou Campus), China) |
| 11:00-11:10 | Break |
| **Session 1: Architecture and Systems for Big Data**  (论坛1：大数据架构与系统)  Host:Lizhen Zhou | |
| Time | Title/Authors |
| 11:10-11:25 | Utilizing Sensing Coil for Device Model Recognition in Qi-compatible Wireless Charging  Shenyao Jiang; Hao Zhou; Xinyu Wang; Yixiao Chen  (University of Science and Technology of China) |
| 11:25-11:40 | Dynamic Kubernetes Scheduling:Load and Resource Optimization in Collaborative Edge Computing  Tong Liu, Fanping Zeng; Pengcheng Xia  (University of Science and Technology of China) |
| 11:40-11:55 | Precise and Transferable Latency Prediction for Transformer  Yuanchi Liu; Jiahang Xu; Chengquan Feng; Haisheng Tan  (University of Science and Technology of China) |
| 11:55-12:10 | Towards Efficient Inference on Mobile Device via Pruning  Zhiyuan Wang; Haisheng Tan  (University of Science and Technology of China) |
| 12:10-13:00 | Lunch |
| **Session 2: Algorithms for Big Data**  (论坛 2：大数据算法)  Host: Shanbo Zhao | |
| 13:00-13:15 | FISH: Alleviating Cold Start for Serverless Computing with Memory Constraints  Xinyue Zhang; Guopeng Li; Haisheng Tan  (University of Science and Technology of China) |
| 13:15-13:30 | MedMM: A Multimodal Fusion Framework for 3D Medical Image Classification with Multigranular Text Guidance  Shanbo Zhao; Meihui Zhang; Xiaoqin Zhu; Junjie Li; Yunyun Duan; Zhizheng Zhuo; Yaou Liu; Chuyang Ye  (Beijing Institute of Technology) |
| 13:30-13:45 | Research on Credit Risk Control Model Based on Deep Learning  Baichengkang Lin; Zhe Wu; Lianfen Huang; Zhibin Gao; Yifeng Zhao  (Xiamen University) |
| 13:45-14:00 | A Spatial-Temporal Neural Network Model Based on Meta Learning for Bus Arrival Time Prediction  Hongfei Sun; Feifan Li; Lei Liu  (Zhida Technology) |
| 14:00-14:15 | Intelligent Identification and Control Method for On-Orbit Risks of Assembled Spacecraft  Haocheng Zhou; Jingyi Chong; Wei He  (Beijing Institute of Spacecraft System Engineering, China Academy of Space Technology) |
| 14:15-14:30 | Application of Digital Twin Technology in the Safety Design of Manned Spacecraft System  Wei Li; Haocheng Zhou; Jingyi Chong  (Beijing Institute of Spacecraft System Engineering, China Academy of Space Technology) |
| 14:30-14:45 | Intelligent Identification and Analysis Method for Potential Faults of Spacecraft in Space Environment  Jingyi Chong; Haocheng Zhou; Wei He  (Institute of Telecommunication and Navigation Satellite, China Academy of Space Technology) |
| **Session 3: AI for Big Data**  (论坛 3：大数据人工智能)  Host:Tong Sheng | |
| 14:45-15:00 | 3D Gaze Estimation via Binocular Disparity and Feature Refinement  Chengxin Wang; Qiuxia Chen; Ying Tian; Jinfeng Yang  (University of Science and Technology Liaoning Anshan) |
| 15:00-15:15 | Pre-Segmentation: A data augmentation-based strategy for thinning ViT models  Houbin Guo; Xing Guo; Haohua Du;  (Anhui University) |
| 15:15-15:30 | FedDCS: Dynamical Client Selection for Federated Learning in Mobile Scenarios with Label Distribution Shift  Junjie Pang; Haohua Du; Zhiyi Liu; Xiaoya Xu; YuanHao Feng  (Beihang University) |
| 15:30-15:45 | Convolutional Neural Networks Pruning Based on Energy Adaptation  Fan Guo; Xing Guo; Haohua Du  (Anhui University) |
| 15:45-16:00 | AdaViT: Task Adaptive ViT Compression Based on Module Replacement  Weijian Zhang; Xing Guo; Haohua Du  (Anhui University) |
| **Rising Star Forum**  Host: Fei Shang | |
| 16:00-16:30 | Yuhan Zhou (Peking University)  Title: AUGUR: Practical Mobile Multipath Transport Service for Low Tail Latency in Real-Time Streaming |
| 16:30-17:00 | Chengquan Feng (University of Science and Technology of China)  Title: LitePred: Transferable and Scalable Latency Prediction for Hardware-Aware Neural Architecture Search |
| 17:00-17:30 | Guorong He (NorthWest University)  Title: A Portable, Touchless, and Battery-Free Electrochemical Bio-tag for Multi-pesticide Detection |
| 17:30-18:00 | Kaiwen Guo (University of Science and Technology of China)  Title: All- scene Collaborative Sensing and Interaction - Some Practical Applications in Real-world |
| 18:00-20:00 | Banquet |

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| Day 2: Sunday, Aug 11  Venue:  Offline: Kempinski Hotel Dalian, Liaoning China  会场：  线下：辽宁省大连市凯宾斯基饭店 | |
| Time | Title/Authors |
| **Session 3: AI for Big Data**  (论坛 3：大数据人工智能)  Host:Tong Sheng | |
