Qing Shen

Curriculum Vitae

Personal Information

Qing Shen **Professor** and **Ph.D. Supervisor** with Beijing Institute of Technology, China
Gender: Male Birth: 05/05/1988
Email: qing-shen@outlook.com; q.shen@bit.edu.cn
Website: https://qing-shen.github.io/
Google Scholar Profile: https://scholar.google.com/citations?user=Znthsr0AAAAJ&hl=en

Education

Ph.D.	Signal and Information Processing, Beijing Institute of Technology, China National key disciplines of first class **Dissertation**: Underdetermined Direction of Arrival Estimation Based on Sparse Signal Reconstruction **(Two Excellent Ph.D. Dissertation Awards)**	09/2009-07/2016
B.E.	Information Engineering, Beijing Institute of Technology, China Top 3% among all students	09/2005-07/2009

Working Experience

Professor	School of Information and Electronics, Beijing Institute of Technology, China	04/2024-present
Associate Professor	School of Information and Electronics, Beijing Institute of Technology, China	07/2019-04/2024
Post-Doctoral Research Fellow	School of Information and Electronics, Beijing Institute of Technology, China Working in the area of Radar system design and underdetermined direction of arrival (DOA) estimation.	01/2017-07/2019
Visiting Research Associate	Dept. of Electronic and Electrical Engineering, University of Sheffield, UK Working in the area of distributed sensor array signal processing.	03/2018-03/2019
Visiting Researcher	Dept. of Electronic and Electrical Engineering, University of Sheffield, UK Working in the area of compressive sensing based underdetermined direction of arrival (DOA) estimation. Sponsored by China Scholarship Council.	10/2013-10/2015

Research Areas

- Sensor array signal processing, statistical signal processing, adaptive signal processing, and their various applications to acoustics, radar, sonar, and wireless communications.

Skills

- Software development with MATLAB.
- Software development for Field Programmable Gate Array (FPGA) using VHDL/Verilog language.
- Software development for Microblaze, ARM, and Digital Signal Processor (DSP) using C language.

Awards

- **Special Award (as the primary advisor)** of the 2025 "Challenge Cup" China Youth Science and Technology Innovation "Open Bidding for Selecting the Best Candidates " Competition. 11/2025
- **Second Award (as the primary advisor)** of the 2025 "Challenge Cup" China Youth Science and Technology Innovation "Open Bidding for Selecting the Best Candidates " Competition. 11/2025
- **Young Scientist Award**, 2021 IEEE International Conference on Electronics Technology (ICET 2021) 05/2021
- **Second-Class Prize of the National Award for Technological Invention**, the State Council of the People's Republic of China, China 12/2019
  The most important award for all researchers in China.
- **First-Class Prize of the Science and Technology (Technological Invention) Award**, Chinese Institute of Electronics, China. 11/2018
- **Excellent Ph.D. Dissertation Award**, Chinese Institute of Electronics, China 12/2016
  The most important award for all Ph.D. students in China.
- **Excellent Ph.D. Dissertation Award**, Beijing Institute of Technology, China 07/2016
- **Second-Class Prize of the Ministerial Level Science and Technology Progress Award**, China 12/2014

Journal Papers

[1] Lei Liu, Shiwei Ren, Xiangnan Li, **Qing Shen**, Guiyu Wang, Weijiang Wang. “Gridless wideband DOA estimation using group-sparse weighted atomic norm minimization,” *IEEE Transactions on Aerospace and Electronic Systems*, to appear.

[2] Hantian Wu, **Qing Shen**, Wei Liu, Junwei Zhou, Wei Cui. “Bearing-only localization for wideband off-grid sources with distributed sensor array networks,” *IEEE Sensors Journal*, to appear.

[3] Wenmeng Xiong, Maoshen Jia, Jing Zhou, Jing Zhang, **Qing Shen**. “Joint learning for simultaneous DOA estimation and speech enhancement in noisy and reverberant environments,” *IEEE Transactions on Audio, Speech and Language Processing*, vol. 34, pp. 596-611, 2026.

