

# Shaodan Ma

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## 1. GENERAL INFORMATION

### 1.1 Professional Experience

- **Professor** (Aug. 2021 ~ present):  
Department of Electrical and Computer Engineering,  
Faculty of Science and Technology, **University of Macau (UM)**
- **Assistant Director** (May 2020 ~ present):  
State Key Laboratory of Internet of Things for Smart City,  
**University of Macau (UM)**
- **Associate Professor** (Aug. 2015 ~ Aug. 2021):  
Department of Electrical and Computer Engineering,  
Faculty of Science and Technology, **University of Macau (UM)**
- **Assistant Professor** (Aug. 2011 ~ Aug. 2015):  
Department of Electrical and Computer Engineering,  
Faculty of Science and Technology, **University of Macau (UM)**
- **Honorary Assistant Professor** (Oct. 2011 ~ Aug. 2015):  
Department of Electrical and Electronic Engineering, **University of Hong Kong (HKU)**
- **Visiting Scholar** (Mar. 2010 ~ Aug. 2010):  
Department of Electrical Engineering, **Princeton University**  
Host: Professor H. Vincent Poor
- **Post-Doctoral Fellow** (Sep. 2006 ~ Aug. 2011):  
Department of Electrical and Electronic Engineering, **University of Hong Kong**

### 1.2 Academic Background

- **Doctor of Philosophy** (Sep. 2002 ~ Aug. 2006):  
Department of Electrical and Electronic Engineering, **The University of Hong Kong, Hong Kong**
- **Master of Engineering** (Sep. 1999 ~ July 2002):  
Department of Electronic Engineering, **Nankai University, Tianjin, China**
- **Bachelor of Science** (Sep. 1995 ~ July 1999):  
Department of Electronic Engineering, **Nankai University, Tianjin, China**
- **Bachelor of Economics** (Sep. 1995 ~ July 1999):  
Department of Finance, **Nankai University, Tianjin, China**

## 2. TEACHING

### 2.1 Courses Taught:

- [1]. ECEN3012 / ECEB359, **Principles of Communication Systems**, UG course
- [2]. GEST1012 / GEST016 / ELEC111, **Electricity and Life**, UG course
- [3]. ECEN7011 / ELEC713, **Advanced Topics in Telecommunications**, PG course
- [4]. ECEB362, **Cellular Communication Network Design and Optimization**, UG course

### 2.2 Student Supervision

#### • Master Student Supervision

- [1]. Kehui Li (Sep. 2022 – present), on-going  
Research topic: Wireless localization
- [2]. Changxing Deng (Sep. 2020 – present), on-going  
Research topic: Smart sensing
- [3]. Xiaohong Chen (Sep. 2019 – Aug. 2022), graduated  
Thesis: High-Accuracy CSI Feedback for Massive MIMO Systems
- [4]. Bingui Zhou (Sep. 2018 – Aug. 2021), graduated  
Thesis: Interpretable Multivariate Learning for Time Series Forecasting
- [5]. Nan Lin (Sep. 2017 – Jan. 2021), graduated  
Thesis: Multi-head Attention Neural Networks for Nonintrusive Load Monitoring
- [6]. Yuanmeng Zhang (Sep. 2016 – July 2019), graduated  
Thesis: Non-intrusive Load Monitoring based on Convolutional Neural Network with Differential Input
- [7]. Kaichen Guo (Sep. 2014 – July 2017), graduated  
Thesis: Passive Localization in Quasi-Synchronous Sensor Networks with Sensor Uncertainty and Non-Line-of-Sight Measurements
- [8]. Nanmiao Wu (Sep. 2013 – July 2016), graduated  
Thesis: Robust beamforming design for relay systems
- [1]. Xuanxuan Yang (Sep. 2011 – Aug. 2014), graduated  
Thesis: Performance analysis of HARQ schemes operating over time correlated fading channels
- [2]. Yuan Wang (Sep. 2011 – Aug. 2014), graduated  
Thesis: Passive localization in quasi-synchronous sensor networks
- [3]. Binkai Ou (Sep. 2011 – Aug. 2013, Co-supervisor), graduated  
Thesis: Design of a mobile RFID reader system with closely placed array and its application to segway vehicle

