

MSN 2020
Program at a Glance
 Online
 (Time zone: GMT/UTC +9)

Time	Thursday, 17 December 2020			Time	Friday, 18 December 2020			Time	Saturday, 19 December 2020		
				0900 - 0915	Opening and Best Paper			0900 - 1000	Keynote II How to Face the 5G / Beyond 5G / 6G Era by Prof. Hiroyuki Morikawa, The University of Tokyo, Japan		
				0915 - 1015	Panel AI/ML for Mobility, Sensing, and Networking						
1000 - 1200	ECAISS + 5G/B5G	AI2OT + UEIoT	AINSC	1030 - 1210	Session 1 Wireless and Ubiquitous Sensing	Session 2 Systems & Tools (I)	Session 3 Internet of Things	1010 - 1150	Session 10 Security, Privacy & Trust (II)	Session 11 Algorithms, Theory, and Protocols (II)	Session 12 Systems & Tools (II)
1200 - 1300	Virtual Break			12:10 - 13:00	Virtual Break			1150 - 1300	Virtual Break		
1300 - 1520	ECAISS + 5G/B5G	AI2OT + UEIoT	MSRLA	1300 - 1500	Session 4 Mobile & Wireless Networks (I)	Session 5 Edge and Fog Computing (I)	Session 6 Big Data and AI in Networking	1300 - 1340	Poster & Demo Session		
				1510 - 1650	Session 7 Security, Privacy & Trust (I)	Session 8 Algorithms, Theory, and Protocols (I)	Session 9 Experiments & Applications	1350 - 1610	Session 13 Mobile & Wireless Networks (II)	Session 14 Edge and Fog Computing (II)	Session 15 Security, Privacy & Trust (III)
								1610 - 1620	Closing Speech		
				1700 - 1800	Keynote I Scaling the Edge by Prof. Jon Crowcroft, University of Cambridge, UK						

Technical Program (*Time zone: GMT/UTC +9*)

Thursday, 17 December 2020

Thursday, 17 December 2020 | 10:00 – 11:40 & 13:00 – 14:40 (Tokyo Time)

Thursday, 17 December 2020 | 09:00 – 10:40 & 12:00 – 13:40 (Beijing Time)

Thursday, 17 December 2020 | 01:00 – 02:40 & 04:00 – 05:40 (London Time)

Wednesday, 16 December 2020 | 20:00 – 21:40 & 23:00 – 00:40 (New York Time)

2nd International Workshop on Edge Computing and Artificial Intelligence based Sensor-Cloud System (ECAISS) & Workshop on 5G/B5G Security

Session 1 (10:00 – 11:40)

Session Chair: Haipeng Dai, Nanjing University, China

Verifiable Blockchain-Based Searchable Encryption with Forward and Backward Privacy

Ruizhong Du, Yi Wang (Hebei University, China)

A Game-Theoretical Approach for Task Offloading in Edge Computing

Juan Luo, Qian Qian, Luxiu Yin, Ying Qiao (Hunan University, China)

A Novel Service Composition Approach for Offloading in Mobile Edge Computing

Dandan Liu (Wuhan University, China), Nitesh Krishna (University of Ottawa, Canada), Amiya Nayak (University of Ottawa, Canada)

Dependency-Aware Dynamic Task Scheduling in Mobile-Edge Computing

Mingzhi Wang, Tao Ma, Tao Wu, Chao Chang, Fang Yang, Huaixi Wang (NUDT, China)

Game Theory based Joint Task Offloading and Resource Allocation Algorithm for Mobile Edge Computing

Ning Li, Jianen Yan, Zhaoxin Zhang, Xin Yuan (Harbin Institute of Technology, China)

Session 2 (13:00 – 14:40)

Session Chair: Yang Liu, Beijing University of Posts and Telecommunications, China

A Low Cost Edge Computing and LoRaWAN Real Time Video Analytics for Road Traffic Monitoring

Salahadin Seid (Addis Ababa University, Ethiopia), Marco Zennaro (ICTP, Italy), Mulugeta Libse (Addis Ababa University, Ethiopia), Ermanno Pietrosevoli (ICTP, Italy), Pietro Manzoni (Universitat Politècnica de València, Spain)

An Optimal Wireless Transmission Strategy based on Coherent Beamforming and Successive Interference Cancellation for Edge Computing

Zhehao Li (HeFei University of Technology, China), Lei Shi (HeFei University of Technology, China), Yi Shi (Intelligent Automation Inc, United States), Yuqi Fan (HeFei University of Technology, China), Zhenchun Wei (HeFei University of Technology, China)

Virtual Machine Security Migration Strategy Based on the Edge Computing Environment

Ruizhong Du, Wangkai He, Junfeng Tian (Hebei University, China)

Load Balancing Mechanisms of Unmanned Surface Vehicle Cluster Based on Marine Vehicular Fog Computing

Kuntao Cui, Wenli Sun, Bin Lin, Wenqiang Sun (Dalian Maritime University, China)