[4] Wei Liu, Maria Sabrina Greco, Rodrigo C. de Lamare, **Qing Shen**, Mojtaba Soltanalian, Pu Wang. “Guest Editorial: Special issue on low-bit-resolution signal processing: Algorithms, implementations, and applications,” *IEEE Journal of Selected Topics in Signal Processing*, vol. 19, no. 6, pp. 874-880, 2025.

[5] Tianyuan Gu, Xuejing Zhang, Kejiang Wu, Kangning Li, Wei Cui, **Qing Shen**. "A novel method for beampattern synthesis with auto-determined minimum mainlobe width," *IEEE Transactions on Antennas and Propagation*, vol. 73, no. 12, pp. 10901-10906, Dec. 2025.

[6] Kangning Li, **Qing Shen**, Wei Liu, Zexiang Zhang, Tianyuan Gu, Wei Cui, "Underdetermined DOA estimation of quasi-stationary signals via virtual array interpolation," *Signal Processing*, vol. 237, 110076, Dec. 2025.

[7] Yangfang Li,, Wei Li, Jing Tian, **Qing Shen**, "Object tracking in satellite videos: a survey," Chinese Space Science and Technology, vol. 45, no. 5, pp. 60-74, 2025.

[8] Kangning Li, **Qing Shen**, Wei Liu, Kejiang Wu, Wei Cui, "Underdetermined DOA estimation of wideband quasi-stationary signals via tensor completion," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 61, no. 5, pp. 15122-15129, Oct. 2025.

[9] Zexiang Zhang, **Qing Shen**, Wei Liu, Kangning Li, Kejiang Wu, Wei Cui, "Shift-based symmetric coprime planar arrays with increased degrees of freedom and reduced mutual coupling," *IEEE Transactions on Vehicular Technology*, vol. 74, no. 8, pp. 12222-12237, Aug. 2025.

[10] Hua Chen, Haodong Guo, Wei Liu, **Qing Shen**, Gang Wang, Hing Cheung So, "Fourth-order sparse array design from a sum-difference co-array perspective," *IEEE Transactions on Signal Processing*, vol. 73, pp. 2243-2254, 2025.

[11] Hantian Wu, **Qing Shen**, Junwei Zhou, Wei Liu, Wei Li, Wei Cui, "Group sparsity based wideband 3D localization using a distributed linear array network," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 61, no. 2, pp. 5454-5460, Apr. 2025.

[12] Kangning Li, **Qing Shen**, Wei Liu, Zexiang Zhang, Yunpeng Zhao, Wei Li, Wei Cui, "Underdetermined DOA estimation of quasi-stationary signals exploiting frequency pairs," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 61, no. 2, pp. 2828-2842, Apr. 2025.

[13] Hanzheng Wang, Wei Li, Xiang-Gen Xia, Qian Du, Jing Tian, **Qing Shen**, "Transformer-based band regrouping with feature refinement for hyperspectral object tracking," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 62, Art no. 5522314, 2024.

[14] Zexiang Zhang, **Qing Shen**, Wei Liu, Wei Cui, "2-D DOA estimation based on sparse linear arrays exploiting arbitrary linear motion," *IEEE Transactions on Vehicular Technology*, vol. 73, no. 9, pp. 13248 - 13262, Sep. 2024.

[15] Min Wang, **Qing Shen**, Wei Liu, Wei Cui, "Wideband DOA Estimation with frequency decomposition via a unified GS-WSpSF framework," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 60, no. 2, pp. 2453-2460, 2024.

[16] Hua Chen, Hongguang Lin, Wei Liu, Qing Wang, **Qing Shen**, Gang Wang, "Augmented multi-subarray dilated nested array with enhanced degrees of freedom and reduced mutual coupling," *IEEE Transactions on Signal Processing*, vol. 72, pp. 1387-1399, 2024.

[17] Kejiang Wu, **Qing Shen**, Wei Cui, "3-D tomographic circular SAR imaging of targets using scattering phase correction," *IEEE Transactions on Geoscience and Remote Sensing*, 2023, vol. 61, pp. 1-14.