| 8:30-8:45 | Fall Detection Related Human Activity Recognition by Millimeter-wave Radar  Wenbin Liu; Yingjian Liu; Haoyu Yin; Qingmin Yuan; Ruoyu Wang; Zhongwen Guo  (Ocean University of China) |
| 8:45-9:00 | A Multi-layer Satellite Internet of Things Architecture Based on ICN/SDN  Qingmin Yuan; Yingjian Liu; Wenbin Liu; Ruoyu Wang; Jinhui Liu; Zhongwen Guo  (Ocean University of China) |
| 9:00-9:15 | MultiVFL: A Training-Efficient Framework for Multiple Vertical Federated Learning  Ju Huang; Lan Zhang; Cheng Ding; Dongbo Huang; Lan Xu  (University of Science and Technology of China) |
| 9:15-9:30 | Active Open-Set Domain Adaptation  Yixuan Wang; Lan Zhang  (University of Science and Technology of China) |
| 9: 30-9:45 | Large-Scale Multi-Camera Person Trajectory Tracking based on Low Sampling Rate of Camera  Yan Wang; Lan Zhang; Xianwen Wang; Ke Ding; Jin Yan;  (Anhui University) |
| 9:45-10:00 | Commonsense Selection and Performance Evaluation for Sarcasm Detection  Jianwei Zhang; Shoya Minakawa; Yuta Sasaki; Lin Li  (Iwate University) |
| 10:00-10:15 | GPT Attack for Adversarial Privacy Policies  Isaac Joy; Jun Wu; Jingrui He  (University of Illinois Urbana-Champaign) |
| 10:15-10:30 | A Deep Bus Arrival Time Estimation Model Based on Bus Network  Guitao Qian; Feifan Li; Lei Liu  (Zhida Technology) |
| **Session 4: Security and Privacy for Big Data**  **(论坛 4：大数据的安全和隐私)**  Host:Haozhe Ren | |
| 10:30-10:45 | Analysis of Local Operations Influence on the Entanglement of Two-Qubit States  Nina Sukhodoeva; Zhaofeng Su  (University of Science and Technology of China) |
| 10:45-11:00 | Evaluating Differential Privacy in Federated Learning based on Membership Inference Attacks  Peng He; Xinyu Wang; Weijiao Zhang; Zhongkai Wang; Song Wang; Chuangxin Ou; Guozheng Li  (Beijing Institute of Technology) |
| 11:00-11:15 | SymbolBack: Symbol-level WiFi Backscatter Communication  Susheng Zhang; Yubo Yan; Shanyue Wang  (University of Science and Technology of China) |
| 11:15-11:30 | A Conditional Privacy-Preserving Certificateless Signature Scheme Based on Lattice  Pan Chen; Liquan Chen; Bo Yang; Qingyao Gu;Lin Shi  (Southeast University) |
| 11:30-11:45 | Enhancing Transferability of Adversarial Examples Through Randomization in Generative Adversarial Training  Yikun Zhao  (University of Science and Technology of China) |
| **Session 5: Communication and Networking for Big Data**  **(论坛 5：大数据通信与网络)**  Host:Wenhao Ren | |
| 11:45-12:00 | Towards Efficient Neural Video Delivery via Scalable And Dynamic Networks  Shan Jiang; Haisheng Tan  (University of Science and Technology of China) |
| 12:00-13:00 | Lunch |
| 13:00-13:15 | Adaptive Neurosurgeon: DNN Computing Latency Minimization for Mobile Edge Intelligence  Gang Wu; Qianru Wang; Biao Hu  (China Agricultural University) |
| 13:15-13:30 | MELoc:Indoor localization system integrating MUSIC and EM algorithms  Siming Chen; Yinnan Zhou; Hao Zhou  (University of Science and Technology of China) |
| 13:30-13:45 | Encrypted Mining Traffic Detection Mechanism Based on TLS Handshake Message and Machine Learning  Jianlei Zhu; Guilu Fu; Wenchao Huang; Boxuan Shi; Yan Xiong  (University of Science and Technology of China) |
| 13:45-14:00 | Participant selection strategy under privacy protection in Sparse Mobile Crowdsensing  Wei Zhou; Weijin Jiang; Yirong Jiang; Yusha Zhang  (Hunan University Of Technology and Business) |
| 14:00-14:15 | RACCOON: Online Content Recommendation and Edge-assisted Caching for In-Vehicle Infotainment  Yufei You; Xiaoxi Zhang; TianXiang Zhu; Bo Rao; Yihong Li; Jingpu Duan; Lei Xue; Ennan Zhai; Xu Chen  (Sun Yat-sen University) |
| 14:15-14:30 | RaCKDet: An Ensemble Learning Method for Network Intrusion Detection  Zijian Wang; Jiakun Sun  (Inner Mongolia Normal University) |
| 14:30-14:45 | OPR-RL: An Optimized Policy based Routing Method based on Reinforcement Learning  Zixian Yang; Xinxia Zheng; Ming Chen  (NanJing University of Aeronautics and Astronautics) |
| 14:45-15:00 | Multi-Server Cooperative Video Caching Strategy Based on Deep Reinforcement Learning in Cloud-Edge Computing  Guanyu Li; Yingchi Mao; XinXin Peng; Haotian Zheng; Zibo Wanga  (Hohai University) |
| 15:00-15:15 | Fine-Tunable Semantic Communication for Image Transmission  Peiyuan Si; Renyang Liu; Liangxin Qian; Jun Zhao; Kwok-Yan Lam  (Nanyang Technological University) |