CURRICULUM VITAE

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EDUCATION

Sept. 1985–Aug. 1989 **Dept. of Electrical Engineering and Computer Science**
Massachusetts Institute of Technology, Cambridge, MA., USA
- Thesis: *Communication Complexity of Some Problems in Distributed Computation*
- Advisor: *J.N. Tsitsiklis*, thesis committee members: *D.P. Bertsekas, J.B. Orlin*

Sept. 1984–May 1985 **Chern Institute of Mathematics, Nankai University**, Tianjin, China
- One year intensive training program in Mathematics and English, sponsored by the Ministry of Education of China.

Sept. 1980–May 1984 **Dept. of Mathematics, Peking University**, Beijing, China
- B.Sc. in Applied Mathematics, 1984; GPA 4.98/5
- Awarded several scholarships for outstanding academic performances, 1980-84.
- Selected as one of the 15 students by the Government of China and a joint SIAM-AMS (*Society of Industrial and Applied Mathematics* and *American Mathematical Society*) committee for Ph.D study in the U.S. with full scholarship, 1984. (Also known as the *S.S. Chern* Program)

EMPLOYMENT HISTORY

Sept. 2025–present **Shenzhen Loop Area Institute, Shenzhen, China**
Executive Director

March 2015–present **Shenzhen Research Institute of Big Data, Shenzhen, China**
Director

July 2014– present	**The Chinese University of Hong Kong, Shenzhen** *Vice President (Academic), Presidential Chair Professor*
April 2003– August 2014	**Dept. of Electrical and Computer Engineering, University of Minnesota** *ADC Chair Professor*
July 2001– July 2004	**Dept. of Electrical and Computer Engineering, McMaster University** *Canada Research Chair (Tier I) in Information Processing*
July 2000– April 2003	**Dept. of Electrical and Computer Engineering, McMaster University** *Department Head*
Sept. 1989– June 2005	**Dept. of Electrical and Computer Engineering, McMaster University** *Assistant, Associate, Full Professor*

SELECTED AWARDS & RECOGNITIONS

1. **Fellow of IEEE** (2007), **SIAM** (2011), **Royal Society of Canada** (2014)
2. **Foreign member of the Chinese Academy of Engineering** (CAE), 2021.
3. 2025 inaugural **Hua Prize** from the International Congress of Chinese Mathematicians (ICCM) for pioneering contributions to the field of applied mathematics.
4. 2023 **Shenzhen Science and Technology Award**, First Place, for research in blind beamforming techniques for intelligent reflective surfaces in wireless communication.
5. 2022 inaugural **Wang Xuan Applied Mathematics Prize** from the Chinese Society of Industrial and Applied Mathematics (CSIAM) for innovative research in performance optimization of practical wireless networks.
6. 2018 **Paul Y. Tseng Memorial Lectureship in Continuous Optimization** from Mathematical Optimization Society, for outstanding contributions in continuous optimization.
7. 2010 **Farkas Prize** from the Institute for Operations Research and the Management Sciences, for outstanding contributions to the field of optimization.
8. More than 10 **Best Paper Awards** from ICCM, IEEE Signal Processing Society, EURASIP and international conferences.
9. **ADC Chair in Digital Technology**, University of Minnesota, April 2003 – July 2013.
10. **Canada Research Chair (Tier I)** in Information Processing, McMaster University, July 2001-July 2004.

PROFESSIONAL ACTIVITIES (2014 - present)

1. Member of The Shaw Prize Council, 2025-2026
2. Technical Program Committee Chair, ICCOPT 2025.
3. Member of IEEE Signal Processing Society Awards Board, 2017-2018, 2024-2026.

4. Chair, Selection Committee for the Paul Y. Tseng Memorial Lectureship in Continuous Optimization, Mathematical Optimization Society, 2021.
5. Member of IEEE Alexander Graham Bell Medal Selection Committee, 2018-2020.
6. Member of IEEE Signal Processing Society Fellow Selection Committee, 2017-2019.
7. Chair, Farkas Prize Selection Committee, INFORMS Optimization Society, 2015.
8. General co-chair, ICASSP 2016, Shanghai, China.
9. Editor in Chief, IEEE Transactions on Signal Processing, 2012-2014.
10. Associate editor for *Proceedings of IEEE* (2025–2027); served on the editorial boards of *SIAM Journal on Optimization*, *Mathematics of Computation*, *Mathematical Programming*, *Mathematics of Operations Research*, *IEEE Transactions on Signal Processing*, *IEEE Signal Processing Magazine*, *Management Science*