#### • PhD Student Supervision

- [1]. Chengwang Ji (Sep. 2022 – present), on-going  
Research topic: AI-aided communications
- [2]. Bingui Zhou (Sep. 2021 – present), on-going  
Research topic: AI-aided communications
- [3]. Pingping Zhang (Sep. 2021 – present), on-going  
Research topic: Transceiver optimization in intelligent reflecting surface-aided systems
- [4]. Chengzhi Ma (Sep. 2020 – present), on-going  
Research topic: Millimeter wave communications
- [5]. Jintao Wang (Sep. 2020 – present), on-going

Research topic: Simultaneously wireless information and power transfer

- [6]. Kaizhe Xu (Sep. 2019 – present), on-going  
Research topic: Analysis and resource allocation for intelligent reflecting surface-aided systems
- [7]. Yunxuan Dong (Sep. 2018 – present), on-going  
Research topic: Time series forecasting in smart city applications
- [8]. Huan Zhang (Sep. 2017 – Apr. 2022), graduated  
Thesis: Performance Analysis and Optimal Design for Spatially Correlated Massive MIMO Systems
- [9]. Xianda Wu (Sep. 2016 – July 2021), graduated  
Thesis: Low Complexity Channel Estimation for Millimeter-Wave Massive MIMO Communication Systems
- [10]. Yunfei Li (Jan. 2016 – April 2021), graduated  
Thesis: Robust and Secure Localization in Harsh Mobile Environments
- [11]. Junjuan Feng (Sep. 2014 – Mar. 2019), graduated, Post-Doctoral Fellow in Queen's University Belfast, UK  
Thesis: Analysis of Two-Way Massive MIMO Relaying Systems with Spatial Correlation and Hardware Impairments
- [12]. Zheng Shi (Sep. 2013 – July 2017, Co-supervisor), graduated, Associate Professor in Jinan University, China  
Thesis: Analysis of HARQ-IR over Time Correlated Fading Channels

### 3. RESEARCH AND PUBLICATIONS

#### 3.1 Current Research Interests

Signal processing and wireless communications, particularly, localization, transceiver design, resource allocation, and performance analysis, in massive MIMO, millimeter waves, IoT communications, and 5G and beyond systems

#### 3.2 Selected Publications

##### Published/Accepted Journal Articles in the past three years:

- [1] Qing Xue, Yijing Liu, Yao Sun, Jian Wang, Li Yan, Gang Feng, and **Shaodan Ma**, "Beam Management in Ultra-dense mmWave Network via Federated Reinforcement Learning: An Intelligent and Secure Approach", accepted by *IEEE Transactions on Cognitive Communications and Networking*
- [2] Meng Hua, Qingqing Wu, Chong He, **Shaodan Ma**, and Wen Chen, "Joint Active and Passive Beamforming Design for IRS-Aided Radar-Communication", accepted by *IEEE Transactions on Wireless Communications*
- [3] Binggui Zhou, Guanghua Yang, Zheng Shi, and **Shaodan Ma**, "Natural Language Processing for Smart Healthcare", accepted by *IEEE Reviews in Biomedical Engineering*
- [4] Tianyu Liu, Guangchi Zhang, Miao Cui, Changsheng You, Qingqing Wu, **Shaodan Ma**, and Wei Chen, "Task Completion Time Minimization for UAV-Enabled Data Collection in Rician Fading Channels", accepted by *IEEE Internet of Things Journal*
- [5] Shiqi Gong, Jintao Wang, Xin Zhao, **Shaodan Ma**, and Chengwen Xing, "A Framework for Hardware Impairments Aware Multi-Antenna Transceiver Design in IoT Systems via Majorization-Minimization", accepted by *IEEE Internet of Things Journal*
- [6] Liangyuan Xu, Feifei Gao, Ting Zhou, **Shaodan Ma** and Wei Zhang, "Joint Channel Estimation and Mixed-ADCs Allocation for Massive MIMO via Deep Learning", accepted by *IEEE Transactions on Wireless Communications*
- [7] Kaitao Meng, Qingqing Wu, **Shaodan Ma**, Wen Chen, Kunlun Wang and Jun Li, "Throughput Maximization for UAV-enabled Integrated Periodic Sensing and Communication", accepted by *IEEE Transactions on Wireless Communications*