Accurate IoT Device Identification from Merely Packet Length

Yizhen Sun (State Grid Information & Communication Company of Hunan Electric Power Corporation, China), Shupo Fu (Central South University, China), Shigeng Zhang (Central South University, China), Yuxi Wu (State Grid Information & Communication Company of Hunan Electric Power Corporation, China), Jingchuan Feng (State Grid Information & Communication Company of Hunan Electric Power Corporation, China)

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2nd International Workshop on Artificial Intelligence Applications in Internet of Things (AI²OT) and 1st International Workshop on Ubiquitous Electric Internet of Things (UEIoT)

Session 1 (10:00 – 11:40)

Session Chair: Shigeng Zhang, Central South University, China

ECDT: Exploiting Correlation Diversity for Knowledge Transfer in Partial Domain Adaptation

Shichang He (Hunan University, China); Xuan Liu (Hunan University and Tsinghua University, China); Xinning Chen, Ying Huang (Hunan University, China)

Study on Location and Sizing Programming of Regional Substation

Xiaolin Tan, Shiyao Hu, Chunguang He, Pengfei Sun (State Grid Hebei Electric Power Co.,Ltd., Institute of Economics and Technology, China); Jing Zhang (State Grid Jinzhou Power Supply Company, China); Ying Ma (Xiamen University of Technology, China)

A Method to Construct Vulnerability Knowledge Graph based on Heterogeneous Data

Yizhen Sun (State Grid Information & Communication Company of Hunan Electric Power Corporation, China); Dandan Lin, Hong Song (Central South University, China); Minjia Yan, Linjing Cao (State Grid Information & Communication Company of Hunan Electric Power Corporation, China)

WSAD: An Unsupervised Web Session Anomaly Detection Method

Yizhen Sun (State Grid Information & Communication Company of Hunan Electric Power Corporation, China); Yiman Xie, Weiping Wang, Shigeng Zhang (Central South University, China); Jun Gao, Yating Chen (State Grid Information & Communication Company of Hunan Electric Power Corporation, China)

Researches on Intelligent Traffic Signal Control Based on Deep Reinforcement Learning

Juan Luo, Xinyu Li, Yanliu Zheng (Hunan University, China)

Session 2 (13:00 – 14:40)

Session Chair: Ying Ma, Xiamen University of Technology, China

Research on load forecasting model on power sensor net

Kai Huang (State Grid Hebei Electric Power Co.,Ltd., Institute of Economics and Technology, China), Jing Zhang (State Grid Jinzhou Power Supply Company, China), Jiakun An, Jing Zhang, Jinglin Han (State Grid Hebei Electric Power Co.,Ltd., Institute of Economics and Technology, China); Yunjie Lei (Xiamen University of Technology, China)

Privacy-Preserving Techniques for Protecting Large-Scale Data of Cyber-Physical Systems

Marwa Keshk (University of New South Wales, Canberra and Data61-CSIRO, Australia); Nour Moustafa, Elena Sitnikova, Benjamin Turnbull (University of New South Wales, Canberra, Australia); Dinusha Vatsalan (Data61-CSIRO, Australia)

Improving Analysis of Automatic Distribution Changes for Power Grid

Meile Shi, Zhen Wang, Pengfei Yu (Xiamen Great Power Geoinformation Technology Co., Ltd, China); Qi Du (Xiamen University of Technology, China)

Coding based Distributed Data Shuffling for Low Communication Cost in Data Center Networks

Junpeng Liang, Lei Yang, Zhenyu Wang, Xuxun Liu (South China University of Technology, China); Weigang Wu (Sun Yat-sen University, China)

Research on visualization planning method of distribution network based on graphical model integration

He Huang (State Grid Jiangsu Electric Power Co., Ltd., China); Xian Zhou, Liang Guo, Hao Chang, Ning Ma (State Grid Taizhou Power Supply Company, China)

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Workshop on Advances in Intelligent Mobile Networks for Smart Cities (AINSC)

Session Chair: Chaofeng Zhang, Advanced Institute of Industrial Technology, Japan

A Traffic Engineering Technology Based on Segment Routing in Software Defined Network
Yuantao Teng, Zhengyou Xia (Nanjing University of Aeronautics and Astronautics, China)

An Ensemble Learning Approach for Extracting Concept Prerequisite Relations from Wikipedia
Yang Zhou, Kui Xiao, Yan Zhang (Hubei University, China)

Boosting Cooperative Game with Complete Information in Multi-UAV Mesh Router Networks
Wei Zhao, Taoyang Zhou, Xuanguo Wu, Xiujun Wang, Ruilin Pan (Anhui University of Technology, China); Xun Shao (Kitami Institute of Technology, Japan)

Community Preference-Based Information-Centric Networking Cache
Xiao Yang (Shanghai Jiao Tong University, China); Chaofeng Zhang (Advanced Institute of Industrial Technology, Japan); Caijuan Chen (National Institute of Informatics, Japan); Haozhe Liang (Pinduoduo Inc., China)

