

## Curriculum Vitae of Dr Shuzhong Zhang

**Family Name:** Zhang  
**Given Name:** Shuzhong  
**Month of Birth:** October 1963  
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### Academic & Professional Qualifications:

*June 27, 1991*

Ph.D. Degree in Operations Research, Tinbergen Institute, Erasmus University, Rotterdam, The Netherlands.

*July 1989 – June 1991*

Ph.D. Program, Tinbergen Institute, Erasmus University, Rotterdam, The Netherlands.

*July 1984 – July 1989*

M.Phil. and Ph.D. Program, Fudan University, Shanghai, China.

*July 1984*

B.Sc. Degree in Mathematics, Fudan University, Shanghai, China.

*September 1980 – July 1984*

B.Sc. Program, Department of Mathematics, Fudan University, Shanghai.

### Job History:

*July 2012 –*

Professor and Founding Department Head, Department of Industrial and Systems Engineering, University of Minnesota.

*December 2011 – June 2012*

Professor and Program Director, Industrial and Systems Engineering Program, University of Minnesota.

*January 2011 – November 2011*

Professor, Industrial and Systems Engineering Program, University of Minnesota.

*August 2002 – December 2010*

Professor, Department of Systems Engineering and Engineering Management, The Chinese University of Hong Kong.

*August 1999 – July 2002*

Associate Professor, Department of Systems Engineering and Engineering Management, The Chinese University of Hong Kong.

*September 1993 – July 1999*

Lecturer, the Econometric Institute, Erasmus University, Rotterdam, The Netherlands.

*July 1991 – August 1993*

Lecturer, the Department of Econometrics, University of Groningen, The Netherlands.

*July 1989 – June 1991*

Research Assistant, Tinbergen Institute, Erasmus University, The Netherlands.

*November 1988 – June 1989*

Visiting Scholar, Operations Research Group, Econometric Institute, Erasmus University, The Netherlands.

### **Prizes and Awards:**

The 2015 SPS Signal Processing Magazine Best Paper Award. (Zhi-Quan Luo, Wing-Kin Ma, Anthony Man-Cho So, Yinyu Ye, and Shuzhong Zhang, *Semidefinite Relaxation of Quadratic Optimization Problems*, IEEE Signal Processing Magazine, Volume: 27, No.3, May 2010).

IEEE Signal Processing Society Best Paper Award, 2009. (Zhi-Quan Luo and Shuzhong Zhang, *Dynamic Spectrum Management: Complexity and Duality*, IEEE Journal of Selected Topics in Signal Processing, volume 2, pages 57 – 73, 2008).

The SIAM Outstanding Paper Prize, 2003. (David Yao, Shuzhong Zhang, and Xunyu Zhou, *Stochastic LQ Control via Semidefinite Programming*, SIAM Journal on Control and Optimization, volume 40, pages 801 – 823, 2001).

The SIAM Outstanding Paper Prizes were introduced in 1999, and are awarded annually. Three winners were selected each year among all the papers published in the 13 SIAM journals in the three years prior to the year of the award.

The Young Researcher Award, The Chinese University of Hong Kong, 2003.

The Vice-Chancellor's Exemplary Teaching Award, The Chinese University of Hong Kong, 2001. (Each faculty one awardee a year).

Ranked number 6 of 40 top Dutch economists (December 1999).

Erasmus University Research Prize 1999 (fl. 15,000  $\approx$  US\$ 7,500). This prize is on the whole university level (7 faculties); one awardee in the whole university each year.

Ph.D. dissertation won runner-up prize for *the 1991 TIMS College On Location Analysis best dissertation award*.

### **Honorary Affiliations:**

Affiliated Member, Center for Optimization and Applications, Chinese Academy of Sciences, Beijing, China (2009 – ).

Distinguished Honorary Professor, School of Management, Fudan University, Shanghai, China (2008 – 2011).

Honorary Dean, School of Management, China University of Mining and Technology, Xuzhou, China (2003 – 2006).

Member of the Chair Professor Team, Tsinghua University (2009 – 2010).

Adjunct Professor, Shanghai University of Finance and Economics (2009 – 2017).

Adjunct Professor at School of Science, Beijing University of Posts and Telecommunications, Beijing, China (2007 – ).

Adjunct Professor at School of Management Sciences, Fudan University, Shanghai, China (2002 – 2008).

Adjunct Professor at School of Sciences, Shanghai University, China (1997 – ).

### **Research Interests:**

*Methodologies:* Optimization; Operations Research; Big Data Analytics.

*Applications:* Bioinformatics; Financial Engineering; Signal Processing.

### **Courses Taught:**

- *No Boundary Thinking in Bioinformatics* (IE5080); UMN.
- *Financial Decision Making* (IE5441); UMN.
- *First-Order Algorithms for Convex Optimization*, 2015; Shanghai University of Finance and Economics.

- *A Short Course on Computational Game and Economics Models*, 2014; Shanghai University of Finance and Economics.
- *An Introduction to Optimization: Ideas and Examples*, 2013; Shanghai University.
- *Advanced Topics in OR* (IE8534); UMN.
- *Summer Course on Conic Optimization*, Harbin, 2009; The Chinese Math Prog Society.
- *Dynamic Optimization and Applications* (SEG3470); CUHK
- *Conic Optimization and Applications* (SEG5660); CUHK
- *Engineering Economics in E-Commerce Technologies* (ECT7230); CUHK
- *Computational Finance* (SEG7570); CUHK
- *Optimization I* (SEG5520); CUHK
- *Engineering Economics* (SEG2440); CUHK
- *Asset Pricing Models* (SEG5120); CUHK
- *Special Topics in Systems Engineering & Engineering Management* (SEG4580); CUHK
- *Semidefinite Programming* (Ectrie Capita Selecta B); Erasmus University
- *Linear and Nonlinear Programming* (MaBes 1); Erasmus University
- *Quantitative Techniques in Finance* (A7325); Erasmus University
- *Advanced Linear Programming*; Erasmus University
- *Linear Programming*; University of Groningen
- *Mathematical Modeling* (with C. Schweigman *et al.*); University of Groningen
- *Introduction to Primal-Dual Interior Point Methods*; University of Groningen

### Postgraduate Students Supervision:

#### COMPLETED PH.D. STUDENTS:

- *At University of Minnesota:*

MOULTON Jeffrey Thomas.

*Title of the dissertation:* Robust Fragmentation: A Data-Driven Approach to Decision-Making under Distributional Ambiguity.

*Date of the Ph.D. thesis defense:* July 22, 2016.

JIANG Bo.

*Title of the dissertation:* Polynomial Optimization: Structures, Algorithms, and Engineering Applications.

*Date of the Ph.D. thesis defense:* August 26, 2013.

• At the Chinese University of Hong Kong:

CHEN Bilian.

*Title of the dissertation:* Optimization with Block Variables: Theory and Applications.

*Date of the Ph.D. thesis defense:* June 7, 2012.

WONG Man Hong.

*Title of the dissertation:* Robust Approach to Risk Management and Statistical Analysis.

*Date of the Ph.D. thesis defense:* June 7, 2012.

WANG Xiaoguo.

*Title of the dissertation:* A study of system efficiencies through game theory and optimization.

*Date of the Ph.D. thesis defense:* June 22, 2011.

LI Zhening.

*Title of the dissertation:* Polynomial optimization problems: approximation algorithms and applications.

*Date of the Ph.D. thesis defense:* June 22, 2011.

HE Hongzhi; (co-supervision with Frank Chen).

*Title of the dissertation:* A hub-to-hub revenue management model.

*Date of the Ph.D. thesis defence:* June 2, 2010.