[18] Zixiang Yang, **Qing Shen**, Wei Liu, Yonina C. Eldar, Wei Cui, "High-order cumulants based sparse array design via fractal geometries—Part II: Robustness and mutual coupling," *IEEE Transactions on Signal Processing*, vol. 71, pp. 343-357, 2023.

[19] Zixiang Yang, **Qing Shen**, Wei Liu, Yonina C. Eldar, Wei Cui, "High-order cumulants based sparse array design via fractal geometries—Part I: Structures and DOFs," *IEEE Transactions on Signal Processing*, vol. 71, pp. 327-342, 2023.

[20] Wei Liu, Arjuna Madanayake, Lei Yu, **Qing Shen**, Jingjing Cai, "Recent advances in design and signal processing for antenna arrays 2020 (Editorial)," *International Journal of Antennas and Propagation*, vol. 2023, Article ID 9843456, 2023.

[21] Zixiang Yang, **Qing Shen**, Wei Liu, Wei Cui, "A sum-difference expansion scheme for sparse array construction based on the fourth-order difference co-array," *IEEE Signal Processing Letters*, vol. 29, pp. 2647-2651, 2022.

[22] Hantian Wu, **Qing Shen**, Wei Cui, Wei Liu, "DOA estimation with nonuniform moving sampling scheme based on a moving platform," *IEEE Signal Processing Letters*, vol. 28, pp. 1714-1718, 2021.

[23] Yibao Liang, Wei Cui, **Qing Shen**, Wei Liu, Siliang Wu, "Cramér-Rao bound analysis of underdetermined wideband DOA estimation under the subband Model via Frequency Decomposition," *IEEE Transactions on Signal Processing*, vol. 69, pp. 4132-4148, 2021.

[24] Yibao Liang, Wei Cui, **Qing Shen**, Wei Liu, Hantian Wu, "Cramér-Rao bound for DOA estimation exploiting multiple frequency pairs," *IEEE Signal Processing Letters*, vol. 28, pp. 1210-1214, 2021.

[25] **Qing Shen**, Wei Liu, Li Wang, Yin Liu, "Group sparsity based localization for far-field and near-field sources based on distributed sensor array networks", *IEEE Transactions on Signal Processing*, vol.68, pp. 6493-6508, 2020.

[26] Yibao Liang, Wei Liu*, **Qing Shen**, Wei Cui, Siliang Wu, "A review of closed-form Cramér-Rao bounds for DOA estimation in the presence of Gaussian noise under a unified framework," *IEEE Access*, vol.8, pp. 175101-175124, 2020.

[27] Wei Cui, Shuang Wu, **Qing Shen**, Jing Tian, Siliang Wu, Xiang-Gen Xia, "Parameter estimation method for radar maneuvering target with arbitrary migrations," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 55, no. 5, pp. 2195-2213, Oct. 2019.

[28] Wei Cui, **Qing Shen**, Wei Liu, Siliang Wu, "Low complexity DOA estimation for wideband off-grid sources based on re-focused compressive sensing with dynamic dictionary," *IEEE Journal of Selected Topics in Signal Processing*, vol. 13, no. 5, pp. 918-930, Sep. 2019.

[29] **Qing Shen**, Wei Liu, Wei Cui, Siliang Wu, Piya Pal, "Simplified and enhanced multiple level nested arrays exploiting high order difference co-arrays," *IEEE Transactions on Signal Processing*, vol. 67, no. 13, pp. 3502-3515, Jul. 2019.

[30] Ahsan Raza, Wei Liu, **Qing Shen**, "Thinned coprime array for second-order difference co-array generation with reduced mutual coupling," *IEEE Transactions on Signal Processing*, vol. 67, no. 8, pp. 2052-2065, Apr. 2019.

[31] Junwei Zhou, **Qing Shen**, Wei Cui, "A novel carrier leakage cancellation algorithm for multiple target detection," *Chinese Journal of Electronics*, vol. 28, no. 1, pp. 100–106, Jan. 2019.

[32] **Qing Shen**, Wei Liu, Li Wang, Yin Liu, "Adaptive beamforming for target detection and surveillance based on distributed unmanned aerial vehicle platforms," *IEEE Access*, vol. 6, pp. 60812-60823, 2018.