RESEARCH FUNDING (2015 - present)

1. Guangdong Province Department of Science and Technology, RMB 20 million, 2023 – 2028
   - PI, project title: Guangdong Major Project of Basic and Applied Basic Research
2. Shenzhen Development and Reform Commission, RMB 700 million, 2016-2025.
   - PI, project title: Shenzhen Research Institute of Big Data
3. National Natural Science Foundation of China, RMB 2.8 million, 2018 – 2022.
   - PI, project title: Big Data Analysis Technology and Application Based on Distributed Non-convex Statistical Model
4. National Natural Science Foundation of China, RMB 770K, 2016 – 2019.
   - PI, project title: Joint Optimization Management of Ultra-dense Radio Access Network and Backhaul Network
5. Shenzhen Development and Reform Commission, RMB 10 million, 2017-2020.
   - PI, project title: Data Science and Big Data Technology
6. Tencent, RMB 4 millon, 2018 – 2023.
   - PI, project title: Joint Laboratory of Machine Intelligence between CUHK(SZ)-Tencent AI Lab
7. Guangdong Province Leading Talents Introduction Program, RMB 5 million, 2015 – 2020.
   - PI, project title: Massive Data Information Processing
8. Shenzhen Science and Technology Innovation Committee, RMB 30 million, 2015 - 2020.
   - PI, project title: Big Data Information Processing and Application Innovation Team

SELECTED PUBLICATIONS

A. Refereed Journal Publications

- **Journal Papers**

1. K. Li, W. Pu and Z.-Q. Luo, "Efficient Beamforming Refinement for Limited Feedback FDD Massive MIMO: An Online Alternating Exploration-Estimation Approach," *IEEE Transactions on Signal Processing*, Vol. 73, pp. 4969–4985, 2025.
2. W.-K. Chen, Y.-F. Liu, Y.-H. Dai and Z.-Q. Luo, "QoS-Aware and Routing-Flexible Network Slicing for Service-Oriented Networks," *IEEE Transactions on Network and Service Management*, Vol. 22, No. 6, pp. 6021–6036, Dec. 2025.
3. A. Maatouk, F. Ayed, N. Piovesan, A. D. Domenico, M. Debbah and Z.-Q. Luo, "TeleQnA: A Benchmark Dataset to Assess Large Language Models Telecommunications Knowledge," *IEEE Network*, 2025.
4. D. Rybin, Y. Zhang and Z.-Q. Luo, "XX^T Can Be Faster," *arXiv preprint arXiv:2505.09814*, 2025.
5. Y. Zhang, C. Chen, Z. Li, T. Ding, C. Wu, D. P. Kingma, Y. Ye, Z.-Q. Luo and R. Sun, "Adam-mini: Use Fewer Learning Rates to Gain More," *arXiv preprint arXiv:2406.16793*, 2024.
6. Y. Jiao, Y. Gu, T.-H. Chang and Z.-Q. Luo, "Decentralized Rank-Adaptive Matrix Factorization Part I: Algorithm Development," *IEEE Transactions on Signal Processing*, 2024.
7. W.-K. Chen, Z. Wu, R.-J. Zhang, Y.-F. Liu, Y.-H. Dai and Z.-Q. Luo, "An Efficient Benders Decomposition Approach for Optimal Large-Scale Network Slicing," *IEEE Transactions on Signal Processing*, Vol. 72, pp. 4935–4949, 2024.
8. Y. Jiao, Y. Gu, T.-H. Chang and Z.-Q. Luo, "Decentralized Rank-Adaptive Matrix FactorizationPart II: Convergence Analysis," *IEEE Transactions on Signal Processing*, 2024.
9. K. Li, Y. Li, L. Cheng and Z.-Q. Luo, "Enhancing Multi-Stream Beamforming Through CQIs for 5G NR FDD Massive MIMO Communications: A Tuning-Free Scheme," *IEEE Transactions on Wireless Communications*, Vol. 23, No. 11, pp. 17508–17521, Nov. 2024.
10. S. Zhang, X. Ning, X. Zheng, Q. Shi, T.-H. Chang and Z.-Q. Luo, "A Physics-Based and Data-Driven Approach for Localized Statistical Channel Modeling," *IEEE Transactions on Wireless Communications*, Vol. 23, No. 6, pp. 5409–5424, June 2024.
11. K. Li, Y. Li, L. Cheng, Q. Shi and Z.-Q. Luo, "Downlink Channel Covariance Matrix Reconstruction for FDD Massive MIMO Systems With Limited Feedback," *IEEE Transactions on Signal Processing*, Vol. 72, pp. 1032–1048, 2024.
12. Q. Wu, B. Zheng, C. You, L. Zhu, K. Shen, X. Shao, W. Mei, B. Di, H. Zhang, E. Basar, L. Song, M. Di Renzo, Z.-Q. Luo, and R. Zhang, "Intelligent Surfaces Empowered Wireless Network: Recent Advances and the Road to 6G," *Proceedings of the IEEE*, 2024.
13. X. Zhao, S. Lu, Q. Shi and Z.-Q. Luo, "Rethinking WMMSE: Can Its Complexity Scale Linearly With the Number of BS Antennas?" *IEEE Transactions on Signal Processing*, Vol. 71, pp. 433–446, 2023.
14. Y.-B. Zhao and Z.-Q. Luo, "Dynamic Orthogonal Matching Pursuit for Sparse Data Reconstruction," *IEEE Open Journal of Signal Processing*, Vol. 4, pp. 242–256, 2023.
15. Z.-Q. Luo, X. Zheng, D. López-Pérez, Q. Yan, X. Chen, N. Wang, Q. Shi, T.-H. Chang, and A. Garcia-Rodriguez, "SRCON: A Data-Driven Network Performance Simulator for Real-World Wireless Networks," *IEEE Communications Magazine*, Vol. 61, No. 6, pp. 96–102, June 2023.
16. W. Pu, Y.-F. Liu and Z.-Q. Luo, "Efficient Estimation of Sensor Biases for the 3-D Asynchronous Multi-Sensor System," *IEEE Transactions on Signal Processing*, Vol. 71, pp. 2420–2433, 2023.