HE Simai.

*Title of the dissertation:* Aspects of the bridge between optimization and game theory.

*Date of the Ph.D. thesis defence:* June 19, 2009.

CHEN Li.

*Title of the dissertation:* Risk measures, robust portfolios, and other minimax models.

*Date of the Ph.D. thesis defence:* June 27, 2008.

XIE Jiang.

*Title of the dissertation:* Constrained portfolio selection via high performance optimization techniques.

*Date of the Ph.D. thesis defence:* June 15, 2006.

HUANG Yongwei.

*Title of the dissertation:* Complex quadratic optimization via semidefinite programming: models and applications.

*Date of the Ph.D. thesis defence:* August 18, 2005.

WANG Xiao Qing; (co-supervision with David D. Yao).

*Title of the dissertation:* Theory and algorithms for separated continuous linear programming and its extensions.

*Date of the Ph.D. thesis defence:* July 22, 2005.

LIANG Jian Feng; completed in 2004 (co-supervision with Duan Li).

*Title of the dissertation:* Optioned portfolio selection: models, analysis, & solution methods.

*Date of the Ph.D. thesis defence:* July 15, 2004.

- At Erasmus University:

J.F. Sturm

*Title of the dissertation:* Primal-dual interior point approach to semidefinite programming.

*Date of the Ph.D. defence:* September 11, 1997.

Jos Sturm was the father of the famous general SDP solver known as **SeDuMi**. Jos' Ph.D. dissertation received the "Gijs de Leve Prize" (Best Ph.D. Thesis in OR & Management Science in The Netherlands) in January 2000 for 1997-1999. The prize is awarded to one recipient in the whole country every three years.

COMPLETED MASTER STUDENTS:

- At the Chinese University of Hong Kong:

WONG Man Hong; completed in 2006.

*Subject:* Investment models based on clustered scenario trees.

SHEN Ruijun; completed in 2005.

*Subject:* Robust portfolio selection based on a multi-stage scenario tree.

CHEN Li; completed in 2004.

*Subject:* Portfolio selection under downside risk measure and distributional uncertainties.

CHENG Tak Wai; completed in 2003.

*Subject:* On implementation of a self-dual embedding method for convex programming.

YU Lian; completed in 2003 (co-supervision with Xunyu Zhou).

*Subject:* A downside risk analysis based on financial index tracking models.

LAM Sze Wan; completed in 2002 (co-supervision with Duan Li).

*Subject:* Value estimation in the Iri-Imai method for convex programming.

LEE Sung Tak; completed in 2001.

*Subject:* Sensitivity analysis for linear programming based on interior point methods.

- At Erasmus University:

S. Stots; completed in 2002.

*Subject:* Decomposition methods in stochastic programming.

Q.J.M. van Bijsterveldt; completed in 1997.

*Subject:* Combining transport flows: a case analysis of Unilever in France.

M. van Erkel; completed in 1996.

*Subject:* A network flow approach to a hard combinatorial problem.

M. Leenders; completed in 1996.

*Subject:* Affine scaling subgradient method for the min-max problems.

Y. Lont; completed in 1995 (co-supervision with R. Dekker).

*Subject:* A container allocation problem in the harbor of Rotterdam.

S.A. Bouwhuis; completed in 1995 (co-supervision with B. Manderick).

*Subject:* Heuristics for the quadratic assignment problem.

W.J. Jansen; completed in 1994 (co-supervision with N. Piersma).

*Subject:* Vehicle routing problem.

- At University of Groningen:

J.F. Sturm; completed in 1993.

*Subject:* Interior point methods.

S. Goverse; completed in 1993.

*Subject:* Fractional programming.

J. Doornbos; completed in 1992.

*Subject:* On train scheduling problems (a project at the Dutch railway company).

A. ten Have; completed in 1992.

*Subject:* An airplane landing problem.

## Research Projects and Grants since 2000:

- Principal Investigator, *Gradient Methods for Solving Big Data (Tensor) Optimization Problems*, NSF (CMMI-1462408), Duration: 01-09-2015 to 31-08-2018. Grant amount: US\$ 299,999.
- Co-Investigator, (PI: Bo Jiang), *Low-Rank Tensor Optimization: Models, Algorithms and Applications*. National Natural Science Foundation of China (11401364). Duration: 01-01-2015 to 31-12-2017. Amount: RMB 220,000.
- Co-Investigator, (PI: Shiqian Ma, Co-I: Bo Jiang), *Optimization Algorithms for Low-Rank Tensor Recovery and Tensor PCA*, Hong Kong Research Grants Council (14205314). Duration: 01-01-2015 to 31-12-2017. Grant amount: HK\$ 500,000.
- Co-Investigator, (PI: Xiuzhen Huang), *Building a Starting Core for No-Boundary Education and Research Network*, NSF EAGER. Duration: 09-01-2014 to 08-31-2016. Grant amount US\$ 300,000.

- Co-Investigator, (PI: Bilian Chen), *Tensor Optimization: Algorithms and Applications in Gene Expression Data Analysis*, National Science Foundation of China (11301436). Duration: 01-01-2014 to 31-12-2016. Grant amount: RMB 220,000.
- Principal Investigator, *Polynomial Optimization: Solution Methods and Applications*, NSF (CMMI-1161242), Duration: 01-06-2012 to 31-05-2015. Grant amount: US\$ 359,859.
- Co-Investigator, *Rethinking How We Manage Traffic to Reduce Emissions While Maintaining Mobility: A New Paradigm for Traffic Management*, Initiative for Renewable Energy and the Environment (IREE), University of Minnesota, RS-0035-12. Duration: 01-09-2011 to 31-08-2012. Grant amount: US\$ 70,000.
- Principal Investigator, *Multivariate Quartic Polynomial Optimization: Approximation Algorithms and Applications*, RGC Earmarked Grant (CUHK419409). Duration: 01-01-2010 to 31-12-2012. Grant amount: HK\$ 633,600.
- Co-Investigator, (with Wenbao Ai), *Theory and Global Numerical Solution Methods for Nonconvex Quadratic Optimization with Quadratic Constraints*, National Science Foundation of China (10971017). Duration: 01-01-2010 to 31-12-2012. Grant amount: RMB 260,000.
- Principal Investigator, *Optimization Models and Algorithms for Dynamic Spectrum Management*, RGC Earmarked Grant (CUHK419208). Duration: 01-01-2009 to 31-12-2010. Grant amount: HK\$ 358,660.
- Co-Investigator, (with K. Ma and P.C. Ching), *Multi-Channel Detection and Estimation Using Conic Optimization*, RGC Earmarked Grant (CUHK415908). Duration: 01-08-2008 to 31-07-2010. Grant amount: HK\$ 357,279.
- Co-Investigator, (with Y.Q. Bai *et al.*), *Symmetric Cone Programming and Its Applications in the Coding Theory*, National Science Foundation of China (10771133). Duration: 01-01-2008 to 31-12-2010. Grant amount: RMB 230,000.
- Principal Investigator, *Applications of Randomization Methods in Engineering Management*, RGC Direct Allocation (ID: 2050419). Duration: 01-01-2008 to 31-12-2009. Grant amount: HK\$ 91,166.
- Principal Investigator, *Convex Matrix Programming: Models and Solution Methods*, RGC Earmarked Grant (CUHK418406). Duration: 01-01-2007 to 31-12-2009. Grant amount: HK\$ 534,000.
- Principal Investigator, *Applications of Complex Semidefinite Programming*, RGC Earmarked Grant (CUHK418505). Duration: 01-01-2006 to 31-12-2008. Grant amount: HK\$ 538,836.