Design and Analysis of Decentralized Interactive Cyber Defense Approach based on Multi-agent Coordination
Ming Liu, Lu Ma, Chao Li, Weiling Chang, Yuanjie Wang (National Computer Network Emergency Response Technical Team/Coordination Center of China, China); Jianming Cui (Chang'an University, China), Yingying Ji (National Computer Network Emergency Response Technical Team/Coordination Center of China, China)

Improving the Response Time of SDN Controllers Based on Vertical Handover
Modhawi Alotaibi (University of Ottawa, Canada and Taibah University, Saudi Arabia); Liu Dandan (Wuhan University, China and University of Ottawa, Canada); Amiya Nayak (University of Ottawa, Canada)

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1st International Workshop on Mobile Sensing with Radio, Light, and Acoustic (MSRLA)

Session Chair: Jia Liu, Nanjing University, China

A Privacy-preserving and Collusion-resisting Top-k Query Processing in WSNs

Jianguo Zhou, Hua Dai, Jie Zhu, Rongqi Qi, Geng Yang, Jian Xu (Nanjing University of Post and Telecommunication, China)

AcousticThermo: Temperature Monitoring using Acoustic Pulse Signal

Fusang Zhang (Institute of Software, Chinese Academy of Sciences, China); Kai Niu (Peking University, China); Xiaolai Fu (Beijing University of Posts and Telecommunications, China); Beihong Jin (Institute of Software, Chinese Academy of Sciences, China)

A Collision-free MAC protocol based on quorum system for underwater acoustic sensor networks

Guangjie Han, Xingjie Wang, Ning Sun, Li Liu (Hohai University, China)

Gesture Recognition System Based on Neural Networks by Using COTS RFID Tag Array

Jiaying Wu, Chuyu Wang, Lei Xie (Nanjing University, China)

Real-time and Accurate RFID Tag Localization based on Multiple Feature Fusion

Shupo Fu, Shigeng Zhang, Danming Jiang (Central South University, China); Xuan Liu (Hunan University, China)

Research and Development of a portable device for measuring the concentration of colloidal solution

Cunbo Jiang, Chenguang Sun, Zhe Lan, Hongxiang Xiao, Jinfang Nie (Guilin University of Technology, China)

Spectrum Prediction Based On Joint Long And Short Term Memory With Convolutional Neural Network In Cognitive Sensing For Spectrum Sharing

Liang Zhang, Min Jia, Qiyu Huang (Harbin Institute of Technology, China); Yun Liu (The 54th Research Institute of China Electronics Technology Group Corporation, China)

Friday, 18 December 2020

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Opening and Best Paper

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Panel: AI/ML for Mobility, Sensing, and Networking
Session Chair: Shiwen Mao, Auburn University, USA

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Session 1: Wireless and Ubiquitous Sensing
Session Chair: Stephan Sigg, Aalto University, Finland

RF-WTI: Wood Types Identification based on Commodity RFID Devices
Xiangmao Chang, Xianghui Zhang, Muhammad Waqas Isa (Nanjing University of Aeronautics and Astronautics, China); Weiwei Wu (Southeast University, China); Yan Li (Nanjing University of Finance and Economics, China)

MobiFit: Contactless Fitness Assistant for Freehand Exercises Using Just One Cellular Signal Receiver
Guanlong Teng, Feng Hong, Yue Xu, Jianbo Qi, Ruobing Jiang, Chao Liu, Zhongwen Guo (Ocean University of China, China)

Magic Wand : Towards Plug-and-Play Gesture Recognition on Smartwatch
Zhipeng Song, Zhichao Cao (Tsinghua University, China); Zhenjiang Li (City University of Hong Kong, Hong Kong); Jilinag Wang (Tsinghua University, China)

FD-Band: A Ubiquitous Fall Detection System Using Low-Cost COTS Smart Band
Kaiwen Guo, Yingling Quan, Hao Zhou (University of Science and Technology of China, China); Zhi Liu (Shizuoka University, Japan); Panlong Yang, Xiang-Yang Li (University of Science and Technology of China, China)

A Geometry-based Non-stationary Wideband MIMO Channel Model and Correlation Analysis for Vehicular Communication Systems

Suqin Pang (Zhengzhou University, China); Fan Bai (Beijing Institute of Spacecraft System Engineering, China); Di Zhang (Zhengzhou University, China); Zheng Wen, Takuro Sato (Waseda University, Japan)

Session 2: Systems & Tools (I)

Session Chair: Remous-Aris Koutsiamanis, IRISA, France

Simultaneous Multi-face Zoom Tracking for 3-D People-Flow Analysis with Face Identification

Liheng Shen, Shaopeng Hu, Kohei Shimasaki, Taku Senoo, Idaku Ishii (Hiroshima University, Japan)

A Centralized Controller for Reliable and Available Wireless Schedules in Industrial Networks

Remous-Aris Koutsiamanis, Georgios Z. Papadopoulos (IMT Atlantique, IRISA, France); Bruno Quoitin (University of Mons, Belgium); Nicolas Montavont (IMT Atlantique, IRISA, France)