- [8] Weiqiang Tan and **Shaodan Ma**, "Antenna Array Topologies for mmWave Massive MIMO Systems: Spectral Efficiency Analysis", accepted by *IEEE Transactions on Vehicular Technology*
- [9] Linlin Zhao, **Shaodan Ma**, Wanzhong Chen, and Fengye Hu, "Optimal Probabilistic Repetition for Massive MIMO-aided Grant-free Short-packet Transmissions", accepted by *IEEE Transactions on Vehicular Technology*
- [10] Xianda Wu, **Shaodan Ma**, Xi Yang and Guanghua Yang, "Clustered Sparse Bayesian Learning Based Channel Estimation for Millimeter-Wave Massive MIMO Systems", accepted by *IEEE Transactions on Vehicular Technology*
- [11] Chengzhi Ma, Huan Zhang, Xi Yang and **Shaodan Ma**, "Massive MIMO Empowered Wireless Powered Sensor Networks: An Optimal Design with Statistical CSI", *IEEE Wireless Communications Letters*, vol. 11(10), pp. 2105-2109, Oct. 2022
- [12] Liang Xiao, Hongyan Li, Shi Yu, Yi Zhang, Li-Chun Wang, and **Shaodan Ma**, "Reinforcement Learning Based Network Coding for Drone-Aided Secure Wireless Communications", *IEEE Transactions on Communications*, vol. 70(9), pp. 5975-5988, Sep. 2022
- [13] Yunxuan Dong, **Shaodan Ma**, Hongcai Zhang and Guanghua Yang, "Wind Power Prediction Based on Multi-class Autoregressive Moving Average Model with Logistic Function", *Journal of Modern Power Systems and Clean Energy*, vol. 10(5), pp. 1184-1193, Sep. 2022
- [14] Jiahui Feng, Zheng Shi, Guanghua Yang, Nikolaos I. Miridakis, **Shaodan Ma**, and Theodoros A. Tsiftsis, "Outage Performance of Cross-Packet HARQ", *IEEE Wireless Communications Letters*, vol. 11(7), pp. 1423-1427, July 2022
- [15] Kaitao Meng, Qingqing Wu, **Shaodan Ma**, Wen Chen, and Tony Q. S. Quek, "UAV Trajectory and Beamforming Optimization for Integrated Periodic Sensing and Communication", *IEEE Wireless Communications Letters*, vol. 11(6), pp. 1211-1215, June 2022
- [16] Kaizhe Xu, Shiqi Gong, Miao Cui, Guangchi Zhang, and **Shaodan Ma**, "Statistically Robust Transceiver Design for Multi-RIS Assisted Multi-user MIMO Systems", *IEEE Communications Letters*, vol. 26(6), pp. 1428-1432, June 2022
- [17] Shiqi Gong, **Shaodan Ma**, Ziyi Yang, Chengwen Xing, and Jianping An, "Throughput Maximization for Asynchronous RIS-Aided Hybrid Powered Communication Networks", *IEEE Transactions on Wireless Communications*, vol. 21(6), pp. 4114-4132, June 2022
- [18] Binggui Zhou, Guanghua Yang, Zheng Shi, and **Shaodan Ma**, "Interpretable Temporal Attention Network for COVID-19 Forecasting", *Applied Soft Computing*, vol. 120, May 2022
- [19] Xin Zhao, Kaizhe Xu, **Shaodan Ma**, Shiqi Gong, Guanghua Yang and Chengwen Xing, "Joint Transceiver Optimization for IRS-Aided MIMO Communications", *IEEE Transactions on Communications*, vol. 70(5), pp. 3467-1482, May 2022
- [20] Huan Zhang, Zhengtao Liao, Zheng Shi, Guanghua Yang, Qingping Dou, and **Shaodan Ma**, "Performance Analysis of MIMO-HARQ Assisted V2V Communications with Keyhole Effect", *IEEE Transactions on Communications*, vol. 70(5), pp. 3034-3046, May 2022
- [21] Zheng Shi, Huan Zhang, Hong Wang, Yaru Fu, Guanghua Yang, Xinrong Ye, and **Shaodan Ma**, "Block Error Rate Analysis of Short-Packet Mobile-to-Mobile Communications over Correlated Cascaded Fading Channels", *IEEE Transactions on Vehicular Technology*, vol. 71(4), pp. 4087-4101, April 2022
- [22] Guangchi Zhang, Xiaoqi Ou, Miao Cui, Qingqing Wu, **Shaodan Ma**, and Wei Chen, "Cooperative UAV Enabled Relaying Systems: Joint Trajectory and Transmit Power Optimization", *IEEE Transactions on Green Communications and Networking*, vol. 6(1), pp. 543-557, Mar. 2022
- [23] Linlin Zhao, Shaoshi Yang, Xuefen Chi, Wanzhong Chen and **Shaodan Ma**, "Achieving Energy-Efficient Uplink URLLC with MIMO-Aided Grant-Free Access", *IEEE Transactions on Wireless Communications*, vol. 21(2), pp. 1407-1420, Feb. 2022