- Principal Investigator, *Continuous Linear Programming – Computational and Control Perspectives*, (with D.D. Yao and X.Y. Zhou), RGC Earmarked Grant (CUHK4242/04E). Duration: 01-01-2005 to 31-12-2007. Grant amount: HK\$ 506,447.
- Principal Investigator, *Nonnegative Mappings and Its Applications in Robust Optimization*, RGC Earmarked Grant (CUHK4174/03E). Duration: 01-10-2003 to 30-09-2006. Grant amount: HK\$ 827,632.
- Principal Investigator, *Primal-Dual Interior Point Approach to Multiple Stage Stochastic Programming*, RGC Earmarked Grant (CUHK4233/01E). Duration: 01-10-2001 to 30-09-2004. Grant amount: HK\$ 580,873.
- Principal Investigator, *Conic Optimization: Theory and Methods*, RGC Earmarked Grant (CUHK4181/00E). Duration: 01-10-2000 to 30-09-2003. Grant amount: HK\$ 437,817.
- Co-Investigator, *Linear Quadratic Control via Semidefinite Programming, with Applications*, (with D.D. Yao and X.Y. Zhou), RGC Earmarked Grant (CUHK4175/00E). Duration: 01-10-2000 to 30-09-2003. Grant amount: HK\$ 635,817.
- Principal Investigator, Summer Research Project (97000.08/00.1125/phvd), Trustfonds, Erasmus University Rotterdam. Duration: 2001 to 2003. Grant amount: NLG 30,000 ( $\approx$  US\$ 15,000).
- Principal Investigator, *Sensitivity Analysis and High Performance Optimization Methods*, Direct Grant (ID 2050238), Engineering Faculty, The Chinese University of Hong Kong. Duration: 01-12-1999 to 30-11-2001. Grant amount: HK\$ 150,000.
- Co-Investigator, *High Performance Optimization Techniques*, NWO (Netherlands Organization of Sciences) Grand Research Project (in cooperation with TU Delft, TU Eindhoven and University of Utrecht). Duration: 1997 to 2000. Total grant amount: NLG 800,000 ( $\approx$  EURO 400,000).

## Publications:

### *Refereed Journal Papers*

1. B. Chen, S. He, Z. Li, and S. Zhang, *On new classes of nonnegative symmetric tensors*. To appear in *SIAM Journal on Optimization*.
2. B. Jiang, F. Yang, and S. Zhang, *Tensor and Its Tucker Core: the Invariance Relationships*. To appear in *Numerical Linear Algebra with Applications*.
3. B. Jiang, Z. Li, and S. Zhang, *On Cones of Nonnegative Quartic Forms*, *Foundations of Computational Mathematics*, 17, 161 – 197, 2017.

4. T. Lin, S. Ma and S. Zhang, *An Extragradient-Based Alternating Direction Method for Convex Minimization*, *Foundations of Computational Mathematics*, 17, 35 – 59, 2017.
5. B. Jiang, S. Ma, M. Hardin, L. Qiao, J. Causey, I. Bitts, D. Johnson, S. Zhang and X. Huang, *SparRec: An effective matrix completion framework of missing data imputation for GWAS*, *Scientific Reports*, 6, Article Number: 35534 (2016).
6. X. Gao and S. Zhang, *First-Order Algorithms for Convex Optimization with Nonseparate Objective and Coupled Constraints*, *Journal of Operations Research Society of China*, DOI: 10.1007/s40305-016-0131-5, June 2016.
7. T. Lin, S. Ma, and S. Zhang, *Iteration Complexity Analysis of Multi-Block ADMM for a Family of Convex Minimization without Strong Convexity*, *Journal of Scientific Computing*, 69 (1), 52 – 81, 2016.
8. S. Tao, D. Boley and S. Zhang, *Local Linear Convergence of ISTA and FISTA on the LASSO Problem*, *SIAM Journal on Optimization*, 26 (1), 313 - 336, 2016.
9. Y. Liu, S. Ma, Y. Dai and S. Zhang, *A Smoothing SQP Framework for a Class of Composite  $L_q$  Minimization over Polyhedron*, *Mathematical Programming*, 158 (1-2), 467 – 500, 2016.
10. B. Jiang, Z. Li and S. Zhang, *Characterizing Real-Valued Multivariate Complex Polynomials and Their Symmetric Tensor Representations*, *SIAM Journal on Matrix Analysis and Applications*, 37 (1), 381 - 408, 2016.
11. T. Lin, S. Ma, and S. Zhang, *On the Sublinear Convergence Rate of Multi-block ADMM*, *Journal of Operations Research Society of China*, 3 (3), 251 - 274, 2015.
12. S. Ma, D. Johnson, C. Ashby, D. Xiong, C.L. Cramer, J.H. Moore, S. Zhang, and X. Huang, *SPARCoC: a new framework for molecular pattern discovery and cancer gene identification*, *PLOS ONE*, 10 (3): e0117135. doi: 10.1371/journal.pone.0117135. Published online on March 13, 2015.
13. Z. Li, A. Uschmajew, and S. Zhang, *Linear Convergence Analysis of the Maximum Block Improvement Method for Spherically Constrained Optimization*, *SIAM Journal on Optimization*, 25 (1), 210 - 233, 2015.
14. B. Chen, Z. Li, and S. Zhang, *On tensor Tucker decomposition: the case for an adjustable core size*, *Journal of Global Optimization* 62 (4), 811 – 832, 2015.
15. T. Lin, S. Ma, and S. Zhang, *On the Global Linear Convergence of the ADMM with Multi-Block Variables*, *SIAM Journal on Optimization*, 25 (3), 1478 - 1497, 2015.

16. B. Jiang, S. Ma, and S. Zhang, *Tensor Principal Component Analysis via Convex Optimization*, *Mathematical Programming*, 150, 423 – 457, 2015.
17. X. Huang *et al.*, *Big data - a 21st century science Maginot Line? No-boundary thinking: shifting from the big data paradigm*, *BioData Mining*, 8 (7) DOI 10.1186/s13040-015-0037-5, 2015.
18. B. Jiang, S. Ma, and S. Zhang, *Alternating Direction Method of Multipliers for Real and Complex Polynomial Optimization Models*. *Optimization*, 63 (6), 883 – 898, 2014.
19. B. Jiang, Z. Li, and S. Zhang, *Approximation Methods for Complex Polynomial Optimization*, *Computational Optimization and Applications*, 59 (1), 219 – 248, 2014.
20. S. He, B. Jiang, Z. Li, and S. Zhang, *Probability Bounds for Polynomial Functions in Random Variables*, *Mathematics of Operations Research*, 39 (3), 889 – 907, 2014.
21. S.I. Birbil, J.B.G. Frenk, J. Gromicho, and S. Zhang, *A Network Airline Revenue Management Framework Based on Decomposition by Origins and Destinations*, *Transportation Science*, 48 (3), 313 – 333, 2014.
22. S. He, Z. Li, and S. Zhang, *General Constrained Polynomial Optimization: an Approximation Approach*, *Mathematics of Computation*, S 0025-5718(2014)02875-5. Article electronically published on July 24, 2014.
23. S. He, B. Jiang, Z. Li and S. Zhang, *Moments Tensors, Hilbert's Identity, and k-wise Uncorrelated Random Variables*, *Mathematics of Operations Research*, 39 (3), 775 – 788, 2014.
24. M.H. Wong and S. Zhang, *On Distributional Robust Probability Functions and Their Computations*, *European Journal of Operational Research*, 233, 23 - 33, 2014.
25. X. Huang *et al.*, *No-boundary thinking in bioinformatics research*, *BioData Mining*, 6 (19), 2013.
26. Y.W. Huang, D.P. Palomar, and S. Zhang, *Lorentz-Positive Maps and Quadratic Matrix Inequalities with Applications to Robust MISO Transmit Beamforming*, *IEEE Transaction on Signal Processing*, 61 (5), 1121 – 1130, 2013.
27. X. Chen, J. Peng and S. Zhang, *Existence of Sparse Solutions to the Standard Quadratic Programming with Random Matrices*, *Mathematical Programming*, Ser. A, 141, 273 - 293, 2013.
28. A. Aubry, A. De Maio, B. Jiang, and S. Zhang, *Ambiguity Function Shaping for Cognitive Radar via Complex Quartic Optimization*, *IEEE Transaction on Signal Processing*, 61, 5603 - 5619, 2013.
29. S. He, X.G. Wang, and S. Zhang, *On a Generalized Cournot Oligopolistic Competition Game*, *Journal of Global Optimization*, 56 (40), 1335 – 1345, 2013.