Multi-dimensional Impact Detection and Diagnosis in Cellular Networks

Mubashir Adnan Qureshi, Lili Qiu (University of Texas at Austin, USA); Ajay Mahimkar (AT&T, USA); Jian He, Ghufraan Baig (University of Texas at Austin, USA)

Autonomous Security Analysis and Penetration Testing

Ankur Chowdhary, Dijiang Huang, Jayasurya Sevalur Mahendran, Daniel Romo, Yuli Deng, Abdulhakim Sabur (Arizona State University, USA)

User Interest Communities Influence Maximization in a Competitive Environment

Jieming Chen, Leilei Shi (Jiangsu University, China); Lu Liu, Ayodeji O. Ayorinde (University of Leicester, UK); Rongbo Zhu (South-Central University for Nationalities, China); John Panneerselvam (University of Leicester, UK)

Session 3: Internet of Things

Session Chair: Pietro Manzoni, Universitat Politècnica de València, Spain

Analyzing Eye-movements of Drivers with Different Experiences When Making a Turn

Bo Wu (Waseda University, Japan); Yishu Zhu (Chang'an University, China); Shoji Nishimura, Qun Jin (Waseda University, Japan)

Machine Learning Enabled Secure Collection of Phasor Data in Smart Power Grid Networks

Wassila Lalouani, Mohamed Younis (University of Maryland, Baltimore County, USA)

Subject-adaptive Skeleton Tracking with RFID

Chao Yang (Auburn University, USA); Xuyu Wang (California State University, Sacramento, USA); Shiwen Mao (Auburn University, USA)

Mobility-Aware Offloading and Resource Allocation in MEC-Enabled IoT Networks

Han Hu, Weiwei Song (Nanjing University of Posts and Telecommunications, China); Qun Wang (Utah State University, USA); Fuhui Zhou (Nanjing University of Aeronautics and Astronautics, China); Rose Qingyang Hu (Utah State University, USA)

LoRaCTP: a LoRa based Content Transfer Protocol for sustainable edge computing

Kiyoshi Nakamura, Pietro Manzoni (Universitat Politècnica de València, Spain); Marco Zennaro (ICTP-International Centre for Theoretical Physics, Italy); Juan-Carlos Cano, Carlos Calafate (Universitat Politècnica de València, Spain)

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Session 4: Mobile & Wireless Networks (I)

Session Chair: Zhi Liu, Shizuoka University, Japan

A Near-Optimal Protocol for the Subset Selection Problem in RFID Systems

Xiujun Wang (Anhui University of Technology, China); Zhi Liu (The University of Electro-Communications, Japan); Susumu Ishihara (Shizuoka University, Japan); Zhe Dang (Washington State University, USA); Jie Li (Shanghai Jiao Tong University, China)

Reinforcement Learning based Joint Channel/Subframe Selection Scheme for Fair LTE-WiFi Coexistence

Yuki Kishimoto, Xiaoyan Wang, Masahiro Umehira (Ibaraki University, Japan)

Optimizing functional split of baseband processing on TWDM-PON based fronthaul network

Go Hasegawa (Tohoku University, Japan); Masayuki Murata (Osaka University, Japan); Yoshihiro Nakahira, Masayuki Kashima (Oki Electronics Industry Co., Ltd., Japan); Shingo Ata (Osaka City University, Japan)

Deep Reinforcement Learning for Optimal Resource Allocation in Blockchain-based IoT Secure Systems

Hongzhi Xiao, Chen Qiu, Qinglin Yang, Huakun Huang (The University of Aizu, Japan); Junbo Wang (Sun Yat-sen University, China); Chunhua Su (The University of Aizu, Japan)

Compressed Multivariate Kernel Density Estimation for WiFi Fingerprint-based Localization

Zhendong Xu, Baoqi Huang, Bing Jia, Wuyungerile Li (Inner Mongolia University, China)

Towards mmWave Localization with Controllable Reflectors in NLoS Scenarios

Shan Wang, Zengyu Song, Hao Zhou (University of Science and Technology of China, China); Xing Guo (Anhui University and University of Science and Technology of China, China); Jun Xu (University of Science and Technology of China, China); Zhi Liu (Shizuoka University, Japan)

Session 5: Edge and Fog Computing (I)

Session Chair: Yuan Wu, University of Macau, Macau

Real-Time Survivor Detection in UAV Thermal Imagery Based on Deep Learning

Jiong Dong, Kaoru Ota, Mianxiong Dong (Muroran Institute of Technology, Japan)

An Online Pricing Strategy of EV Charging and Data Caching in Highway Service Stations

Zhou Su, Tianxin Lin, Qichao Xu (Shanghai University, China); Nan Chen (Tennessee Tech University, USA); Shui Yu (University of Technology Sydney, Australia); Song Guo (The Hong Kong Polytechnic University, Hong Kong)