[33] Tong Qian, Wei Cui, **Qing Shen**, "Sparse reconstruction method for DOA estimation based on dynamic dictionary and negative exponent penalty," *Chinese Journal of Electronics*, vol. 27, no. 2, pp. 386-392, Mar. 2018.

[34] Jinzhi Xiang, Wei Cui, **Qing Shen**, "Flexible and accurate frequency estimation for complex sinusoid signal by interpolation using DFT samples," *Chinese Journal of Electronics*, vol. 27, no. 1, pp. 109-114, Jan. 2018.

[35] Shuang Wu, Wei Cui, **Qing Shen**, Jiangang Hou, Siliang Wu, "Efficient parameter estimation method for maneuvering targets in discrete randomly-modulated radar," *Digital Signal Processing*, vol. 67, pp.91-106, Aug. 2017.

[36] Jingjing Cai, Wei Liu, Ru Zong, **Qing Shen**, "An expanding and shift scheme for constructing fourth-order difference co-arrays," *IEEE Signal Processing Letters*, vol. 24, no. 4, pp. 480-484, Apr. 2017.

[37] **Qing Shen**, Wei Liu, Wei Cui, Siliang Wu, Yimin D. Zhang, Moeness G. Amin, "Focused compressive sensing for underdetermined wideband DOA estimation exploiting high-order difference coarrays," *IEEE Signal Processing Letters*, vol. 24, no. 1, pp. 86-90, Jan. 2017.

[38] **Qing Shen**, Wei Cui, Wei Liu, Siliang Wu, Yimin D. Zhang, Moeness G. Amin, "Underdetermined wideband DOA estimation of off-grid sources employing the difference co-array concept," *Signal Processing*, vol. 130, pp. 299-304, Jan. 2017.

[39] **Qing Shen**, Wei Liu, Wei Cui, Siliang Wu, "Underdetermined DOA estimation under the compressive sensing framework: A review," *IEEE Access*, 2016, 4: 8865-8878.

[40] **Qing Shen**, Wei Liu, Wei Cui, Siliang Wu, "Extension of co-prime arrays based on the fourth-order difference co-array concept," *IEEE Signal Processing Letters*, vol. 23, no. 5, pp. 615-619, May 2016.

[41] **Qing Shen**, Wei Liu, Wei Cui, Siliang Wu, Yimin D. Zhang, Moeness G. Amin, "Low complexity direction-of-arrival estimation based on wideband co-prime arrays," *IEEE/ACM Transactions on Audio, and Speech, Language Processing*, vol. 23, no. 9, pp. 1445–1456, Sep. 2015.

[42] Jing Tian, Wei Cui, **Qing Shen**, Zixiang Wei, Siliang Wu, "High-speed maneuvering target detection approach based on joint RFT and keystone transform," *Science China Information Sciences*, vol. 56, no. 6, pp. 1-13, 2013.

[43] Wei Cui, Xinguo Zhu, **Qing Shen**, "A new parameter design method for 3rd-order range tracking loop," *Acta Armamentar II*, vol. 31, no. 6, pp. 807-810, 2010.

Conference Papers

[1] Yunpeng Zhao, **Qing Shen**, Jing Tian, Wei Liu. "Connectivity-probability-driven multi-RIS placement in irregular regions," in *Proc. IEEE Workshop on Signal Processing Systems* (SiPS), Hong Kong, Nov. 2025.

[2] Chenxi Liao, **Qing Shen**, Qining Feng, Min Wang, Wei Liu. "A two-step wideband DOA estimation method based on one-bit measurements," in *Proc. IEEE Workshop on Signal Processing Systems* (SiPS), Hong Kong, Nov. 2025.

[3] Youhao Kong, **Qing Shen**, Qining Feng, Chenxi Liao, Wei Liu. "Tensorial hankel reconstruction for multi-frequency sparse array with sensor failure," in *Proc. IEEE Workshop on Signal Processing Systems* (SiPS), Hong Kong, Nov. 2025.

[4] Yizhe Wang, Qining Feng, **Qing Shen**, Wei Liu, Hantian Wu. "Ziv-Zakai bound for wideband two-dimensional DOA estimation with a single source," in *Proc. IEEE Workshop on Signal Processing Systems* (SiPS), 2025.