30. S. He, Z. Li, and S. Zhang, *Approximation Algorithms for Discrete Polynomial Optimization*. Journal of Operations Research Society of China, 1, 3 – 36, 2013.
31. M.H. Wong and S. Zhang, *Computing Best Bounds for Nonlinear Risk Measures with Partial Information*. Insurance: Mathematics and Economics, 52 (2), 204 – 212, 2013.
32. S. He, J. Zhang, S. Zhang, *Polymatroid Optimization, Submodularity, and Joint Replenishment Games*, Operations Research, 60 (1), 128 – 137, 2012.
33. Y. Huang, Q. Li, W.K. Ma, and S. Zhang, *Robust Multicast Beamforming for Spectrum Sharing-based Cognitive Radios*, IEEE Transaction on Signal Processing, 60 (1), 527 – 533, 2012.
34. B. Chen, S. He, Z. Li, and S. Zhang, *Maximum Block Improvement and Polynomial Optimization*, SIAM Journal on Optimization, 22, 87 – 107, 2012.
35. A. De Maio, Y. Huang, M. Piezzo, S. Zhang and A. Farina, *Design of Optimized Radar Codes with a Peak to Average Power Ratio Constraint*, IEEE Transactions on Signal Processing, 59 (6), 2683 – 2697, 2011.
36. A. De Maio, Y. Huang, D.P. Palomar, S. Zhang and A. Farina, *Fractional QCQP with Applications in ML Steering Direction Estimation for Radar Detection*, IEEE Transactions on Signal Processing, 59 (1), 172 – 185, 2011.
37. L. Chen, S. He, and S. Zhang, *When all risk-adjusted performance measures are the same: In praise of the Sharpe ratio*, Quantitative Finance, 11 (10), 1439 – 1447, 2011.
38. L. Chen, S. He, and S. Zhang, *Tight Bounds for Some Risk Measures, with Applications to Robust Portfolio Selection*, Operations Research, 59 (4), 847 – 865, 2011.
39. A. De Maio, Y. Huang, M. Piezzo, S. Zhang and A. Farina, *Design of Radar Receiver Filters Optimized According to  $L_p$ -norm Based Criteria*, IEEE Transactions on Signal Processing, 59 (8), 4023 – 4029, 2011.
40. W. Ai, Y.W. Huang, and S. Zhang, *New Results on Hermitian Matrix Rank-One Decomposition*, Mathematical Programming Ser. A, 128, 253 – 283, 2011.
41. S. He, M. Li, S. Zhang and Z.Q. Luo, *A Nonconvergent Example for the Iterative Water-filling Algorithm*, Numerical Algebra, Control and Optimization, 1 (1), 147 – 150, 2011.
42. S. He, Z. Li, and S. Zhang, *Approximation Algorithms for Homogeneous Polynomial Optimization with Quadratic Constraints*, Mathematical Programming Ser. B, 125, 353 – 383, 2010.
43. Y.W. Huang and S. Zhang, *Approximation Algorithms for Indefinite Complex Quadratic Maximization Problems*, SCIENCE CHINA Mathematics, 53 (10) 2697 – 2708, 2010.

44. Z.Q. Luo, W.K. Ma, A.M.C. So, Y. Ye, and S. Zhang, *Semidefinite Relaxation of Quadratic Optimization Problems*, IEEE Signal Processing Magazine 27 (3), 20 – 34, 2010.
45. S. He, J. Zhang, S. Zhang, *Bounding Probability of Small Deviation: A Fourth Moment Approach*, Mathematics of Operations Research, 35 (1), 208 – 232, 2010.
46. Z.Q. Luo and S. Zhang, *A Semidefinite Relaxation Scheme for Multivariate Quartic Polynomial Optimization With Quadratic Constraints*, SIAM Journal on Optimization, 20 (4), 1716 – 1736, 2010.
47. A. De Maio, S. De Nicola, Y. Huang, D.P. Palomar, S. Zhang and A. Farina, *Code Design for Radar STAP via Optimization Theory*, IEEE Transactions on Signal Processing, 58 (2), 679 – 694, 2010.
48. Z.Q. Luo and S. Zhang, *Duality Gap Estimation and Polynomial Time Approximation for Optimal Spectrum Management*, IEEE Transactions on Signal Processing, 57 (7), 2675 – 2689, 2009.
49. X.Q. Wang, S. Zhang, and D.D. Yao, *Separated Continuous Conic Programming: Strong Duality and an Approximation Algorithm*, SIAM Journal on Control and Optimization, 48 (4), 2118 – 2138, 2009.
50. W. Ai and S. Zhang, *Strong Duality for the CDT Subproblem: A Necessary and Sufficient Condition*, SIAM Journal on Optimization, 19 (4), 1735 – 1756, 2009.
51. A. De Maio, S. De Nicola, Y.W. Huang, Z.Q. Luo, and S. Zhang, *Design of Phase Codes for Radar Performance Optimization With a Similarity Constraint*, IEEE Transactions on Signal Processing, 57 (2), 610 – 621, 2009.
52. A. De Maio, S. De Nicola, Y.W. Huang, S. Zhang, and A. Farina, *Adaptive Detection and Estimation in the Presence of Useful Signal and Interference Mismatches*, IEEE Transactions on Signal Processing, 57 (2), 436 – 450, 2009.
53. S.I. Birbil, J.B.G. Frenk, J. Gromicho, and S. Zhang, *An Integrated Approach to Single-Leg Airline Revenue Management: The Role of Robust Optimization*, Management Science, 55 (1), 148 – 163, 2009.
54. W. Ai, Y.W. Huang, and S. Zhang, *On the Low Rank Solutions for Linear Matrix Inequalities*, Mathematics of Operations Research, 33 (4), 965 – 975, 2008.
55. A. De Maio, S. De Nicola, Y.W. Huang, S. Zhang, and A. Farina, *Code Design to Optimize Radar Detection Performance Under Accuracy and Similarity Constraints*, IEEE Transactions on Signal Processing, 56 (11), 5618 – 5629, 2008.