A Game Theoretical Pricing Scheme for Vehicles in Vehicular Edge Computing

Chaogang Tang (China University of Mining and Technology, China); Chunsheng Zhu (Southern University of Science and Technology and Peng Cheng Laboratory, China); Huaming Wu (Tianjin University, China); Xianglin Wei (National University of Defense Technology, China); Qing Li (The Hong Kong Polytechnic University, Hong Kong); Joel J. P. C. Rodrigues (Federal University of Piau , Brazil and Instituto de Telecomunica es, Portugal)

Dynamic Spectrum Allocation Enabled Multi-user Latency Minimization in Mobile Edge Computing

Yang Li, Yuan Wu (University of Macau, Macau); Weijia Jia (Beijing Normal University (BNU Zhuhai), China)

CoOMO: Cost-efficient Computation Outsourcing with Multi-site Offloading for Mobile-Edge Services

Tianhui Meng (Shenzhen Institute of Advanced Technology, Chinese Academy of Science, China); Huaming Wu (Tianjin University, China) Zhihao Shang (Freie Universitat Berlin, Germany); Yubin Zhao (Shenzhen Institute of Advanced Technology, Chinese Academy of Science, China); Cheng-Zhong Xu (University of Macau, China)

QoS Optimization of DNN Serving Systems Based on Per-Request Latency Characteristics

Jianfeng Zhang (Nankai University, China); Wensheng Zhang (Institute of Automation, Chinese Academy of Sciences, China); Lingjun Pu (Nankai University and Xidian University, China); Jingdong Xu (Nankai University, China)

Session 6: Big Data and AI in Networking

Session Chair: K. John Wu, Lawrence Berkeley National Laboratory, USA

Enhancing IoT Anomaly Detection Performance for Federated Learning

Brett Weinger (Stony Brook University, USA); Jino Kim (Texas A&M University, USA); Alex Sim (Lawrence Berkeley National Laboratory, USA); Makiya Nakashima (Texas A&M University, USA); Nour Moustafa (University of New South Wales, Australia); K. John Wu (Lawrence Berkeley National Laboratory, USA)

Federated Deep Payload Classification for Industrial Internet with Cloud-Edge Architecture

Peng Zhou (Shanghai University, China)

A Global Brain fuelled by Local intelligence Optimizing Mobile Services and Networks with AI

Si-Ahmed Naas, Thaha Mohammed, Stephan Sigg (Aalto University, Finland)

SSR: Joint Optimization of Recommendation and Adaptive Bitrate Streaming for Short-form Video Feed

Dezhi Ran, Yuanxing Zhang, Wenhan Zhang, Kaigui Bian (Peking University, China)

Training Machine Learning Models Through Preserved Decentralization

Goodlet Akwasi Kusi, Qi Xia, Christian Nii Aflah Cobblah, Jianbin Gao, Hu Xia (University of Electronic Science and Technology of China, China)

Scheduling mix-flow in SD-DCN based on Deep Reinforcement Learning with Private Link

Jinjie Lu, Waixi Liu, Yinghao Zhu, Sen Ling, Zhitao Chen, Jiaqi Zeng (Guangzhou University, China)

Friday, 18 December 2020 | 15:10 – 16:50 (Tokyo Time)

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Session 7: Security, Privacy & Trust (I)

Session Chair: Chunhua Su, The University of Aizu, Japan

TL-IDPS: Two Level Intrusion Detection and Prevention System using Probabilistic Optimal Feature Set Estimation

Ernest Ntizikira, Lei Wang, Xinxin Lu, Bingxian Lu (Dalian University of Technology, China)

Adaptive Machine learning: A Framework for Active Malware Detection

Muhammad Aslam, Dengpan Ye (Wuhan University, China); Hanif Muhammad (COMSATS University Islamabad, Wah Campus, Pakistan); Asad Muhammad (Nagoya Institute of Technology, Japan)

Privacy-protected and Auditable Crowdsourced Indoor Localization based on Blockchain
Wenxiang Wu, Shaojing Fu, Yuchuan Luo (National University of Defense Technology, China)

Fine-grained Device and Data Access Control of Community Medical Internet of Things
Cheng Huang, Ziyang Zhang, Jing Huang, Fulong Chen (Anhui Normal University, China)

BDTF: A Blockchain-Based Data Trading Framework with Trusted Execution Environment
Guoxiong Su, Wenyan Yang, Zhengding Luo, Yinghong Zhang, Zhiqiang Bai, Yuesheng Zhu
(Peking University, China)

Session 8: Algorithms, Theory, and Protocols (I)

Session Chair: Xiaohua Xu, Kennesaw State University, USA

Online Distributed Job Dispatching with Outdated and Partially-Observable Information

Yuncong Hong (University of Science and Technology of China and Southern University of Science and Technology, China); Bojie Lv, Rui Wang (Southern University of Science and Technology and Peng Cheng Laboratory, China); Haisheng Tan (University of Science and Technology of China and Peng Cheng Laboratory, China); Zhenhua Han (The University of Hong Kong, Hong Kong); Hao Zhou (University of Science and Technology of China, China); Francis Lau (The University of Hong Kong, Hong Kong)