- [24] Zheng Shi, Hong Wang, Yaru Fu, Guanghua Yang, **Shaodan Ma**, and Feifei Gao, "Outage Analysis of Reconfigurable Intelligent Surface Aided MIMO Communications with Statistical CSI", *IEEE Transactions on Wireless Communications*, vol. 21(2), pp. 823-839, Feb. 2022
- [25] Xianda Wu, Xi Yang, **Shaodan Ma**, Binggui Zhou, and Guanghua Yang, "Hybrid Channel Estimation for UPA-Assisted Millimeter-Wave Massive MIMO IoT Systems", *IEEE Internet of Things Journal*, vol. 9(4), pp. 2829-2842, Feb. 15, 2022
- [26] Xiaohong Chen, Changxing Deng, Binggui Zhou, Huan Zhang, Guanghua Yang, and **Shaodan Ma**, "High-Accuracy CSI Feedback with Super-Resolution Network for Massive MIMO Systems", *IEEE Wireless Communications Letters*, vol. 11(1), pp. 141-145, Jan. 2022
- [27] Weiqiang Tan, Xi Yang and **Shaodan Ma**, "Spectral Efficiency of Massive MIMO with LMMSE Receivers under Finite Dimensional Channel", *IEEE Wireless Communications Letters*, vol. 11(1), pp. 18-22, Jan. 2022
- [28] Kaizhe Xu, Jun Zhang, Xi Yang, **Shaodan Ma** and Guanghua Yang, "On the Sum-Rate of RIS-Assisted MIMO Multiple-Access Channels over Spatially Correlated Rician Fading", *IEEE Transactions on Communications*, vol. 69(12), pp. 8228-8241, Dec. 2021
- [29] Qing Xue, Yao Sun, Jian Wang, Gang Feng, Li Yan, and **Shaodan Ma**, "User-centric Association in Ultra-dense mmWave Networks via Deep Reinforcement Learning", *IEEE Communications Letters*, vol. 25(11), pp. 3594-3598, Nov. 2021
- [30] Zheng Shi, Hong Wang, Yaru Fu, Guanghua Yang, **Shaodan Ma**, and Xinrong Ye, "Outage Performance and Optimal Design of MIMO-NOMA Enhanced Small Cell Networks with Imperfect Channel-State Information", *China Communications*, pp. 107-128, Oct. 2021
- [31] Yunfei Li, **Shaodan Ma**, and Guanghua Yang, "Robust Localization with Distance-Dependent Noise and Sensor Location Uncertainty", *IEEE Wireless Communications Letters*, vol. 10(9), pp. 1876-1880, Sep. 2021
- [32] Jun Zhang, Jie Liu, **Shaodan Ma**, Chao-Kai Wen and Shi Jin, "Large System Achievable Rate Analysis of RIS-Assisted MIMO Wireless Communication with Statistical CSIT", *IEEE Transactions on Wireless Communications*, vol. 20(9), pp. 5572-5585, Sep. 2021
- [33] Shiqi Gong, Chengwen Xing, Xin Zhao, **Shaodan Ma**, and Jianping An, "Unified IRS-Aided MIMO Transceiver Designs via Majorization Theory", *IEEE Transactions on Signal Processing*, vol. 69, pp. 3016-3032, 2021
- [34] Yunfei Li, **Shaodan Ma**, Guanghua Yang and Kai-Kit Wong, "Secure Localization and Velocity Estimation in Mobile IoT Networks with Malicious Attacks", *IEEE Internet of Things Journal*, vol. 8(8), pp. 6878-6892, April 15, 2021
- [35] Huan Zhang, Junjuan Feng, Zheng Shi, **Shaodan Ma** and Guanghua Yang, "Rate Maximization of Wireless Powered Cognitive Massive MIMO Systems", *IEEE Internet of Things Journal*, vol. 8(7), pp. 5632-5644, April 1, 2021
- [36] Chengwen Xing, Shuai Wang, Sheng Chen, **Shaodan Ma**, H. Vincent Poor and Lajos Hanzo, "Matrix-Monotonic Optimization – Part II: Multi-Variate Optimization", *IEEE Transactions on Signal Processing*, vol. 69, pp. 179-194, 2021
- [37] Chengwen Xing, Shuai Wang, Sheng Chen, **Shaodan Ma**, H. Vincent Poor and Lajos Hanzo, "Matrix-Monotonic Optimization – Part I: Single-Variate Optimization", *IEEE Transactions on Signal Processing*, vol. 69, pp. 738-754, 2021
- [38] Guanghua Yang, Huan Zhang, Zheng Shi, **Shaodan Ma** and Hong Wang, "Asymptotic Outage Analysis of Spatially Correlated Rayleigh MIMO Channels", *IEEE Transactions on Broadcasting*, vol. 67(1), pp. 263-278, Mar. 2021
- [39] Liangyuan Xu, Cheng Qian, Feifei Gao, Wei Zhang, and **Shaodan Ma**, "Angular Domain Channel Estimation for mmWave Massive MIMO With One-Bit ADCs/DACs", *IEEE Transactions on Wireless Communications*, vol. 20(2), pp. 969-982, Feb. 2021
- [40] Yue Wu, **Shaodan Ma** and Yuantao Gu, "A Unified Framework of Non-Orthogonal Pilot Design for Multi-Cell Massive MIMO Systems", *IEEE Transactions on Communications*, vol. 68(12), pp. 7623-7633, Dec. 2020