56. J.F. Liang, S. Zhang and D. Li, *Optioned Portfolio Selection: Models and Analysis*, *Mathematical Finance*, 18 (4), 569 – 593, 2008.
57. Z.Q. Luo and S. Zhang, *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), 2 (1), 57 – 73, 2008.
58. S. He, Z.Q. Luo, J. Nie, S. Zhang, *Semidefnite Relaxation Bounds for Indefinite Homogeneous Quadratic Optimization*, *SIAM Journal on Optimization*, 19, 503 – 523, 2008.
59. R.J. Shen and S. Zhang, *Robust Portfolio Selection Based on a Multi-stage Scenario Tree*, *European Journal of Operational Research*, 191, 864 – 887, 2008.
60. J. Brinkhuis and S. Zhang, *A D-Induced Duality and Its Applications*, *Mathematical Programming*, 114, 149 – 182, 2008.
61. J. Xie, S. He, S. Zhang, *Randomized Portfolio Selection, with Constraints*, *Pacific Journal of Optimization*, 4, 89 – 112, 2008.
62. D. Xu and S. Zhang, *An Improved Approximation Algorithm for the Uncapacitated Facility Location Problem with Service Installation Costs*, *Operations Research Letters*, 36, 46 – 50, 2008.
63. D. Xu and S. Zhang, *Approximation Bounds for Quadratic Maximization with Semidefnite Programming Relaxation*, *Science in China Series A*, 50, 1583 – 1596, 2007.
64. Z.Q. Luo, N.D. Sidiropoulos, P. Tseng, and S. Zhang, *Approximation Bounds for Quadratic Optimization with Homogeneous Quadratic Constraints*, *SIAM Journal on Optimization*, 18, 1 – 28, 2007.
65. Y.W. Huang and S. Zhang, *Complex Matrix Decomposition and Quadratic Programming*, *Mathematics of Operations Research*, 32, 758 – 768, 2007.
66. D.D. Yao, S. Zhang and X.Y. Zhou, *Tracking a Financial Benchmark Using a Few Assets*, *Operations Research*, 54, 232 – 246, 2006.
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69. W. Ai and S. Zhang, *An  $O(\sqrt{n}L)$  Iteration Primal-Dual Path-Following Method, Based on Wide Neighborhoods and Large Updates, for Monotone LCP*, *SIAM Journal on Optimization*, 16, 400 – 417, 2005.

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76. Z.Q. Luo, J.F. Sturm and S. Zhang, *Multivariate Nonnegative Quadratic Mappings*, *SIAM Journal on Optimization*, 14, 1140 – 1162, 2004.
77. D.D. Yao, S. Zhang and X.Y. Zhou, *Stochastic Linear-Quadratic Control via Semidefinite Programming*, *SIAM Review*, 46, 87 – 111, 2004.
78. Y. Ye and S. Zhang, *New Results on Quadratic Minimization*, *SIAM Journal on Optimization*, 14, 245 – 267, 2003.
79. J.F. Sturm and S. Zhang, *On Cones of Nonnegative Quadratic Functions*, *Mathematics of Operations Research*, 28, 246 – 267, 2003.
80. A. Berkelaar, C. Dert, B. Oldenkamp, S. Zhang, *A Primal-Dual Decomposition-Based Interior Point Approach to Two-Stage Stochastic Linear Programming*, *Operations Research*, 50, 904 – 915, 2002.
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91. J. Csirik, J.B.G. Frenk, M. Labbé and S. Zhang, *Two Simple Algorithms for Bin Covering*, ACTA Cybernetica, 14, 13 – 25, 1999.
92. S. Zhang, *New Variants of Finite Criss-Cross Pivot Algorithms for Linear Programming*, European Journal of Operational Research, 116, 607 – 614, 1999.
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94. J.F. Sturm and S. Zhang, *Symmetric Primal-Dual Path Following Algorithms for Semidefinite Programming*, Applied Numerical Mathematics, 29, 301 – 315, 1999.
95. J.B.G. Frenk, J.F. Sturm and S. Zhang, *An Interior-Point Based Subgradient Method for Non-differentiable Convex Programming*, Optimization Methods and Software, 10, 197 – 215, 1998.
96. J.F. Sturm and S. Zhang, *On the Long Step Path-Following Method for Semidefinite Programming*, Operations Research Letters, 22, 145 – 150, 1998.
97. J.A.A. van der Veen, G.J. Woeginger and S. Zhang, *Sequencing Jobs that Require Common Resources on a Single Machine: A Solvable Case of the TSP*, Mathematical Programming, 82, 235 – 254, 1998.



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99. Z.Q. Luo, J.F. Sturm and S. Zhang, *Superlinear Convergence of a Symmetric Primal-Dual Path Following Algorithm for Semidefinite Programming*, *SIAM Journal on Optimization*, 8, 59 – 81, 1998.
100. J.F. Sturm and S. Zhang, *On a Wide Region of Centers and Primal-Dual Interior Point Algorithms for Linear Programming*, *Mathematics of Operations Research*, 22, 408 – 431, 1997.
101. J.A.A. van der Veen and S. Zhang, *Low-Complexity Algorithms for Sequencing Jobs with a Fixed Number of Job-Classes*, *Computers and Operations Research*, 23, 1059 – 1067, 1996.
102. J.F. Sturm and S. Zhang, *New Complexity Results for the Iri-Imai Method*, *Annals of Operations Research*, 62 (Special Volume on Interior Point Methods), 539 – 564, 1996.
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104. A.I. Barros, J.B.G. Frenk, S. Schaible and S. Zhang, *A New Algorithm for Generalized Fractional Programs*, *Mathematical Programming*, 72, 147 – 175, 1996.
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108. J.F. Sturm and S. Zhang, *A Potential Reduction Method for Harmonically Convex Programming*, *Journal of Optimization Theory and Applications*, 84, 181 – 205, 1995.
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111. J.B.G. Frenk, M. Labbé and M. van Vliet and S. Zhang, *Improved Algorithms for Machine Allocation in Manufacturing Systems*, *Operations Research*, 42, 523 – 530, 1994.

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*Books/Special Volumes*

1. Z. Li, S. He and S. Zhang, *Approximation Methods for Polynomial Optimization*, Springer, 2012.
2. D. Li, X.L. Sun and S. Zhang (eds.), *Special Issue for ICOTA*, Journal of Global Optimization, 2012.
3. S. Zhang and Z.Q. Luo (eds.), *Special Issue in Memory of Paul Tseng*, Pacific Journal of Optimization, Vol. 8, No. 1, January 2012.
4. C. Papadimitriou and S. Zhang (eds.), *Internet and Network Economics*, Lecture Notes in Computer Science 5385, Springer, 2008.
5. E. Andersen, E. de Klerk, L. Tuncel, H. Wolkowicz and S. Zhang (eds.), *Special Issue on Large-Scale Nonlinear and Semidefinite Programming (dedicated to Jos Sturm)*, Mathematical Programming, Vol. 109, Nos. 2-3, 2006.

6. M.Y. Yue (editor), J.Y. Han, L. Zhang and S. Zhang (co-editors), *Proceedings of the International Conference on Mathematical Programming (December 19 – 22, 2002)*, Shanghai University Press, Shanghai, 2004.
7. J.B.G. Frenk, K. Roos, T. Terlaky and S. Zhang (eds.), *High Performance Optimization Techniques*, Kluwer Academic Publishers, 1999.
8. S. Zhang, *Stochastic Queue Location Problems*, Tinbergen Institute Research Series 14, Thesis Publishers, Amsterdam, 1991.