17. C. Chen, L. Shen, W. Liu and Z.-Q. Luo, "Efficient-Adam: Communication-Efficient Distributed Adam," *IEEE Transactions on Signal Processing*, Vol. 71, pp. 3257–3266, 2023.
18. M. Asgarian, G. Mirjalily and Z.-Q. Luo, "Embedding Multicast Service Function Chains in NFV-Enabled Networks," *IEEE Communications Letters*, Vol. 25, No. 4, pp. 1264–1268, April 2021.
19. Y. Yuan, G. Zheng, K.-K. Wong, B. Ottersten and Z.-Q. Luo, "Transfer Learning and Meta Learning Based Fast Downlink Beamforming Adaptation," *IEEE Transactions on Wireless Communications*, Nov. 2020.
20. F. Yin, L. Pan, T. Chen, S. Theodoridis, Z.-Q. Luo and A. M. Zoubir, "Linear Multiple Low-Rank Kernel Based Stationary Gaussian Processes Regression for Time Series," *IEEE Transactions on Signal Processing*, Vol. 68, pp. 5260–5275, 2020.
21. M. Hong, T.-H. Chang, X. Wang, M. Razaviyayn, S. Ma and Z.-Q. Luo, "A Block Successive Upper Bound Minimization Method of Multipliers for Linearly Constrained Convex Optimization," *Mathematics of Operations Research*, Vol. 68, pp. 2244–2255, June 2020.
22. Y. Huang, S. A. Vorobyov and Z.-Q. Luo, "Quadratic Matrix Inequality Approach to Robust Adaptive Beamforming for General-Rank Signal Model," *IEEE Transactions on Signal Processing*, Vol. 68, pp. 2244–2255, Jan. 2020.
23. Y. Yang, M. Pesavento, Z.-Q. Luo and B. Ottersten, "Inexact Block Coordinate Descent Algorithms for Nonsmooth Nonconvex Optimization," *IEEE Transactions on Signal Processing*, Vol. 68, pp. 947–961, Dec. 2019.
24. R. Sun, Z.-Q. Luo and Y. Ye, "On the Efficiency of Random Permutation for ADMM and Coordinate Descent," *Mathematics of Operations Research*, Vol. 45, pp. 233–271, Nov. 2019.
25. N. Moehle, X. Shen, Z.-Q. Luo and S. Boyd, "A Distributed Method for Optimal Capacity Reservation," *Journal of Optimization Theory and Applications*, Vol. 182, pp. 1130–1149, Sep. 2019.
26. Z. Lin, W. Pu and Z.-Q. Luo, "Minimax Design of Constant Modulus MIMO Waveforms for Active Sensing," *IEEE Signal Processing Letters*, Vol. 26, No. 10, pp. 1531–1535, Oct. 2019.
27. M. Razaviyayn, M. Hong, N. Reyhanian and Z.-Q. Luo, "A Linearly Convergent Doubly Stochastic Gauss-Seidel Algorithm for Solving Linear Equations and a Certain Class of Over-parameterized Optimization Problems," *Mathematical Programming*, Vol. 176, pp. 465–496, July 2019.
28. W. Liu, R. Sun and Z.-Q. Luo, "Globally Optimal Joint Uplink Base Station Association and Beamforming," *IEEE Transactions on Communications*, May 2019.
29. A. Aubry, A. De Maio, A. Zappone, M. Razaviyayn and Z.-Q. Luo, "A New Sequential Optimization Procedure and Its Applications to Resource Allocation for Wireless Systems," *IEEE Transactions on Signal Processing*, Vol. 66, No. 24, pp. 6518–6533, Dec. 2018.
30. F. Shang, J. Cheng, Y. Liu, Z.-Q. Luo and Z. Lin, "Bilinear Factor Matrix Norm Minimization for Robust PCA: Algorithms and Applications," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol. 40, No. 9, pp. 2066–2080, Sep. 2018.
31. G. Mirjalily and Z.-Q. Luo, "Optimal Network Function Virtualization and Service Function Chaining: A Survey," *Chinese Journal of Electronics*, Vol. 27, No. 4, pp. 704–717, July 2018.
32. W. Liao, M. Hong, H. Farmanbar and Z.-Q. Luo, "A Distributed Semiasynchronous Algorithm for Network Traffic Engineering," *IEEE Transactions on Signal and Information Processing over Networks*, Vol. 4, No. 3, pp. 436–450, Sep. 2018.
33. W. Pu, Y. F. Liu, J. Yan, H. Liu and Z.-Q. Luo, "Optimal Estimation of Sensor Biases for Asynchronous Multi-Sensor Data Fusion," *Mathematical Programming*, Vol. 170, pp. 357–386, July 2018.