Efficient Algorithm for Multi-Constrained Opportunistic Wireless Scheduling

Xiaohua Xu (Kennesaw State University, USA); Lixin Wang (Columbus State University, USA)

COPSS-lite: A Lightweight ICN based Pub/Sub System for IoT Environments

Sripriya Srikant Adhatarao (University of Goettingen, Germany); Haitao Wang (Clausthal University of Technology, Germany); Mayutan Arumaithurai, Xiaoming Fu (University of Goettingen, Germany)

Throughput Maximization for UAV-Enabled Data Collection

Junchao Gong, Xiaojun Zhu (Nanjing University of Aeronautics and Astronautics, China); Lijie Xu (Nanjing University of Posts and Telecommunications, China)

Optimal Defense Strategy against Evasion Attacks

Jiachen Wu (Sichuan University, China); Jipeng Li, Yan Wang, Yanru Zhang (University of Electronic Science and Technology of China, China); Yingjie Zhou (Sichuan University, China)

Session 9: Experiments & Applications

Session Chair: Mianxiong Dong, Muroran Institute of Technology, Japan

Dynamic Resource Allocation for Hierarchical Federated Learning

Wei Yang Bryan Lim, Jer Shyuan Ng (Alibaba Group, China and Nanyang Technological University, Singapore); Zehui Xiong, Dusit Niyato (Nanyang Technological University, Singapore); Song Guo (The Hong Kong Polytechnic University, Hong Kong); Cyril Leung (The University of British Columbia, Canada and Nanyang Technological University, Singapore); Chunyan Miao (Nanyang Technological University, Singapore)

Terminal-Edge-Cloud Collaboration: An Enabling Technology for Robust Multimedia Streaming

Dapeng Wu, Jin Yang (Chongqing University of Posts and Telecommunications, China); Honggang Wang (University of Massachusetts Dartmouth, USA); Boran Yang, Ruyan Wang (Chongqing University of Posts and Telecommunications, China)

Multivariate and Multi-frequency LSTM based Fine-grained Productivity Forecasting for Industrial IoT

Yan Zhang, Xiaolong Zheng, Liang Liu, Huadong Ma (Beijing University of Posts and Telecommunications, China)

Tile-based Multi-source Adaptive Streaming for 360-degree Ultra-High-Definition Videos

Xinjing Yuan, Lingjun Pu, Ruilin Yun, Jingdong Xu (Nankai University, China)

Privacy-Protecting Reputation Management Scheme in IoV-based Mobile Crowdsensing

Zhifei Wang, Luning Liu, Luhan Wang, Xiangming Wen, Wenpeng Jing (Beijing University of Posts and Telecommunications, China)

Friday, 18 December 2020 | 17:00 – 18:00 (Tokyo Time)

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Friday, 18 December 2020 | 08:00 – 09:00 (London Time)

Friday, 18 December 2020 | 03:00 – 04:00 (New York Time)

Keynote I: Scaling the Edge

- Prof. Jon Crowcroft, University of Cambridge, UK

Session Chair: Lars Wolf, Technische Universitaet Braunschweig, Germany

Saturday, 19 December 2020

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Friday, 18 December 2020 | 19:00 – 20:00 (New York Time)

Keynote II: How to Face the 5G / Beyond 5G / 6G Era
- Prof. Hiroyuki Morikawa, The University of Tokyo, Japan
Session Chair: Yusheng Ji, National Institute of Informatics (NII), Japan

Saturday, 19 December 2020 | 10:10 – 11:50 (Tokyo Time)
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Friday, 18 December 2020 | 20:10 – 21:50 (New York Time)

Session 10: Security, Privacy & Trust (II)
Session Chair: Haohua Du, Beihang University, China

Identifying unfamiliar callers' professions from privacy-preserving mobile phone data
Jiaquan Zhang (University of Goettingen, Germany); Xiaoming Yao (China Telecom Cloud Branch, China); Xiaoming Fu (University of Goettingen, Germany)

Length Matters: Fast Internet Encrypted Traffic Service Classification based on Multi-PDU Lengths
Zihan Chen, Guang Cheng, Bomiao Jiang, Shuye Tang, Shuyi Guo, Yuyang Zhou (Southeast University, China)

Trapdoor Assignment of PEKS-based NDN Strategy in Two-Tier Networks
Kyi Thar Ko, Masahiro Mambo (Kanazawa University, Japan)

NoPTPeer: Protecting Android Devices from Stealthy Spoofing and Stealing in WLANs without Privilege
Shuying Wei (Tsinghua University, China); Xiaoliang Wang (Capital Normal University, China); Ke Xu (Tsinghua University and Peng Cheng Laboratory, China)

Early Botnet Detection for the Internet and the Internet of Things by Autonomous Machine Learning
Anderson Bergamini de Neira, Alex Medeiros Araujo, Michele Nogueira (Federal University of Paraná, Brazil)