*Refereed Book Chapters*

1. S. Ma, B. Jiang, X. Huang, S. Zhang, *Tensor Models: Solution Methods and Applications*, In S. Cui, A. Hero, Z.Q. Luo and J. Moura eds., *Big Data over Networks*, Cambridge University Press, 3 – 36, 2016.
2. Y. Huang, A. De Maio, and S. Zhang, *Semidefinite Programming, Matrix Decomposition, and Radar Code Design*. In D.P. Palomar and Y.C. Eldar eds., *Convex Optimization in Signal Processing and Communications*, Cambridge University Press, 192 – 228, 2010.
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4. J. Brinkhuis and S. Zhang, *A D-Induced Duality and Its Applications*, In M.Y. Yue (ed.), J.Y. Han, L. Zhang and S. Zhang (co-eds.), *Proceedings of the International Conference on Mathematical Programming*, Shanghai University Press, 112 – 123, 2004.
5. S. Zhang, *A Primal-Dual Interior Point and Decomposition Approach to Multi-stage Stochastic Programming*. In D.D. Yao, H. Zhang, and X.Y. Zhou eds, *Stochastic Models and Optimization*, Springer-Verlag, Chapter 5, 137 – 170, 2003.
6. D.D. Yao, S. Zhang and X.Y. Zhou, *Linear Quadratic Control Revisited: A View Through Semidefinite Programming*. In W. Gong and L. Shi eds, *Modeling, Control and Optimization of Complex Systems (in honor of Professor Yu-Chi Ho)*, Kluwer, Chapter 9, 195 – 235, 2002.
7. J.F. Sturm and S. Zhang, *A Dual and Interior Point Approach to Solve Convex Min-Max Problems*. In D.-Z. Du and P.M. Pardalos eds. *Minimax and Its Applications*, Kluwer, 69 – 78, 1995.

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*Refereed Conference Proceedings*

1. S. Tao, D. Boley, S. Zhang, *Convergence of Common Proximal Methods for  $L_1$ -Regularized Least Squares*, Proceedings of the Twenty-Fourth International Joint Conference on Artificial Intelligence, 2015.
2. S. Zhang, K. Wang, B. Chen, and X. Huang, *A New Framework for Co-clustering of Gene Expression Data*, M. Loog *et al.* eds., PRIB2011, Lecture Notes in Bio-Informatics 7036, Springer-Verlag, pp. 1 – 12, 2011.
3. A. De Maio, Y. Huang, M. Piezzo, S. Zhang and A. Farina, *Radar Code Design with a Peak to Average Power Ratio Constraint: a Randomized Approximate Approach*, EUSIPCO 2011.
4. S. De Nicola, Y. Huang, A. De Maio, S. Zhang and A. Farina, *Code Optimization with Similarity and Accuracy Constraints*, Proceedings of IEEE Radar Conference, Rome Italy, 414 – 419, 2008.
5. Z.Q. Luo, G.B. Giannakis, S. Zhang, *Optimal Linear Decentralized Estimation in a Bandwidth Constrained Sensor Network*, Proceedings International Symposium on Information Theory, 1441 – 1445, 2005.
6. D.D. Yao, S. Zhang and X.Y. Zhou, *Linear Quadratic Control via Semi-Definite Programming*, Proceedings of IEEE 38th Conference on Decision and Control, 1027 – 1033, 1999.
7. J.B.G. Frenk, M.T. Melo, S. Zhang, *Convergence of the Weiszfeld Method for Solving Single Facility Continuous Space Location Models*, Proceedings of VI Euro Working Group on Locational Analysis, 97 – 104, 1992.
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*Papers Submitted for Publication*

1. X. Gao, X. Li, and S. Zhang, *Online Learning with Non-Convex Losses and Non-Stationary Regret*, 2017.
2. Y. Xu and S. Zhang, *Accelerated Primal-Dual Proximal Block Coordinate Updating Methods for Constrained Convex Optimization*, 2017.
3. J. Moulton, X. Li, and S. Zhang, *Robust Fragmentation Approach to Decision-Making Under Distributional Ambiguity*, 2016.
4. X. Gao, Y. Xu, and S. Zhang, *Randomized Primal-Dual Proximal Block Coordinate Updates*, 2016.
5. B. Jiang, T. Lin, S. Ma, and S. Zhang, *Structured Nonconvex and Nonsmooth Optimization: Algorithms and Iteration Complexity Analysis*, 2016.
6. T. Lin, S. Ma, and S. Zhang, *Global Convergence of Unmodified 3-Block ADMM for a Class of Convex Minimization Problems*, 2015.
7. B. Jiang, S. Ma and S. Zhang, *New Ranks for Even-Order Tensors and Their Applications in Low-Rank Tensor Optimization*, 2015.
8. X. Gao, B. Jiang and S. Zhang, *On the Information-Adaptive Variants of the ADMM: an Iteration Complexity Perspective*, 2014.

*Unpublished Technical Reports*

1. B. Jiang and S. Zhang, *Iteration Bounds for Finding  $\epsilon$ -Stationary Points for Structured Nonconvex Optimization*, 2014.
2. S. He, M.H. Wong, and S. Zhang, *On the S-Lemma for Univariate Polynomials*, 2012.
3. S. He, X.G. Wang and S. Zhang, *The Price of Isolation: An Integrated Study of System Inefficiencies*, 2009.
4. J. Brinkhuis, Z.Q. Luo, and S. Zhang, *Matrix Convex Functions With Applications to Weighted Centers for Semidefinite Programming*, Technical Report SEEM2005-06, Department of Systems Engineering & Engineering Management, The Chinese University of Hong Kong, 2005.

5. *Solving Generalized Fractional Programming with Applications*, Technical Report SEEM2004-2, Department of Systems Engineering & Engineering Management, The Chinese University of Hong Kong, 2004 (with S.I. Birbil, J.B.G. Frenk).
6. *On Conically Ordered Convex Programs*, Technical Report SEEM2003-09, Department of Systems Engineering & Engineering Management, The Chinese University of Hong Kong, 2003.
7. *Duality Results for Conic Convex Programming*, Report 9719/A, Econometric Institute, Erasmus University Rotterdam, 1997 (with Z.Q. Luo and J.F. Sturm).
8. *On Purchase Timing Models in Marketing*, Report 9720/A, Econometric Institute, Erasmus University Rotterdam, 1997 (with J.B.G. Frenk).
9. *Duality and Self-Duality for Conic Convex Programming*, Report 9620/A, Econometric Institute, Erasmus University Rotterdam, 1996 (with Z.Q. Luo and J.F. Sturm).
10. *Quasiconvex Functions: How to Separate, If You Must!* Report 9425/A, Econometric Institute, Erasmus University Rotterdam, 1994 (with J.B.G. Frenk and J. Gromicho).
11. *Convex Exact Penalty Functions, Space Dilation and Linear Programming*, Research Memorandum No. 524, Institute of Economic Research, University of Groningen, 1993 (with L. Zhang).
12. *The Simplex Method for Some Special Problems*, Research Memorandum No. 442, Institute of Economic Research, University of Groningen, 1991.
13. *Fast Algorithms for Dual Bin Packing*, Report 9022/A, Erasmus University Rotterdam, 1990 (with J. Csirik, J.B.G. Frenk and M. Labbé).
14. *On Some Dominance Results in Scheduling*, Report 9018/A, Erasmus University Rotterdam, 1990 (with J. Birge, J. Csirik, J.B.G. Frenk and A. Koolen).
15. *The Stochastic  $k$ -Priority Queue Location Problem*, Report 8951/A, Erasmus University Rotterdam, 1989 (with J.B.G. Frenk and M. Labbé).
16. *The Stochastic Queue Location Problem in the Plane*, Report 8948/A, Erasmus University Rotterdam, 1989 (with J.B.G. Frenk, M. Labbé and R. Visscher).
17. *On the Convergence Property of Iri-Imai's Method for Linear Programming*, Report 8917/A, Erasmus University Rotterdam, 1989.
18. *On Vertices Adjacency Characterization and Optimization of Polymatroids*, Report 8916/A, Erasmus University Rotterdam, 1989.

## Services and Professional Activities:

- Services:
  - Mathematical Programming Society (MPS) Council Member at Large (2006 – 2009).
  - Vice President of The Operations Research Society of China (ORSC) (2008 – 2012).
  - Member of the University of Minnesota Senate (2012 – 2014).
  
