

## RESEARCH PAPERS

### Bioinformatics

#### REFEREED JOURNAL ARTICLES

- [1] Xiangsun Zhang, Jihong Zhang and Lingyun Wu, A reconstruction algorithm to solve positional sequencing by hybridization, *J. of Systems Science and Mathematical Sciences*, vol.22, no.3, pp.258-269, 2002 (in Chinese).
- [2] Ji-Hong Zhang, Ling-Yun Wu and Xiang-Sun Zhang, Reconstruction of DNA sequencing by hybridization, *Bioinformatics*, vol.19, no.1, pp.14-21, 2003.
- [3] Rui-Sheng Wang, Ling-Yun Wu, Ji-Hong Zhang and Xiang-Sun Zhang, Algorithms for the SNP haplotype assembly problem, *Applied Mathematics, A Journal of Chinese Universities* (Series A), vol.19, pp.515-528, 2004.
- [4] Zhenping Li, Yong Wang, Yuying Zhao and Xiang-Sun Zhang, Haplotype inference and mating graphs, *Applied Mathematics, A Journal of Chinese Universities* (Series A), vol.19, pp.567-576, 2004.
- [5] Xiang-Sun Zhang, Yong Wang, Zhong-Wei Zhan, Ling-Yun Wu and Luonan Chen, Exploring protein's optimal HP configurations by self-organizing mappings, *J. of Bioinformatics and Computational Biology*, vol.3, no.2, pp.385-400, 2005.
- [6] Ruisheng Wang, Lingyun Wu, Zhenping Li, and Xiangsun Zhang, Haplotype reconstruction from SNP fragments by minimum error correction, *Bioinformatics*, vol.21, no.10, pp.2456-2462, 2005.
- [7] Tianshou Zhou, Luonan Chen, Yun Tang, and Xiangsun Zhang, Aligning multiple protein structures by deterministic annealing, *J. of Bioinformatics and Computational Biology*, vol.3, no.4, pp.837-860, 2005.
- [8] Zhenping Li, Wenfeng Zhou, Xiangsun Zhang, Luonan Chen, A parsimonious tree-grow method for haplotype inference, *Bioinformatics*, vol.21, no.17, pp.3475-3481, 2005.
- [9] Ji-hong Zhang, Ling-yun Wu and Xiang-sun Zhang, A reconstruction algorithm to DNA sequencing by hybridization with target DNA length error, *Acta Mathematicae Applicatae Sinica* vol.28, no.3, pp.385-395, 2005 (in Chinese).
- [10] Yong Wang, Zhongwei Zhan, Lingyun Wu, and Xiangsun Zhang, An improved self-organizing map algorithm for protein folding and its realization, *System Science and Mathematics*, vol.25, no.4, 2005.
- [11] Yuying Zhao, Lingyun Wu, Jihong Zhang, Ruisheng Wang, and Xiangsun Zhang, The SNPs haplotype assembly problem of a single individual, *Com-*

- putational Biology and Chemistry*, vol.29, pp.281-287, 2005.
- [12] Zhenping Li, Xiang-sun Zhang and Luonan Chen, Unique optimal folding of proteins on a triangular lattice, *Applied Bioinformatics*, vol.4, no.2, pp.105-116, 2005.
  - [13] Luonan Chen, Ling-Yun Wu, Ruiqi Wang, Yong Wang, Shihua Zhang, Xiang-Sun Zhang, Comparison of protein structures by multi-objective optimization, *Genome Informatics*, vol.16, no.2, pp.114-124, 2005.
  - [14] Xiang-Sun Zhang, Rui-Sheng Wang, Ling-Yun Wu, Luo-Nan Chen, Models and algorithms for the haplotyping problem, *Current Bioinformatics*, vol.1, no.1, pp.105-114, 2006
  - [15] Yong Wang, Ling-Yun Wu, Xiang-Sun Zhang and Luonan Chen, Exploring the Classification of Protein Structures on Geometric Patterns by Neural Networks, *International Journal of Computational Intelligence Research (IJ-CIR)*, vol.2, no.1, pp.105-109, 2006
  - [16] Yong Wang, Ling-Yun Wu, Luonan Chen and Xiang-Sun Zhang, Supervised classification of protein structures based on convex hull representation, *International Journal of Bioinformatics Research and Applications*, Vol. 3, No. 2, 2006.
  - [17] Shi-hua Zhang, Xiang-Sun Zhang, Visualization of conformational space based on  $C\alpha - C\alpha$  distance, *Chinese J. of Bioinformatics* (in Chinese), vol.4, no.4, pp.153-156, 2006
  - [18] Luonan Chen, Ling-Yun Wu, Yong Wang, Xiang-Sun Zhang, Inferring Protein Interactions from Experimental Data by Association Probabilistic Method, *Proteins: Structure, Function, and Bioinformatics*, vol.62, pp.833-837, 2006
  - [19] Shihua Zhang, Rui-Sheng Wang, Xiang-Sun Zhang, Identification of overlapping community structure in complex networks using fuzzy c-means clustering, *Physica A*, 374(1), pp.483-490, 2007
  - [20] Xiang-Sun Zhang, Rui-Sheng Wang, Ling-Yun Wu, Wei Zhang, Minimum conflict individual haplotyping from SNP fragments and related genotype, *Evolutionary Bioinformatics Online*, vol.2, pp.271-280, 2006
  - [21] Luonan Chen, Ling-Yun Wu, Yong Wang, Shihua Zhang, Xiang-Sun Zhang, Revealing divergent evolution, identifying circular permutations and detecting active-sites by protein structure comparison, *BMC: Structural Biology*, 2006, 6:18
  - [22] Shihua Zhang, Xue-Mei Ning, Xiang-Sun Zhang, Identification of functional modules in PPI network by clique percolation clustering, *Computational Biology and Chemistry*, vol.30, pp.445-451, 2006
  - [23] Yong Wang, Trupti Joshi, Xiang-Sun Zhang, Dong Xu, Luonan Chen, Inferring gene regulatory networks from multiple microarray datasets, *Bioinformatics*, vol.22, no.19, pp.2413-2420, 2006
  - [24] Zhen-Ping Li, Ling-Yun Wu, Yu-Ying Zhao and Xiang-Sun Zhang, A dynamic programming algorithm for the k-haplotyping problem, *Acta Mathe-*