[5] Yuzheng Bao, **Qing Shen**, Zejun Yang, Zheng Fu, Li Shen, Wei Liu. "Model-based deep learning for underdetermined DOA estimation exploiting high-order difference co-arrays," in *Proc. IEEE Workshop on Signal Processing Systems* (SiPS), Hong Kong, Nov. 2025.

[6] Jiaming Yang, **Qing Shen**, Kangning Li, Tianyuan Gu and Yuzheng Bao. "Blind calibration against mutual coupling and parameter estimation of non-circular sources with polarization sensitive arrays," in *Proc. IEEE Workshop on Signal Processing Systems* (SiPS), Hong Kong, Nov. 2025.

[7] Tianyuan Gu, Wenbo Li, Kejiang Wu, **Qing Shen**. "Optimization of mainlobe width and array geometry via mixed-integer programming," in *Proc. IEEE Workshop on Signal Processing Systems* (SiPS), Hong Kong, Nov. 2025.

[8] Yuxiang Jiang, Qining Feng, Chenxi Liao, **Qing Shen**. "Matched filtering based wideband DOA estimation method for active sensing," in *Proc. IEEE Workshop on Signal Processing Systems* (SiPS), Hong Kong, Nov. 2025.

[9] Zejun Yang, Yuzheng Bao, **Qing Shen**, "Model-based deep learning for multi-source 2D-DOA estimation with uniform circular array," in *Proc. IEEE Workshop on Signal Processing Systems* (SiPS), Hong Kong, Nov. 2025.

[10] Zexiang Zhang, **Qing Shen**, Wei Liu, Jiaming Yang, Chenxi Liao, Yizhe Wang, "Explicit asymptotic performance analysis of ESPRIT-type methods exploiting the difference co-array concept," in *Proc. European Signal Processing Conference (EUSIPCO)*, Isola delle Femmine, Palermo, Italy, Sep. 2025.

[11] Zijun Zhang, Weiqi Zhao, **Qing Shen**, Wei Cui, Kejiang Wu. "Fast 3-D reconstruction of complex scenario using mmWave MIMO ArcSAR," in *Proc. of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, Brisbane, Australia, Aug. 2025.

[12] Chenhao Zhai, Youhao Kong, Chenxi Liao, **Qing Shen**, "Optimized interpolation-based methods with inverse filtering for time delay estimation," in *Proc. of the IEEE International Conference on Electronics Technology (ICET)*, Chengdu, China, May 2025.

[13] Kangning Li, **Qing Shen**, Jiaming Yang, "A self-calibration method for DOA estimation of quasi-stationary signals with a partly calibrated array," in *Proc. of the IEEE International Conference on Electronics Technology (ICET)*, Chengdu, China, May 2025.

[14] Min Wang, Chenxi Liao, Yizhe Wang, Bohong Shu, **Qing Shen**, "Efficient underdetermined wideband DOA estimation based on a uniform linear array," in *Proc. of the IEEE International Conference on Signal, Information and Data Processing (ICSIDP)*, Zhuhai, China, Nov. 2024.

[15] Jianbin Ye, Yunpeng Zhao, **Qing Shen**, "An efficient multi-antenna wideband digital channelization structure for FPGA implementation," in *Proc. of the IEEE International Conference on Signal, Information and Data Processing (ICSIDP)*, Zhuhai, China, Nov. 2024.

[16] Yizhe Wang, Yuning Peng, Chenxi Liao, Min Wang, **Qing Shen**, "Ziv-Zakai bound for wideband single-source direction-of-arrival estimation," in *Proc. of the IEEE International Conference on Signal, Information and Data Processing (ICSIDP)*, Zhuhai, China, Nov. 2024.

[17] Jiaming Yang, Zheng Fu, Zexiang Zhang, Aoxuan Zhou, **Qing Shen**, "Calibration-based 2-D DOA estimation exploiting 2qth-order cumulants for polarimetric arrays," in *Proc. of the IEEE International Conference on Signal, Information and Data Processing (ICSIDP)*, Zhuhai, China, Nov. 2024.