- [41] Jun Zhang, Yongxu Zhu, **Shaodan Ma** and Kai-Kit Wong, "Large System Analysis of Downlink MISO-NOMA System via Regularized Zero-Forcing Precoding with Imperfect CSIT ", *IEEE Communications Letters*, vol. 24(11), pp. 2454-2458, Nov. 2020
- [42] Xianda Wu, **Shaodan Ma** and Xi Yang, "Tensor-Based Low-Complexity Channel Estimation for mmWave Massive MIMO-OTFS Systems", *Journal of Communications and Information Networks*, vol. 5(3), pp. 324-334, Sep. 2020
- [43] Shiqi Gong, **Shaodan Ma**, Chengwen Xing, Yonghui Li and Lajos Hanzo, "Multi-Antenna Aided Secrecy Beamforming Optimization for Wirelessly Powered HetNets", *IEEE Transactions on Wireless Communications*, vol. 19(8), pp. 5261-5277, Aug. 2020
- [44] Yunfei Li, **Shaodan Ma**, Guanghua Yang and Kai-Kit Wong, "Robust Localization for Mixed LOS/NLOS Environments with Anchor Uncertainties", *IEEE Transactions on Communications*, vol. 68(7), pp. 4507-4521, July 2020
- [45] Zhi Mao, Fengye Hu, Dayang Sun, **Shaodan Ma**, and Xiaolan Liu, "Fairness-Aware Intragroup Cooperative Transmission in Wireless Powered Communication Networks", *IEEE Transactions on Vehicular Technology*, vol. 69(6), pp. 6463-6472, June 2020
- [46] Chengwen Xing, Yindi Jing, Shuai Wang, **Shaodan Ma**, and H. Vincent Poor, "New Viewpoint and Algorithms for Water-Filling Solutions in Wireless Communications ", *IEEE Transactions on Signal Processing*, vol.68, pp. 1618-1634, 2020
- [47] Zheng Shi, Hong Wang, Yaru Fu, Guanghua Yang, **Shaodan Ma**, Fen Hou and Theodoros A. Tsiftsis, "Zero-Forcing Based Downlink Virtual MIMO-NOMA Communications in IoT Networks", *IEEE Internet of Things Journal*, vol.7(4), pp. 2716-2737, April 2020
- [48] Shiqi Gong, Shuai Wang, Chengwen Xing, **Shaodan Ma**, and Tony Q. S. Quek, "Robust Superimposed Training Optimization for UAV Assisted Communication Systems ", *IEEE Transactions on Wireless Communications*, vol.19(3), pp. 1704-1721, Mar. 2020
- [49] Jie Chen, Lin Zhang, Ying-Chang Liang, and **Shaodan Ma**, "Optimal Resource Allocation for Multicarrier NOMA in Short Packet Communications", *IEEE Transactions on Vehicular Technology*, vol. 69(2), pp. 2141-2156, Feb. 2020
- [50] Zheng Shi, Chenmeng Zhang, Yaru Fu, Hong Wang, Guanghua Yang and **Shaodan Ma**, "Achievable Diversity Order of HARQ-Aided Downlink NOMA Systems", *IEEE Transactions on Vehicular Technology*, vol. 69(1), pp. 471-487, Jan. 2020
- [51] Junjuan Feng, **Shaodan Ma**, Sonia Aissa, and Minghua Xia, "Two-Way Massive MIMO Relaying Systems with Non-Ideal Transceivers: Joint Power and Hardware Scaling", *IEEE Transactions on Communications*, vol. 67(12), pp. 8273-8289, Dec. 2019
- [52] Zheng Shi, Theodoros Tsiftsis, Weiqiang Tan, Guanghua Yang, **Shaodan Ma**, and Mohamed-Slim Alouini, "Effective Capacity for Renewal Service Processes with Applications to HARQ Systems", *IEEE Transactions on Communications*, vol. 67(9), pp. 6556-6571, Sep. 2019
- [53] Xianda Wu, Guanghua Yang, Fen Hou and **Shaodan Ma**, "Low-Complexity Downlink Channel Estimation for Millimeter-Wave FDD Massive MIMO Systems", *IEEE Wireless Communications Letters*, vol. 8(4), pp. 1103-1107, August 2019
- [54] Mengnan Jian, Feifei Gao, Zhi Tian, Shi Jin, and **Shaodan Ma**, "Angle-Domain aided UL/DL Channel Estimation for Wideband mmWave Massive MIMO Systems with Beam Squint", *IEEE Transactions on Wireless Communications*, vol. 18(7), pp. 3515-3527, July 2019
- [55] Shiqi Gong, **Shaodan Ma**, Chengwen Xing and Guanghua Yang, "Optimal Beamforming and Time Allocation for Partially Wireless Powered Sensor Networks with Downlink SWIPT", *IEEE Transactions on Signal Processing*, vol.67(12), pp. 3197-3212, June 2019
- [56] Zhe Ma, Chen He, Yanyi Rao, Jing Jiang, **Shaodan Ma**, Feifei Gao and Ling Xing, "Time- and Power-Splitting Strategies for Ambient Backscatter System", *IEEE Access*, vol. 7, pp. 40068-40077, April 2019