34. W. Pu, J. Xiao, T. Zhang and Z.-Q. Luo, "An Optimization Model for Electroencephalography-Assisted Binaural Beamforming," *The Journal of the Acoustical Society of America*, Vol. 143, No. 3, pp. 1744, Mar. 2018.

35. M. Hong and Z.-Q. Luo, "On the Linear Convergence of the Alternating Direction Method of Multipliers," *Mathematical Programming*, Vol. 162, pp. 165–199, Mar. 2017.

36. M. Hong and Z.-Q. Luo, "Iteration Complexity Analysis of Block Coordinate Descent Methods," *Mathematical Programming*, Vol. 163, pp. 85–114, May 2017.

37. M. Locatelli and Z.-Q. Luo, "On the Complexity of Optimal Power Allocation in a Multi-Tone Multiuser Communication System," *IEEE Transactions on Information Theory*, Vol. 63, pp. 6622–6627, Oct. 2017.

38. F. Shang, J. Cheng, Y. Liu, Z.-Q. Luo and Z. Lin, "Bilinear Factor Matrix Norm Minimization for Robust PCA: Algorithms and Applications," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2017.

39. N. Zhang, Z. Yao, Y. Liu, S. P. Boyd and Z.-Q. Luo, "Dynamic Resource Allocation for Energy Efficient Transmission in Digital Subscriber Lines," *IEEE Transactions on Signal Processing*, Vol. 65, pp. 4353–4366, Aug. 2017.

40. N. Zhang, Y. Liu, H. Farmanbar, T. Chang, M. Hong and Z.-Q. Luo, "Network Slicing for Service-Oriented Networks Under Resource Constraints," *IEEE Journal on Selected Areas in Communications*, Vol. 35, pp. 2512–2521, Nov. 2017.

41. Y.-B. Zhao, H. Jiang and Z.-Q. Luo, "Weak Stability of ℓ_1-Minimization Methods in Sparse Data Reconstruction," *IEEE Transactions on Signal and Information Processing over Networks*, Nov. 2017.

42. Y.-B. Zhao and Z.-Q. Luo, "Constructing New Weighted ℓ_1-Algorithms for the Sparsest Points of Polyhedral Sets," *Mathematics of Operations Research*, Vol. 42, pp. 1–276, 2017.