[18] Tianyuan Gu, Bohong Shu, Yuxiang Jiang, Jiaming Yang, **Qing Shen**, "Sparse array optimization for beampattern synthesis with low-bit phase quantization," in *Proc. of the IEEE International Conference on Signal, Information and Data Processing (ICSIDP)*, Zhuhai, China, Nov. 2024.

[19] Zexiang Zhang, Qing Shen, Wei Liu, Kangning Li, Kejiang Wu, Wei Cui, "Shift-based symmetric coprime planar arrays for direction finding with enhanced uniform degrees of freedom," in *Proc. of the IEEE/CIC International Conference on Communications in China*, Hangzhou, China, Aug. 2024.

[20] Yuhang Li, Hantian Wu, Jiangang Hou, **Qing Shen**, "2-D DOA estimation with circular arrays based on the fourth-order difference co-array," in *Proc. of the IEEE International Conference on Electronics Technology (ICET)*, Chengdu, China, May 2024.

[21] Yiwei Liu, Yunpeng Zhao, Yuzheng Bao, Jiangang Hou, **Qing Shen**, "Interpolation-based time delay estimation for moving targets," in *Proc. of the IEEE International Conference on Electronics Technology (ICET)*, Chengdu, China, May 2024.

[22] Kangning Li, **Qing Shen**, Wei Liu, Min Wang, "Wideband DOA estimation based on tensor completion and decomposition," in *Proc. of the IEEE International Symposium on Circuits and Systems (ISCAS)*, Singapore, May 2024.

[23] Hantian Wu, **Qing Shen**, Wei Liu, Zheng Fu, Chenxi Liao, "2-D wideband DOA estimation with circular arrays based on the difference co-array concept," in *Proc. of the IEEE International Symposium on Circuits and Systems (ISCAS)*, Singapore, May 2024.

[24] Haodong Guo, Hua Chen, Hongguang Lin, Wei Liu, **Qing Shen**, Gang Wang, "A new fourth-order sparse array generator based on sum-difference co-array analysis," in *Proc. of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Seoul, Korea, April 2024.

[25] Yue Ma, Yan Liu, **Qing Shen**, "Off-grid chirp-rate estimation for LFM signals based on dynamic dictionary," in *Proc. IEEE International Conference on Electronics Technology (ICET)*, Chengdu, China, May 2023.

[26] Hantian Wu, **Qing Shen**, Wei Liu, Yibao Liang, "Underdetermined two-dimensional localization for wideband sources based on distributed sensor array networks," in *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Singapore, May 2022.

[27] Chun Zhu, Yuwei Wang, **Qing Shen**, "Two-dimensional DOA estimation based on two-parallel arrays exploiting nonuniform array motions," in *Proc. IEEE International Conference on Electronics Technology (ICET)*, Chengdu, China, May 2022.

[28] Xiang Zhang, Dali Liu, Chun Zhu, **Qing Shen**, "Generalized non-iterative time delay estimation based on Taylor interpolation model," in *Proc. CIE International Conference on Radar*, Haikou, China, Dec. 2021.

[29] Yilin Huang, Dali Liu, Shilei Yuan, **Qing Shen**, "A low-complexity migration compensation method based on long-term integration," in *Proc. CIE International Conference on Radar*, Haikou, China, Dec. 2021.

[30] Zixiang Yang, **Qing Shen**, Wei Liu, Yonina C. Eldar, Wei Cui, "Extended Cantor arrays with hole-free fourth-order difference co-arrays," in *Proc. IEEE International Symposium on Circuits and Systems (ISCAS)*, Daegu, Korea, May 2021.

[31] Yanxin Li, Qiaodi Wang, **Qing Shen**, Wei Cui, "An improved multiple threshold decision method based on long-term integration," in *Proc. IEEE International Conference on Electronics Technology (ICET)*, Chengdu, China, May 2021.

[32] Yibao Liang, Wei Liu, **Qing Shen**, Wei Cui, Siliang Wu, "On the Cramer-Rao bound and the number of resolvable sources in the presence of nonuniform noise for underdetermined DOA estimation," in *Proc. IEEE International Conference on Signal Processing (ICSP)*, Beijing, China, Oct. 2020, pp. 93-98.