- [57] Shiqi Gong, Chengwen Xing, **Shaodan Ma**, Zhongshan Zhang, and Zesong Fei, "Secure Wideband Beamforming Design for Two-Way MIMO Relaying Systems", *IEEE Transactions on Vehicular Technology*, vol.68(4), pp. 3472-3486, April 2019
- [58] Zheng Shi, **Shaodan Ma**, Hesham ElSawy, Guanghua Yang, and Mohamed-Slim Alouini, "Cooperative HARQ Assisted NOMA Scheme in Large-scale D2D Networks", *IEEE Transactions on Communications*, vol. 66(9), pp. 4286-4302, Sep. 2018
- [59] Shuai Wang, **Shaodan Ma**, Chengwen Xing, Jianping An, and H. Vincent Poor, "Optimal Training Design for MIMO Systems with General Power Constraints", *IEEE Transactions on Signal Processing*, vol. 66(14), pp. 3649-3664, July 2018
- [60] Bin Xia, Jinglun Wang, Kexin Xiao, Yichen Gao, Yao Yao, and **Shaodan Ma**, "Outage Performance Analysis for the Advanced SIC Receiver in Wireless NOMA Systems", *IEEE Transactions on Vehicular Technology*, vol. 67(7), pp. 6711 – 6715, July 2018
- [61] Kexin Xiao, Bin Xia, Zhiyong Chen, Baicen Xiao, Dageng Chen, and **Shaodan Ma**, "On Capacity-based Codebook Design and Advanced Decoding for Sparse Code Multiple Access Systems", *IEEE Transactions on Wireless Communications*, vol. 17(6), pp. 3834-3849, June 2018
- [62] Junjuan Feng, **Shaodan Ma**, Guanghua Yang and H. Vincent Poor, "Impact of Antenna Correlation on Full-Duplex Two-Way Massive MIMO Relaying Systems", *IEEE Transactions on Wireless Communications*, vol. 17(6), pp. 3572 – 3587, June 2018
- [63] Zheng Shi, Liyang Wang, **Shaodan Ma**, Guanghua Yang and Yao Yao, "Goodput Maximization of HARQ-IR over Arbitrarily Correlated Rician Fading Channels", *IEEE Access*, vol. 6, pp. 28903 – 28911, June 2018
- [64] Zheng Shi, **Shaodan Ma**, Guanghua Yang, and Mohamed-Slim Alouini, "Energy-Efficient Optimization for HARQ Schemes over Time-Correlated Fading Channels", *IEEE Transactions on Vehicular Technology*, vol. 67(6), pp. 4939 – 4953, June 2018
- [65] Jian Du, **Shaodan Ma**, Yik-Chung Wu, Soumya Kar, and Jose Moura, "Convergence Analysis of Distributed Inference with Vector-Valued Gaussian Belief Propagation", *Journal of Machine Learning Research*, vol. 18, pp. 1-38, April 2018
- [66] Jinglun Wang, Bin Xia, Kexin Xiao, Yichen Gao and **Shaodan Ma**, "Outage Performance Analysis for Wireless Non-orthogonal Multiple Access Systems", *IEEE Access*, vol. 6, pp. 3611 – 3618, Feb. 2018