Session 11: Algorithms, Theory, and Protocols (II)

Session Chair: Noriaki Kamiyama, Fukuoka University, Japan

Delay Efficient D2D Communications Over 5G Edge-Computing Mobile Networks with Power Control

Xiaohua Xu (Kennesaw State University, USA); Lixin Wang (Columbus State University, USA)

Efficient Service Entity Chain Placement in Mobile Edge Computing

Yu Liang, Jidong Ge, Sheng Zhang, Changan Niu (Nanjing University, China); Wei Song (Nanjing University of Science and Technology, China); Bin Luo (Nanjing University, China)

Real-time Emotion Recognition for Sales

Si-Ahmed Naas, Stephan Sigg (Aalto University, Finland)

Resilient Caching in Information-Centric Networking

Noriaki Kamiyama, Rin Hamada (Fukuoka University, Japan)

NDN Based Participatory Crowdsensing Framework with Area-focused Interest Forwarding

Hideki Tode, Ashish Man Singh Pradhan, Daishi Kondo, Yosuke Tanigawa (Osaka Prefecture University, Japan)

Session 12: Systems & Tools (II)

Session Chair: Celimuge Wu, The University of Electro-Communications, Japan

Load balancing and resource management in distributed B5G networks

Lu Ma, Weiling Chang, Chao Li, Shanjin Ni, Jia Cui, Ming Liu (National Computer Network Emergency Response Technical Team/Coordination Center of China, China)

Research on D2D Data Transmission Protocol in NDN

Bo Cui, Xinmiao Jian, Qi Chen (Inner Mongolia University, China)

Efficient Distributed Training in Heterogeneous Mobile Networks with Active Sampling

Yunhui Guo, Xiaofan Yu, Kamalika Chaudhuri, Tajana Rosing (University of California San Diego, USA)

Evaluation environment using edge computing for artificial intelligence-based irrigation system

Takaaki Kawai, Hiroshi Mineno (Shizuoka University, Japan)

A QoE-based 360° Video Adaptive Bitrate Delivery and Caching Scheme for C-RAN

Shunyi Wang, Xiaobin Tan, Simin Li, Xiang Xu, Jian Yang, Quan Zheng (University of Science and Technology of China, China)

Saturday, 19 December 2020 | 13:00 – 13:40 (Tokyo Time)

Saturday, 19 December 2020 | 12:00 – 12:40 (Beijing Time)

Saturday, 19 December 2020 | 04:00 – 04:40 (London Time)

Friday, 18 December 2020 | 23:00 – 23:40 (New York Time)

Poster & Demo Session

Session Chair: Zhi Liu, Shizuoka University, Japan

A Study on MQTT Node Selection

Fu Chen, Yujia Huo, Kun Liu, Wenying Tang, Jianming Zhu, Zhiyuan Sui (Central University of Finance and Economics, China)

Vision-aided 3D Human Pose Estimation with RFID

Chao Yang (Auburn University, USA); Xuyu Wang (California State University, Sacramento, USA); Shiwen Mao (Auburn University, USA)

Impact of Mode Selection on the Performance of D2D-Unlicensed Communications

Ganggui Wang, Celimuge Wu, Tsutomu Yoshinaga (The University of Electro-Communications, Japan); Rui Yin (Zhejiang University City College, China)

UAV-empowered Protocol for Information Sharing in VDTN

Zhaoyang Du, Celimuge Wu, Tsutomu Yoshinaga (The University of Electro-Communications, Japan)

Saturday, 19 December 2020 | 13:50 – 16:10 (Tokyo Time)

Saturday, 19 December 2020 | 12:50 – 15:10 (Beijing Time)

Saturday, 19 December 2020 | 04:50 – 07:10 (London Time)

Friday, 18 December 2020 | 23:50 – 02:10 (New York Time)

Session 13: Mobile & Wireless Networks (II)

Session Chair: Muhammad Aslam, Wuhan University, China

A FAIR Extension for the MQTT Protocol

Darius Salami (Aalto University, Finland); Olga Streibel, Marcus Rhenius (Bayer AG); Stephan Sigg (Aalto University, Finland)

AirQ: A Privacy-Preserving Truth Discovery Framework for Vehicular Air Quality Monitoring

Rui Liu, Jianping Pan (University of Victoria, Canada)

Jointly Video Bitrate Adaptation and Multicast Resource Allocation in Mobile Edge Networks

Simin Li, Xiaobin Tan, Shunyi Wang, Jian Yang, Quan Zheng (University of Science and Technology of China, China)

Data Collection Strategy Based on Drone Technology in Wireless Sensor Networks

Bo Yang, Xiangyu Bai (Inner Mongolia University, China)

Wireless Information and Energy Provision with Practical Modulation in Energy Self-Sustainable Wireless Networks

Jie Hu, Li Zhang, Qin Yu (University of Electronic Science and Technology of China, China);
Kun Yang (University of Essex, UK)