[33] Hantian Wu, **Qing Shen**, Wei Liu, Wei Cui, "Underdetermined low-complexity wideband DOA estimation with uniform linear arrays," in *Proc. IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM)*, Hangzhou, China, Jun. 2020.

[34] Yechen Li, Jie Yao, **Qing Shen**, Wei Cui, "Dual-channel monopulse angle estimation method for weak target based on reference signal," in *Proc. IEEE International Conference on Signal, Information and Data Processing (ICSIDP)*, Chongqing, China, Dec. 2019.

[35] Yibao Liang, **Qing Shen**, Wei Cui, Wei Liu, "Cramer-Rao bound for wideband DOA estimation with uncorrelated sources," in *Proc. IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, Ottawa, Canada, Nov. 2019.

[36] **Qing Shen**, Wei Liu, Li Wang, Yin Liu, "Group sparsity based target localization for distributed sensor array networks," in *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Brighton, UK, May 2019, pp. 4190-4194..

[37] Ahsan Raza, Wei Liu, **Qing Shen**, "Displaced thinned coprime arrays with an additional sensor for DOA estimation," in *Proc. IEEE International Symposium on Signal Processing and Information Technology (ISSPIT)*, Louisville, Kentucky, USA, Dec. 2018, pp. 95-100.

[38] **Qing Shen**, Wei Liu, Li Wang, Yin Liu, "Joint adaptive beamforming based on distributed moving platforms", in *Proc. IEEE International Conference on Digital Signal Processing (DSP)*, Shanghai, China, Nov. 2018.

[39] Ahsan Raza, Wei Liu, **Qing Shen**, "Thinned coprime arrays for DOA estimation", in *Proc. European Signal Processing Conference (EUSIPCO)*, Kos Island, Greece, Aug. 2017, pp. 415–419. (Oral Presentation)

[40] Jinzhi Xiang, **Qing Shen**, Wei Cui, "A novel single tone frequency estimation by interpolation using DFT samples with zero-padding", in *Proc. IEEE International Conference on Signal Processing*, Chengdu, China, Nov. 2016, pp. 277-281.

[41] **Qing Shen**, Wei Liu, Wei Cui, Siliang Wu, "Extension of nested arrays with the fourth-order difference co-array enhancement," in *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Shanghai, China, Mar. 2016, pp. 2991-2995.

[42] **Qing Shen**, Wei Liu, Wei Cui, Siliang Wu, Yimin D. Zhang, Moeness G. Amin, "Wideband DOA estimation for uniform linear arrays based on the co-array concept," in *Proc. European Signal Processing Conference (EUSIPCO)*, Nice, France, Sep. 2015, pp. 2885-2889.

[43] **Qing Shen**, Wei Liu, Wei Cui, Siliang Wu, "Low-complexity compressive sensing based DOA estimation for co-prime arrays," in *Proc. IEEE International Conference on Digital Signal Processing*, Hong Kong, China, Aug. 2014, pp. 754-758.

[44] **Qing Shen**, Wei Liu, Wei Cui, Siliang Wu, Yimin D. Zhang, Moeness G. Amin, "Group sparsity based wideband DOA estimation for co-prime arrays," in *Proc. IEEE China Summit and International Conference on Signal and Information Processing (ChinaSIP)*, Xi'an, China, Jul. 2014, pp. 252-256.

[45] **Qing Shen**, Wei Cui, Jiangang Hou, Siliang Wu, Hongbao Li, "Carrier leakage cancellation in pulse Doppler radar applied for single target detection," in *Proc. IET International Radar Conference*, Xi'an, China, 2013, pp. 972-976.

Patents

- **More than 50 Chinese patents** published in total.