**Conference Papers in the past three years:**

- [1] Huan Zhang, Zhengtao Liao, Zheng Shi, Guanghua Yang, Qingping Dou, and **Shaodan Ma**, "Outage Performance Analysis of Type-I HARQ Aided V2V Communications", Proceedings of 2022 *IEEE/CIC International Conference on Communications in China (ICCC)*, 11–13 August 2022, Foshan City, China
- [2] Jian Wang, Qing Xue, Yao Sun, Gang Feng, Lun Tang, and **Shaodan Ma**, "Beam Management in Ultra-dense Millimeter Wave Network via Federated Learning", Proceedings of 2021 *IEEE Global Communications Conference (GlobeCom'2021)*, 7-11 Dec., 2021, Madrid, Spain
- [3] Weihua Xu, Feifei Gao, Jianhua Zhang, Xiaoming Tao, Ahmed Alkhateeb and **Shaodan Ma**, "Deep Learning Based Channel Covariance Matrix Estimation with Scene Images", Proceedings of 2021 *IEEE/CIC International Conference on Communications in China (ICCC)*, 28-30 July, 2021, Xiamen, China
- [4] Qi Cao, Huan Zhang, Zheng Shi, Hong Wang, Yaru Fu, Guanghua Yang, and **Shaodan Ma**, "Outage Performance Analysis of HARQ-Aided Multi-RIS Systems", Proceedings of 2021 *IEEE Wireless Communications and Networking Conference (WCNC)*, 29 March – 1 April, 2021, Nanjing, China
- [5] Huan Zhang, Guanghua Yang, Zheng Shi, **Shaodan Ma** and Hong Wang, "Outage Performance Analysis of Full-Correlated Rayleigh MIMO Channels", Proceedings of 2020 *IEEE/CIC International Conference on Communications in China (ICCC)*, 9-11 August, 2020, Virtual Conference
- [6] Jun Zhang, Jie Liu, **Shaodan Ma**, Chao-Kai Wen and Shi Jin, "Transmitter Design for Large Intelligent Surface-Assisted MIMO Wireless Communication with Statistical CSI", accepted by 2020 *IEEE International*

*Conference on Communications (ICC) Workshop - Scalable Massive MIMO Technologies for beyond 5G*, 7-11 June 2020, Dublin, Ireland