- Membership of Professional Societies:
  - Member of INFORMS (INstitute For Operations Research and Management Science); since 1990.
  - Member of SIAM (Society for Industrial and Applied Mathematics); since 1993.
  - Member of MPS (Mathematical Programming Society); since 1994.
  
- Editorship:
  - Associate Editor, Management Science (2014 – ).
  - Editorial Board Member, Journal of the Operations Research Society of China (2012 – ).
  - Associate Editor, Operations Research (2006 – ).
  - Associate Editor, SIAM Journal on Optimization (2003 – 2014).
  - Guest Editor, Mathematical Programming, Series B, Special Volume Dedicated to Jos F. Sturm.
  - Associate Editor, TOP (the OR journal of the Spanish Society of Statistics and Operations Research) (2006 – 2012).
  - Editorial Board Member, Pacific Journal of Optimization (2003 – ).
  - Editorial Board Member, Optimization and Engineering (2001 – ).
  
- Research Grant Panel Member & Reviewer:
  - NSF Panelist, 2011, 2014.
  - Hong Kong Research Grant Council (RGC) Engineering Panel Member (2009 – 2013).
  - Hong Kong Research Grant Council (RGC) Engineering Panel Member (Joint Research Scheme) (2014 – 2016).

– Reviewer for *Mathematical Reviews* (1997 – ).

• *International Conference Organization:*

- Co-Organizer (with Z.-Q. Luo), A Special Workshop in Honor of Prof. Paul Tseng: Large Scale Optimization: Analysis, Algorithm and Applications, May 21, 2010, Shanghai, China.
- Co-Chair, Program Committee, WINE 2008 (Workshop on Internet and Network Economics), December 17 – 19, 2008, Shanghai, China.
- Co-Organizer (with Z.-Q. Luo), WOSP 2007 (Workshop on Optimization and Signal Processing), December 19 – 21, 2007, Hong Kong.
- Co-Cluster Chair, INFORMS 2006 (INstitute For Operations Research and Management Science) International, June 25 – 28, 2006, Hong Kong.
- Organizing Committee member, WINE 2005 (Workshop on Internet and Network Economics), December 15 – 17, 2005, Hong Kong.
- Program Committee member and co-cluster chair, IFORS 2005 (International Federation of Operations Research Societies Conference), Hawaii, USA, 2005.
- Program Committee member, ICMSA 2005 (International Conference on Management Science and Applications), June 20 – 22, 2005, Chengdu, China.
- Secretary of the Program Committee, ICMP 2002 (International Conference on Mathematical Programming), December 19 – 22, 2002, Shanghai, China.
- Program Committee member, ICOTA 2001 (The 5th International Conference on Optimization: Techniques and Applications), December 15 – 17, 2001, Hong Kong.
- Organizing Committee member, International Workshop on Operations Research: Stochastic Models and Optimization, Part II, May 28 – 29, 2001, Hong Kong.
- Organizing Committee member, OHTA 2000 (International Workshop on Optimization Techniques and High-Tech Applications), October 23 – 25, 2000, Hong Kong.
- Organizer (co-organizers: J. Brinkhuis and J.B.G. Frenk), HPOPT 1999 (High Performance Optimization Techniques), June 16 – 18, 1999, World Trade Center, Rotterdam, The Netherlands.
- Organizer (co-organizers: J.B.G. Frenk, K. Roos and T. Terlaky), HPOPT 1997 (High Performance Optimization Techniques), August 20 – 22, 1997, World Trade Center, Rotterdam, The Netherlands.

• *Invited Talks (after 2001):*



1. Seminar Talk at Jing Dong Research Lab, Beijing, January 5, 2017.  
*First-Order Algorithms for Block Optimization.*
2. Seminar Talk at Department of Industrial and Enterprise Systems Engineering, University of Illinois at Urbana Champaign, December 8, 2016.  
*First-Order Algorithms for Block Optimization.*
3. Seminar Talk at Department of Integrated Systems Engineering, Ohio State University, November 16, 2016.  
*First-Order Algorithms for Block Optimization.*
4. Plenary Talk at the 5th International Conference on Continuous Optimization, Tokyo, August 6-11, 2016.  
*Variants of the ADMM and Their Convergence Properties.*
5. Invited Talk at International Symposium on Mathematical Programming, Pittsburgh, July 12-17, 2015.  
*Recent Results on the ADMM and Its Variants.*
6. Invited Talk at Workshop Low-Rank Optimization and Applications, Hausdorff Center for Mathematics, University of Bonn, June 8-12, 2015.  
*CP-Rank Approximation and Tensor Completion.*
7. Session Organizer and Speaker at No-Boundary Thinking (NBT) National Meeting, Little Rock, Arkansas, April 12-14, 2015.  
*Tensor and Its Applications in Bioinformatics.*
8. Invited Talk at the No-Boundary Thinking Workshop, Washington DC, November 3, 2014.  
*No Boundary Thinking and the Bio Math Center.*
9. Invited Talk at SIAM Optimization Conference, San Diego, May 19-22, 2014.  
*On Low-Complexity Tensor Approximation and Non-Convex First-Order Optimization.*
10. Invited Talk at the 2nd International Conference on Engineering & Computational Mathematics (ECM2013), Hong Kong, December 16 - 18, 2013.  
*New Results in Tensor and Polynomial Optimization.*
11. Invited Talk at Department of Statistics, University of Chicago, Chicago, November 21, 2013.  
*On Tensor PCA and Other Low-Rank Tensor Approximation Problems.*
12. Invited Talk at International Workshop on Mathematical Issues in Information Sciences, Xidian University, Xian, June 30 - July 4, 2013.  
*Sparse/Low-Rank Solutions in Tensor Optimization.*

13. Seminar Talk at Arkansas Biological Institute, Arkansas State University, November 29, 2012.  
*Optimization and Bio-Informatics.*
14. Invited Talk at Large Scale Conic Optimization Workshop, National University of Singapore, November 19 - 23, 2012.  
*Computing Tensor Principal Components.*
15. Seminar talk at Wayne State University, Detroit, September 17, 2012.  
*New Results on Probability Bounds.*
16. International Symposium on Mathematical Programming (Session Organization and Speaker), Berlin, August 20, 2012.  
*Cones of Nonnegative Polynomials.*
17. Seminar talk at Shanghai University of Finance and Economics, Shanghai, June 27, 2012.  
*Probabilities and Polynomial Optimization.*
18. Midwest Workshop on Control and Game Theory, UIUC, April 28, 2012.  
*Prices of Myopia, Isolation, and Fairness.*
19. Seminar talk at Columbia University, New York, April 24, 2012.  
*On Polynomial Optimization.*
20. Seminar talk at Stern School of Business, New York University, November 30, 2011.  
*A Study of System Inefficiencies.*
21. The Allerton Conference, UIUC, September 29, 2011.  
*On the Price of Isolation.*
22. Invited Speech at Special Workshop on Modern Optimization in honor of Professor YUE Minye's 90th Birthday, Tsinghua University, June 18 - 19, 2011.  
*Probabilities, Polynomials, and Optimization.*
23. Invited 45-minute talk at International Congress of Chinese Mathematicians, December 17 - 22, 2010.  
*Polynomial Optimization and the Hilbert Identity.*
24. Plenary Talk at the 8th International Conference on Optimization: Techniques and Applications, December 10 - 13, 2010, Shanghai, China.  
*The Price of Anarchy and Myopia: A Study of System Inefficiencies.*
25. Invited talk at Chinese Mathematical Programming Conference 2010, May 21 - 25, 2010, Shanghai, China.  
*Optimization with Polynomial Functions.*