A Priority Task Scheduling Algorithm based on Residual Energy in EH-WSNs

Wuyungerile Li, Gao Haode, Yingcong Liu, Bing Jia, Baoqi Huang (Inner Mongolia University, China)

Energy-efficient Trajectory Planning and Speed Scheduling for UAV-assisted Data Collection

Weidu Ye, Wenjia Wu, Feng Shan, Ming Yang, Junzhou Luo (Southeast University, China)

Session 14: Edge and Fog Computing (II)

Session Chair: Hideki Tode, Osaka Prefecture University, Japan

Joint Service Caching and Computation Offloading to Maximize System Profits in Mobile Edge-Cloud Computing

Qingyang Fan (Harbin Engineering University, China); Junyu Lin (Institute of Information Engineering, Chinese Academy of Sciences, China); Guangsheng Feng, Zihan Gao (Harbin Engineering University, China); Huiqiang Wang (Harbin Engineering University and Peng Cheng Laboratory, China); Yafei Li (Harbin Engineering University, China)

Urban Mobility Prediction based on LSTM and Discrete Position Relationship Model

Ming Tao, (Dongguan University of Technology, China); Geng Sun (Guangdong University of Technology and Guangdong University of Technology, China); Tian Wang (Huaqiao University, China)

SDN Based Computation Offloading for Industrial Internet of Things

Gen Li, Shutian Hua, Liang Liu, Xiaolong Zheng, Huadong Ma (Beijing University of Posts and Telecommunications, China)

Analysing Ballistocardiography for Pervasive Healthcare

Roni Hytönen, Alison Tshala, Jan Schreier, Melissa Holopainen, Aada Forsman, Minna Oksanen, Rainhard Dieter Findling, Le Ngu Nguyen, Stephan Sigg (Aalto University, Finland); Nico Jähne-Raden (Hannover Medical School, Germany)

Energy-saving Strategy for Edge Computing by Collaborative Processing Tasks on Base Stations

Zhongjun Ma, Zhenchun Wei, Wenjie Zhang, Zengwei Lyu, Junyi Xu, Benhong Zhang (Hefei University of Technology, China)

Real-time Task Offloading for Data and Computation Intensive Services in Vehicular Fog Computing Environments

Chunhui Liu, Kai Liu, Xincuo Xu, Hualing Ren, Feiyu Jin, Songtao Guo (Chongqing University, China)

MEC-Assisted FoV-Aware and QoE-Driven Adaptive 360° Video Streaming for Virtual Reality

Chih-Ho Hsu (National Taiwan University, Taiwan)

Session 15: Security, Privacy & Trust (III)

Session Chair: Kaigui Bian, Peking University, China

Markov Probability Fingerprints: A Method for Identifying Encrypted Video Traffic

Luming Yang, Shaojing Fu, Yuchuan Luo, Jiangyong Shi (National University of Defense Technology, China)

An Efficient Data Aggregation Scheme with Local Differential Privacy in Smart Grid

Na Gai, Kaiping Xue, Peixuan He, Bin Zhu (University of Science and Technology of China, China); Jianqing Liu (University of Alabama in Huntsville, USA); Debiao He (Wuhan University, China)

Detection of malicious nodes in drone ad-hoc network based on supervised learning and clustering algorithms

Shanshan Sun, Zuchao Ma, Liang Liu, Hang Gao, Jianfei Peng (Nanjing University of Aeronautics and Astronautics, China)

Lifetime Improvements of Smart Sensors Maintenance Protocol in Prospect of IoT-based Rampal Power Plant

Syed Bilal Hussain Shah, Wang Lei (Dalian University of Technology, China); Md Ershadul Haque (Feni University, Bangladesh); Md Jahirul Islam (Z. H. Sikder University of Science & Technology Shariatpur, Bangladesh), Anil Carie (VIT-AP Amaravati, India); Neeraj Kumar (Thapar Institute of Science and Technology Patiala, India)

BIA: A Blockchain-based Identity Authorization Mechanism

Xiaodong Ren, Feilong Lin, Zhongyu Chen, Changbing Tang, Zhonglong Zheng, Minglu Li (Zhejiang Normal University, China)

Weighted Local Outlier Factor for Detecting Anomaly on In-Vehicle Network

Yuan Linghu, Ming Xu, Xiangxue Li and Haifeng Qian (East China Normal University, China)

SASAK: Shrinking the Attack Surface for Android Kernel with Stricter "seccomp" Restrictions

Yingjiao Niu, Lingguang Lei, Yuewu Wang, Jiang Chang, Shijie Jia, Chunjing Kou (Institute of Information Engineering, Chinese Academy of Sciences, China)

Saturday, 19 December 2020 | 16:10 – 16:20 (Tokyo Time)
Saturday, 19 December 2020 | 15:10 – 15:20 (Beijing Time)
Saturday, 19 December 2020 | 07:10 – 07:20 (London Time)
Saturday, 19 December 2020 | 02:10 – 02:20 (New York Time)

Closing Speech