43. M. Razaviyayn, M. Sanjabi and Z.-Q. Luo, "A Stochastic Successive Minimization Method For Nonsmooth Nonconvex Optimization With Applications To Transceiver Design In Wireless Communication Networks," *Mathematical Programming*, Vol. 157, pp. 515-545, 2016.

44. M. Hong, M. Razaviyayn, Z.-Q. Luo, J.-S. Pang, "A Unified Algorithmic Framework For Block-Structured Optimization Involving Big Data: With Applications In Machine Learning And Signal Processing," *IEEE Signal Processing Magazine*, Vol. 33, pp. 57-77, 2016.

45. R. Sun and Z.-Q. Luo, "Guaranteed matrix completion via non-convex factorization," *IEEE Transactions on Information Theory*, Vol. 62, pp. 6535-6579, 2016.

46. Q. Shi, M. Hong, M. Razaviyayn and Z.-Q. Luo, "SINR Constrained Beamforming for a MIMO Multi-user Downlink System: Algorithms and Convergence Analysis", Accepted for publication in *IEEE Transactions on Signal Processing*, 2016.

47. M. Hong, Z.-Q. Luo and M. Razaviyayn, "Convergence Analysis Of Alternating Direction Method Of Multipliers For A Family Of Nonconvex Problems", *SIAM Journal on Optimization*, Vol. 26, pp. 337-364, 2016.

48. R. Sun, M. Hong and Z.-Q. Luo, "Joint Downlink Base Station Association and Power Control for Max-min Fairness: Computation and Complexity", *IEEE Journal on Selected Areas in Communications*, Vol. 33, pp. 1040-1054, 2015.

49. R. Sun and Z.-Q. Luo, "Interference Alignment Using Finite and Dependent Channel Extensions: the Single Beam Case," *IEEE Transactions on Information Theory*, Vol. 61, pp. 239-255, 2015.

50. H. Baligh, M. Hong, W.C. Liao, Z.-Q. Luo, M. Razaviyayn, M. Sanjabi, R. Sun, "Cross-layer Provision of Future Cellular Networks: A WMMSE-based Approach," *IEEEE Signal Processing Magazine*, Vol. 31, pp. 56-68, 2014.

51. Z. Xu, M. Hong and Z.-Q. Luo, "Semidefinite Approximation for Mixed Binary Quadratically Constrained Quadratic Programs", *SIAM Journal on Optimization*, Vol. 24, pp. 1265-1293, 2014.
52. W.C. Liao, M. Hong, Y.-F. Liu, Z.-Q. Luo, "Base Station Activation and Linear Transceiver Design for Optimal Resource Management in Heterogeneous Networks," *IEEE Transactions on Signal Processing*, Vol. 62, pp. 3939-3952, 2014.
53. Razaviyayn, M., Hong, M. and Luo, Z.-Q., "Linear transceiver design for a MIMO interfering broadcast channel achieving maxÍCmin fairness," *Signal Processing*, Vol. 93, pp. 3327-3340, 2014.
54. Razaviyayn, M., Baligh, H., Callard, A. and Luo, Z.-Q., "Joint User Grouping and Transceiver Design in a MIMO Interfering Broadcast Channel," *IEEE Transactions on Signal Processing*, Vol. 62, pp. 85–94, 2014.
55. Sanjabi, M., Razaviyayn, M. and Luo, Z.-Q., "Optimal Joint Base Station Assignment and Beamforming for Heterogeneous Networks," *IEEE Transactions on Signal Processing*, Vol. 62, pp. 1950-1961, 2014.
56. Hong, M., Sun, R., Luo, Z.-Q. and and Baligh, H., "Joint Base Station Clustering and Beamformer Design for Partial Coordinated Transmission in Heterogeneous Networks," *IEEE Journal on Selected Areas in Communications - Special Issue on Large-Scale Multiple Antenna Wireless Systems*, Vol. 31, pp. 225–240, 2013.
57. Hong, M., Xu, Z., Razaviyayn, M. and Luo, Z.-Q., "Joint User Grouping and Linear Virtual Beamforming: Complexity, Algorithms and Approximation Bounds," *IEEE Journal on Selected Areas in Communications Special Issue on Virtual MIMO*, Vol. 30, pp. 2013–2027, 2013.
58. Zhang, H., Jiang, J. and Luo, Z.-Q., "On the Linear Convergence of a Proximal Gradient Method for a Class of Nonsmooth Convex Minimization Problems," *Journal of Operations Research Society of China*, Vol. 1, pp. 163–186, June 2013.
59. Li, Q., Hong, M., Wai, H.T., Liu, Y.-F., Ma, W.K. and Luo, Z.-Q., "Transmit Solutions for MIMO Wiretap Channels Using Alternating Optimization," *IEEE Journal on Selected Areas in Communications*, Vol. 31 (9), pp. 1714-1727, 2013.
60. Razaviyayn, M., Hong, M. and Luo, Z.-Q., "Linear Transceiver Design for a MIMO Interfering Broadcast Channel Achieving Max-Min Fairness," *Signal Processing*, Vol. 93 (12), pp. 3327–3340, 2013.
61. Razaviyayn, M., Hong, M. and Luo, Z.-Q., "A Unified Convergence Analysis of Block Successive Minimization Methods for Nonsmooth Optimization," *SIAM Journal on Optimization* 23 (2) pp. 1126-1153, 2013.
62. Hong, M. and Luo, Z.-Q., "Distributed Linear Precoder Optimization and Base Station Selection for an Uplink Heterogeneous Network", *IEEE Transactions on Signal Processing*, Vol. 61, pp. 3214–3228, June 2013.
63. Razavi, A., Zhang, W. and Luo, Z.-Q., "Distributed Optimization in an Energy-constrained Network: Analog Versus Digital Communication Schemes," *IEEE Transactions on Information Theory* 59 (3) pp. 1803-1817, 2013.
64. Razaviyayn, M., Lyubeznik, G. and Luo, Z.-Q., "On the Degrees of Freedom Achievable Through Interference Alignment in a MIMO Interference Channel," *IEEE Transactions on Signal Processing*, Vol. 60, pp. 812–821, February 2012.
65. Song E., Shi Q., Sanjabi M., Sun R.-Y. and Luo, Z.-Q., "Robust SINR-Constrained MISO Downlink Beamforming: When is Semidefinite Programming Relaxation Tight?" *Journal: EURASIP Journal on Wireless Communications and Networking*, DOI 10.1186/1687-1499-2012-243, August 2012.
66. Razaviyayn, M., Sanjabi, M. and Luo, Z.-Q., "Linear Transceiver Design for Interference Alignment: Complexity and Computation," *IEEE Transactions on Information Theory*, Vol. 58, pp. 2896 - 2910, May 2012.