Professional Activities

- **Membership**
  - ✧ Senior Member, IEEE
  - ✧ IEEE Signal Processing Society
  - ✧ IEEE Circuits and Systems Society
- **Technical Committee**
  - ✧ Member (12/2025-present), Applied Signal Processing Systems Technical Committee, IEEE Signal Processing Society
  - ✧ Member (09/2025-present), Signal Processing Technical Committee, Chinese Institute of Electronics
  - ✧ Member (12/2024-present), Vision Computation Simulation Technical Committee (VCSTC), China Simulation Federation

- ✧ Member (03/2024-present), Educational Conference Programs Committee, IEEE Signal Processing Society
- ✧ Member (05/2021-present), Digital Signal Processing Technical Committee (DSPTC), IEEE Circuits and Systems Society

- **Journal Editorship**
  - ✧ **Guest Editor**: IEEE Journal of Selected Topics in Signal Processing
  - ✧ **Guest Editor**: International Journal of Antennas and Propagation
  - ✧ **Preview Expert**: Frontiers of Information Technology & Electronic Engineering in the Information and Communication Technology area
  - ✧ **Young Editorial Board Member**: Journal of Radars
- **Conference Organizing Committee Member**
  - ✧ **Financial Chair** of the 2025 IEEE Workshop on Signal Processing Systems (IEEE SiPS 2025), Hong Kong.
  - ✧ **Financial Chair** of the 2023 IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (IEEE CAMSAP 2023), Costa Rica.
- **Special Session/Workshop Organizer**
  - ✧ **Session Chair** of the IEEE Workshop on Signal Processing Systems (SiPS 2025), Hong Kong, 1-4 Nov. 2025.
  - ✧ **Session Chair** of the 2024 IEEE International Symposium on Circuits and Systems (ISCAS 2024), Singapore, 19-22 May, 2024.
  - ✧ **Session Chair** of the 2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Singapore, 22-27 May, 2022.
  - ✧ **Special Session Organizer** of the 2021 International Conference on Control, Automation and Information Sciences (ICCAIS 2021), Xi'an, China, 14-17 October, 2021.
  - ✧ **Session Chair** of the 2021 IEEE International Symposium on Circuits and Systems (ISCAS 2021), Daegu, Korea, 22-28 May, 2021.
  - ✧ **Workshop Chair** of the 2020 International Conference on Communications, Signal Processing, and Systems (CSPS 2020), Changbaishan, China, 4-5 July, 2020.
- **Journal Paper Reviewer**
  - ✧ IEEE Transactions on Signal Processing
  - ✧ IEEE Wireless Communications
  - ✧ IEEE Transactions on Wireless Communications
  - ✧ IEEE Transactions on Aerospace and Electronic Systems
  - ✧ IEEE Transactions on Vehicular Technology
  - ✧ IEEE Internet of Thins Journal
  - ✧ IEEE Signal Processing Letters
  - ✧ IEEE Communications Letters
  - ✧ IEEE Access
  - ✧ Signal Processing (Elsevier)
  - ✧ Neural Networks (Elsevier)
  - ✧ Digital Signal Processing (Elsevier)
  - ✧ International Journal of Electronics and Communications (Elsevier)
  - ✧ Physical Communication (Elsevier)
  - ✧ Multidimensional Systems and Signal Processing

- ✧ IET Signal Processing
- ✧ IET Radar, Sonar, & Navigation
- ✧ IET Communications
- ✧ IET Electronics Letters
- ✧ SCIENCE CHINA Information Sciences
- ✧ Frontiers of Information Technology & Electronic Engineering
- ✧ EURASIP Journal on Advances in Signal Processing
- ✧ Sensors

- **Technical/Program/Review Committee Member**
  - ✧ IEEE International Symposium on Circuits and Systems (ISCAS)
  - ✧ IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)
  - ✧ IEEE International Conference on Electronics Technology (ICET)
  - ✧ IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM)
  - ✧ IEEE Workshop on Signal Processing Systems (SiPS)
  - ✧ IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)
  - ✧ IEEE International Conference on Digital Signal Processing (DSP)
  - ✧ IEEE International Symposium on Signal Processing and Information Technology (ISSPIT)
  - ✧ International Conference on Control, Automation and Information Sciences (ICCAIS)
  - ✧ International Conference on Communications, Signal Processing, and Systems (CSPS)
- **Reviewer for grant applications**
  - ✧ National Natural Science Foundation of China