- [7] Jie Chen, Lin Zhang, Ying-Chang Liang, and **Shaodan Ma**, "Effective-Throughput Maximization for Multicarrier NOMA in Short-Packet Communications", Proceedings of *2019 IEEE Global Communications Conference (GlobeCom'2019)*, Dec 9-13, 2019, Waikoloa, HI, USA
- [8] Zheng Shi, Chenmeng Zhang, Yaru Fu, Hong Wang, Guanghua Yang and **Shaodan Ma**, "Diversity Analysis of HARQ-CC-Aided NOMA", Proceedings of *2019 IEEE Global Communications Conference (GlobeCom'2019)*, Dec 9-13, 2019, Waikoloa, HI, USA
- [9] Zheng Shi, Theodoros Tsiftsis, Weiqiang Tan, Guanghua Yang, **Shaodan Ma** and Mohamed-Slim Alouini, "Effective Capacity Analysis for VR-HARQ Systems", Proceedings of *The 8th IEEE/CIC International Conference on Communications in China (ICCC2019)*, 11-13 August, 2019, Changchun, China
- [10] Zheng Shi, Guanghua Yang, Yaru Fu, Hong Wang and **Shaodan Ma**, "Performance Analysis of MIMO-NOMA Systems with Randomly Deployed Users", Proceedings of *2018 IEEE Global Communications Conference (GlobeCom'2018)*, Dec 9-13, 2018, Abu Dhabi, UAE
- [11] Shiqi Gong, **Shaodan Ma**, Xing Wei, Chengwen Xing and Guanghua Yang, "Transmit-Receive Beampattern Optimization for Polarization-Subarray-Based Frequency Diverse Array Radar", Proceedings of *The 19th IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC 2018)*, June 25-28, 2018, Kalamata, Greece
- [12] Jian Du, **Shaodan Ma**, and Guanghua Yang, "Distributed Frequency Offsets Estimation", Proceedings of *The 19th IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC 2018)*, June 25-28, 2018, Kalamata, Greece

#### **4. PROFESSIONAL SERVICES**

- [1] **Editor**, *IEEE Transactions on Communications*, April 2018 – present
- [2] **Editor**, *IEEE Transactions on Wireless Communications*, Feb. 2018 – present
- [3] **Editor**, *IEEE Wireless Communications Letters*, April 2017 – Nov. 2022
- [4] **Lead Co-Chair**, Signal Processing for Communications Symposium in 2021 IEEE International Conference on Communications (**ICC'2021**), Montreal, Canada, May 2021
- [5] **Technical Program Co-Chair**, 2020 IEEE International Conference on Signal Processing, Communications and Computing (**ICSPCC 2020**), Macau SAR, China, Aug., 2020
- [6] **Co-Chair**, Wireless Communications Symposium in International Conference on Computing, Networking and Communications (**ICNC'2020**), Big Island, Hawaii, USA, Feb. 2020
- [7] **Co-Chair**, Internet of Things Symposium in the 8th IEEE/CIC International Conference on Communications in China (**ICCC'2019**), Changchun, China, Aug., 2019
- [8] **Co-Chair**, Symposium for Selected Areas in Communications (Millimeter Wave Communications Track) in 2019 IEEE International Conference on Communications (**ICC'2019**), Shanghai, China, May, 2019
- [9] **Co-Chair**, Signal Processing Symposium in The Ninth International Conference on Wireless Communications and Signal Processing (**WCSP'2017**), Nanjing, China, Oct., 2017
- [10] **Co-Chair**, Wireless Communications Symposium in 2016 IEEE Global Communications Conference (**GlobeCom'2016**), Washington DC, DC, USA, Dec., 2016
- [11] **Co-Chair**, Signal Processing for Communications Symposium in 2016 IEEE International Conference on Communications (**ICC'2016**), Kuala Lumpur, Malaysia, June 2016
- [12] **Chair**, Track on Wireless Communication & Networks in 2015 IEEE **TENCON**, Macau, Nov., 2015
- [13] **Co-Chair**, Track on Fundamentals and PHY in 2015 IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (**PIMRC'2015**), Hong Kong, Sep. 2015



- [14] **Co-Chair**, Track on SIP for communications and networking in the Third IEEE China Summit and International Conference on Signal and Information Processing (**ChinaSIP 2015**), Chengdu, China, July 2015
- [15] **Co-Chair**, International Workshop on Emerging Technologies towards Heterogeneous Wireless Networks and 5G Communications, 21 Nov. 2014, Macao
- [16] Technical Program Committee member, IEEE GlobeCom, ICC, WCNC, PIMRC, VTC, etc.