67. Jiang, X., Georgiou, T. and Luo, Z.-Q., "Geometric Methods for Spectral Analysis," Accepted for publication in *IEEE Transactions on Signal Processing,* Vol. 60, pp. 1064–1074, March 2012.

68. Nekuii, M., Kisialliou, M., Davidson, T. and Luo, Z.-Q., "Efficient Soft-Output Demodulation of MIMO QPSK via Semidefinite Relaxation," *IEEE Journal of Selected Topics in Signal Processing*, Vol. 5, pp. 1426–1437, December 2011.

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71. Liu, Y.-F., Dai, Y.-H. and Luo, Z.-Q., "Coordinated Beamforming for MISO Interference Channel: Complexity Analysis and Efficient Algorithms," *IEEE Transactions on Signal Processing,* Vol. 59, No. 3, pp. 1142 –1157, 2011.

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74. He, S., Li, M., Luo, Z.-Q. and Zhang, S., "A Nonconvergent Example for the Iterative Water-filling Algorithm," Accepted for publication in *Numerical Algebra, Control and Optimization*, October 2010.

75. Luo, Z.-Q. and Zhang, S., "A Semidefinite Relaxation Scheme for Multivariate Quartic Polynomial Optimization With Quadratic Constraints," *SIAM Journal on Optimization*, Vol. 20, pp. 1716–1736, 2010.

76. Matskani, E., Sidiropoulos, N.D., Luo, Z.-Q. and Tassiulas, L., "Efficient Batch and Adaptive Approximation Algorithms for Joint Multicast Beamforming and Admission Control," *IEEE Transactions on Signal Processing*, Vol. 57, pp. 4882–4894, 2009.

77. Kisialiou, M., Luo, X.-D., and Luo, Z.-Q., "Quasi-Maximum-Likelihood Detection Based on Semidefinite Relaxation: Analysis and Implementation," *IEEE Transactions on Signal Processing*, Vol. 57, No. 12, pp. 4811–4822, 2009.

78. Kisialiou, M. and Luo, Z.-Q., "Probabilistic Analysis of Semidefinite Relaxation for Binary Quadratic Minimization," *SIAM Journal on Optimization*, Vol. 20, No. 4, pp. 1906-1922, 2010.