26. Semi-plenary talk at the 20th International Symposium on Mathematical Programming, August 23 – 28, 2009, Chicago, USA.  
*Approximation Algorithms for Polynomial Optimization.*
27. Invited talk at The 8th Congress of Operations Research Society of China, October 18 – 20, 2008, Nanjing, China.  
*Approximation Algorithms for Quartic Optimization Problems.*
28. Plenary talk at The 4th Sino-Japan Optimization Meeting (SJOM), August 27 – 30, 2008, Tainan, Taiwan.  
*Approximation Algorithms for Quadratic Optimization based on SDP Relaxation.*
29. Semi-plenary talk at Foundations of Computational Mathematics (FoCM), June 24 – 26, 2008, Hong Kong.  
*Beyond Quadratics: Quartic Optimization.*
30. SIAM Optimization Conference, May 10 – 13, 2008, Boston, USA.  
*Matrix Convex Functions and Optimization.*  
*Matrix Rank One Decomposition and Applications.*
31. The International Conference on Nonlinear Programming and Applications, April 7 – 10, 2008, Beijing, China.  
*Matrix Rank-One Decomposition and Applications.*
32. The Tsinghua and Chinese University of Hong Kong Theory Workshop, November 30 – December 1, 2007, Beijing, China.  
*Randomized Algorithms for Quadratic Optimization, via Semidefinite Programming.*
33. The 6th International Conference on Numerical Linear Algebra and Optimization, September 7 – 12, 2007, Urumqi, China.  
*Spectrum Management and Optimization.*
34. ICCOPT 2, August 13 – 16, 2007, McMaster University, Canada.  
*Matrix Decomposition, Non-Convex QP and the Strong Lagrangian Duality.*
35. EURO XXII, July 8 – 11, 2007, Prague, Czech Republic.  
*Nonconvex Quadratic Optimization, Randomization, and Approximation Ratios.*
36. The 32nd Conference on the Mathematics of Operations Research, January 16 – 18, 2007, Lunteren, The Netherlands.  
*Title of Lecture 1: SDP, Randomization, and Combinatorial Optimization.*  
*Title of Lecture 2: Ambiguity, Uncertainty, and Robust Optimization.*
37. The BIRS Workshop on Optimization and Engineering Applications, November 11 – 16, 2006, Banff, Canada.

- Optimization in Resource Management: Complexity, Lyapunov Theorem, and Approximation.*
38. The Ninth Annual Kavli Chinese-American Frontiers of Science Symposium, October 26 – 28, 2006, Irvine, California.  
*“To Be or Not To Be”: A Tale of Optimization and Randomization.*
  39. Workshop on Optimization: Theory and Applications, July 9 – 11, 2006, Beijing, China.  
*Complex QP, SDP, and Randomization: Approximation Ratios and Applications.*
  40. EURO XXI, July 2 – 5, 2006, Reykjavik, Iceland.  
*Approximation Algorithms for Quadratic Optimization.*
  41. INFORMS International, June 25 – 28, 2006, Hong Kong.  
*Extended Trust-Region Subproblem and Semidefinite Programming Relaxation.*
  42. International Workshop on Mathematical Finance and Insurance, May 27 – June 3, 2006, Lijiang, China.  
*Randomized Decision Making: with Applications in Portfolio Selection.*
  43. Conference of the Mathematical Programming Society of China, April 23 – 25, 2006, Nanning, China.  
*Complex Quadratic Optimization: Some Recent Developments.*
  44. International Conference on High Performance Scientific Computing, March 6 – 10, 2006, Hanoi, Vietnam.  
*Approximation Algorithms for Quadratic Optimization.*
  45. Workshop on Semidefinite Programming, January 9 – 13, 2006, Singapore.  
*Separated Continuous Conic Programming: Theory and Method.*
  46. The 3rd Sino-Japan Optimization Meeting, October 31 – November 2, 2005, Singapore.  
*Complex Quadratic Optimization and Approximation Algorithms.*
  47. International Conference on Applied Mathematics, August 22 – 26, 2005, Bandung, Indonesia.  
*Robust Investment Models.*
  48. Co-Cluster Chair, IFORS 2005, July 11 – 15, 2005, Hawaii, USA.  
*Matrix Convex Functions.*
  49. International Conference of Management Science and Applications, June 20 – 22, 2005, Chengdu, China.  
*Conic Optimization, Semidefinite Programming, and Applications.*

50. International Conference on Scientific Computing 05, June 4 – 8, 2005, Nanjing Normal University, China.  
*Complex Semidefinite Programming and Its Applications.*
51. International Workshop on Optimization (IWOS2005), May 28 – 30, 2005, Tongji University Shanghai, China.  
*Complex Semidefinite Programming and Its Applications.*
52. Mini-symposium Organizer, SIAM Optimization Conference, May 15 – 19, 2005, Stockholm, Sweden.  
*On Matrix Convex Functions.*
53. Semi-plenary talk, 1st ICCOPT (International Conference on Continuous Optimization), August 2 – 4, 2004, Rensselaer Polytechnic Institute, USA.  
*Complex Variables, Hermitian PSD Matrices, and Optimization.*
54. Panel member, Forum on Management Science supported by the NSF of China, July 26, 2004, Chengdu, China.
55. The Third International Conference on Optimization and Control with Applications (OCA2004), July 25 – 31, 2004, Chongqing and Chengdu, China.  
*On Conically Ordered Convex Programs.*
56. The 8th International Workshop on High Performance Optimization Techniques: Optimization and Polynomials (HPOPT2004), dedicated to the memory of Jos Sturm, June 23 – 25, 2004, Amsterdam, The Netherlands.  
*Ten Years Collaboration with Jos Sturm – A Tribute with Personal Memories.*
57. Workshop on Mathematical Finance and Insurance, May 24 – 31, 2004, Tunxi, China.  
*Asset Selection via SDP.*
58. International Workshop on Large Scale Nonlinear Programming and Semidefinite Programming (in memory of Jos F. Sturm), May 12 – 15, 2004, University of Waterloo, Canada.  
*Happy years in Groningen and Rotterdam.*
59. International Symposium on Mathematical Programming, August 18 – 22, 2003, Copenhagen, Denmark.  
*On the D-induced duality and its applications.*
60. INFORMS Meeting, November 17 – 20, 2002, San Jose, USA.  
*Nonnegative mappings and the D-duality.*
61. Optimization and Control with Applications (OCA2002), August 18 – 22, 2002, Tunxi, China.  
*A new self-dual embedding method for convex programming.*

62. High Performance Optimization Techniques (HPOPT2002), June 27 – 28, 2002.  
*On cones of nonnegative mappings.*
63. International Conference on Recent Advances in Computational Mathematics (ICRACM2001), October 10 – 13, 2001, Matsuyama, Japan.  
*SDP and quadratic optimization.*
64. Workshop Smooth and Nonsmooth Optimization, July 2001, Erasmus University Rotterdam, The Netherlands.  
*Stochastic optimization and interior point methods.*
65. Seminar at TU Delft, July 2001, Delft, The Netherlands.  
*Quadratic optimization and SDP relaxation.*
66. Workshop on Stochastic Models & Operations Research, May 23 – 29, 2001, Beijing and Hong Kong.  
*On stochastic programming.*
67. International Conference on Numerical Optimization and Algebra, May 2001, Dun Huang.  
*Cones of quadratic functions.*
68. International Workshop on Mathematical Finance, May 2001, Shanghai.  
*Stochastic programming and financial decision making.*