79. Yang, K.-H., Wang, G. and Luo, Z.-Q., "Efficient Convex Relaxation Methods for Robust Target Localization by a Sensor Network Using Time Differences of Arrivals," *IEEE Transactions on Signal Processing*, Vol. 57, No. 7, pp. 2775–2784, July 2009.

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81. Luo, Z.-Q. and Zhang, S., "Duality Gap Estimation and Polynomial Time Approximation for Optimal Spectrum Management," *IEEE Transactions on Signal Processing*, Vol. 57, No. 7, pp. 2675–2689, July 2009.

82. De Maio, A., De Nicola, S., Huang, Y., Luo, Z.-Q. and Zhang, S., "Design of Phase Codes for Radar Performance Optimization With a Similarity Constraint," *IEEE Transactions on Signal Processing*, Vol. 57, No. 2, pp. 610–621, Feb. 2009.

83. Hayashi, S. and Luo, Z.-Q., "Spectrum Management for Interference-limited Multiuser Communication Systems," *IEEE Transactions on Information Theory*, Vol. 55, No. 3, pp. 1153–1175, March 2009.

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88. Luo, Z.-Q. and Zhang, S., "Dynamic Spectrum Management: Complexity and Duality," *IEEE Journal of Selected Topics in Signal Processing*, Special Issue on Signal Processing and Networking for Dynamic Spectrum Access, Vol. 2, No. 1, pp. 57–73, February 2008.

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B. Selected Refereed Conference Papers

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2. Li, Z., Xu, T., Zhang, Y., Lin, Z., Yu, Y., Sun, R. and Luo, Z.-Q., "ReMax: A Simple, Effective, and Efficient Reinforcement Learning Method for Aligning Large Language Models," *Forty-first International Conference on Machine Learning*, 2024.

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5. Luo, Z.-Q., Gastpar, M., Liu, J. and Swami, A., (Guest Editors), Special issue of *IEEE Signal Processing Magazine* on 'Distributed Signal Processing for Sensor Networks', 2006.

Student Supervision (2003 – present)

- Ph.D Students: Yushun Zhang, Ziniu Li, Juntao Wang, Dmitry Rybin, Yeqing Qiu, Yi Feng, Runhan Yang, Yuyang Zhao, Shangjie Zhou
- Graduated Ph.D Students:
  - Congliang Chen (Research Assistant Professor, Shenzhen Loop Area Institute, Shenzhen, PR China)
  - Ruoyu Sun (Associate Professor, The Chinese University of Hong Kong, Shenzhen, PR China)
  - Meisam Razaviyayn (Associate Professor, University of Southern California, USA)
  - Wenqiang Pu (Research Scientist, Shenzhen Research Institute of Big Data, PR China)
  - Jiawei Zhang (Assistant Professor, University of Wisconsin–Madison, USA)
  - Jiancong Xiao (Postdoc, University of Pennsylvania, USA)
  - Shuyi Ren (Postdoc, Linköping University, Sweden)
  - Congliang Chen (Research Assistant Professor, Shenzhen Loop Area Institute, Shenzhen, China)
  - Qingyan Meng (Research Assistant Professor, Pengcheng National Laboratory, China)
  - Liangqi Liu (Assistant Researcher, Qianyuan Laboratory, Hangzhou, China)
  - Tianjian Zhang (Senior Engineer, Huawei Technologies Co. Ltd, China)
  - Kai Li (Senior Engineer, Huawei Technologies Co. Ltd, China)
  - Hao Liang (Postdoc, King's College London, UK)
  - Jinjun Xiao (Senior Engineer, Starkey Hearing Technologies)
  - Alireza Razavi (Senior Member of Technical Staff, Aquantia)
  - Yao Huang (Senior Data Scientist, Intuit)
  - Mikalai Kiasiliou (Senior Engineer, Intel Corporation)

  - Maziar Sanjabi (Staff Engineer, Starkey Hearing Technologies)
  - Andy Tseng (Staff Engineer, Pindrop Security)
  - Wei-cheng Liao (Staff Engineer, Broadcom)

- Graduated Master Students: Ye Liu, Jingwei Mao, Boyuan Wang, Sha Lai, Ying Li, Liping Tang, Randy Platt, Ningyuan Wang, Chris Hamilton

- Postdoctoral fellows:

  - Mingyi Hong (Assoc. Prof., University of Minnesota, USA)
  - Zhiguo Wang (Assoc. Prof., Sichuan University, PR China)
  - Baldur Steingrimsson (Instructor, Oregon State University, USA)
  - Jos F. Sturm (Associate Professor, Tilburg University, the Netherland)

INVITED PRESENTATIONS (2015 – present)

1. Keynote speaker, KAUST Research Conference on Mathematical and Data Sciences, Thuwal, Saudi Arabia, January 2026.
2. Keynote speaker, The 2nd Conference on Mathematics and Artificial Intelligence Sciences (Math & AI 2025), Dongguan, China.
3. Keynote speaker, CCF ChinaSoft 2025, Wuhan, China, November, 2025.
4. Invited speaker, the True Tech Day, MTS, Russia, June, 2025.
5. Keynote speaker, The 15th National Conference on Mathematical Optimization of the Mathematical Programming, Shanghai, China, May, 2025.
6. Keynote speaker, DO x ML - Seventh Conference on Discrete Optimization and Machine Learning, Kyoto, Japan, May, 2025.
7. Keynote speaker, IEEE PIMRC 2024, Valencia, Spain.
8. Keynote speaker, CSIAM-BDAI2024, Yinchuan, China.
9. Invited speaker, ICIAM 2023, Japan,Tokyo, August, 2023.
10. Invited speaker, The 14th International Conference on Numerical Optimization and Numerical Linear Algebra, Taiyuan, China, August 2023.
11. Keynote speaker, 18th International Symposium on Wireless Communication Systems (ISWCS2022), Hangzhou, China.
12. Plenary speaker, The 10th International Conference on Control, Automation and Information Science (ICCAIS 2021), Shanghai, China, October 2021
13. Plenary speaker, Chinese Congress on Artificial Intelligence, Chengdu, China, August 2021
14. Plenary speaker, 2021 PKU Workshop on Optimization Theory and Methods, Beijing, China, January 2021.
15. Plenary speaker, IEEE SPAWC 2020, Virtual Conference.

16. Plenary speaker, The 35th Youth Academic Annual Conference of Chinese Association of Automation, Zhanjiang, China, October 2020.
17. Plenary speaker, The Greater Bay Area Workshop on Computational Optimization, Department of Applied Mathematics, The Hong Kong Polytechnic University, January 2019.
18. Plenary speaker, Workshop on Data Driven Optimization Methods and Applications, Jilin University, Changchun, China, July 2019.
19. Keynote speaker, IEEE/CIC International Conference on Communications in China, Changchun, China, August 2019.
20. Invited speaker, The Third Greater Bay Area Precision Medicine Summit Forum, Shenzhen Peoples Hospital, August 2019.
21. Invited speaker, The 17th Annual Meeting of China Society for Industrial and Applied Mathematics, Foshan, China, September 2019.
22. Invited speaker, The 31st RAMP Symposium (RAMP2019), Keio University Yagami Campus, Tokyo, Japan, November 2019.
23. Keynote speaker, Workshop on Advances in Wireless Communications, Southeast University, Nanjing, China, May 4, 2018.
24. Plenary speaker, IEEE SAM, Sheffield, UK, July 2018.
25. Plenary speaker, CHIMA (China Hospital Information Management Association Annual Conference), Guizhou, China, July 2018.
26. Plenary speaker, Workshop on New Computing-Driven Opportunities for Optimization, Fujian, China, August 2018.
27. Colloquium speaker, Department of Mathematics, The Hong Kong University of Science and Technology, September 2018.
28. Keynote speaker, WCSP2018, Hangzhou, China, October 2018.
29. Plenary speaker, Huawei Wireless Algorithm Department, Shanghai, China, December 2018.
30. Invited speaker, Advances in Operations Research and Operations Management, City University of Hong Kong, January 2017.
31. Invited speaker, Conference on Nonconvex Statistical Learning, University of Southern California, May 2017.
32. Colloquium speaker, The Chinese University of Hong Kong, Shenzhen, August 2017.
33. Keynote speaker, IEEE ICCS 2016, Shenzhen, China.
34. Colloquium speaker, Department of Electrical and Computer Engineering, State University of North Carolina, November 2016.
35. Colloquium speaker, Department of Industrial Engineering, Northwestern University, May, 2016.
36. Plenary speaker, Huawei Wireless Algorithm Day, Shanghai, April, 2016.
37. Plenary speaker, ChinaCom, Chongqing, China, 2016.
38. Plenary speaker, IEEE ICCC, Shenzhen, China, 2015.
39. Colloquium speaker, Department of Electrical and Computer Engineering, University of Iowa, October, 2015.