- maticae Applicatae Sinica*, Vol.22, No.3, pp.405-412, 2006.
- [25] Ji-Hong Zhang, Ling-Yun Wu, Yu-Ying Zhao, Xiang-Sun Zhang, An Optimization Approach to the Reconstruction of Positional DNA Sequencing by Hybridization with Errors, *European J. of Operational research*, 182, pp.413-427, 2007
- [26] Shihua Zhang, Guangxu Jin, Xiang-Sun Zhang, Luonan Chen, Discovering functions and revealing mechanisms at molecular level from biological networks, *Proteomics*, in press
- [27] Zhenping Li, Shihua Zhang, Yong Wang, Xiang-Sun Zhang, and Luonan Chen, Alignment of molecular networks by integer quadratic programming, *Bioinformatics*, 2007; doi: 10.1093/bioinformatics/btm156
- [28] Shi-Hua Zhang, Xuemei Ning, Xiang-Sun Zhang, Graph kernels, hierarchical clustering, and network community structure: experiments and comparative analysis, *European Physical J, B*, in press
- [29] Rui-Sheng Wang, Ling-Yun Wu, Xiang-Sun Zhang and Luonan Chen. A Markov chain model for haplotype assembly by SNP fragments. *Genome Informatics*, in press
- [30] Yong Wang, Trupti Joshi, Xiang-Sun Zhang, Dong Xu, Luonan Chen, Recovering gene regulation and identifying compound targets from multiple time course expression datasets, submitted to *PLoS Bioinformatics*
- [31] Xiang-Sun Zhang, Rui-Sheng Wang, Ling-Yun Wu, Yong Wang, Shihua Zhang, Luonan Chen, Predicting Protein Interactions Based on Parsimony Tendency of Domain Interactions, in submission

#### PROCEEDINGS ARTICLES

- [32] Ling-yun Wu, Ji-hong Zhang, and X.-S.Zhang, Neural networks approach to DNA sequencing by hybridization, *Operations Research and Its Applications*, Lecture Notes in Operations Research, vol.4, pp.312-320, World Publishing Corporation, 2002.
- [33] Luo-Nan Chen, Tian-Shou Zhou, Yun Tang and Xiang-Sun Zhang, Structure alignment of protein by mean field annealing, ICSB2003.
- [34] Rui-sheng Wang, Ling-yun Wu, Zhen-ping Li and Xiang-sun Zhang, A genetic algorithm for the individual haplotyping problem, *Proceedings of the Seventh National Conference of Operations Research Society of China*, pp.814-823, Global-Link Publishing Company, Hong Kong, 2004.
- [35] Ji-hong Zhang, Ling-yun Wu, Yong Wang, Zhen-ping Li and Xiang-sun Zhang, A statistical method based on Markov chain for optimal reconstruction of haplotype from genotype data with SNP, *Proceedings of the Seventh National Conference of Operations Research Society of China*, pp.1268-1277, Global-Link Publishing Company, Hong Kong, 2004.

- [36] Xiang-Sun Zhang, Zhong-Wei Zhan, Yong Wang, Ling-Yun Wu, An attempt to explore the similarity of two proteins by their surface shapes, *Operations Research and Its Applications*, Lecture Notes in Operations Research, vol.5, pp.288-296, World Publishing Corporation, 2005.
- [37] Shi-Hua Zhang, De-Gang Liu, Xiang-Sun Zhang, A framework for structural similarity search in protein, *Operations Research and Its Applications*, Lecture Notes in Operations Research, vol.5, pp.297-307, World Publishing Corporation, 2005.
- [38] Rui-Sheng Wang, Xiang-Sun Zhang, Li Sheng, Haplotype inference by pure parsimony via genetic algorithm, *Operations Research and Its Applications*, Lecture Notes in Operations Research, vol.5, pp.308-318, World Publishing Corporation, 2005.
- [39] Shi-Hua Zhang, Ling-Yun Wu, Guangxu Jin, and Xiang-sun Zhang, A simple method for structural classification of proteins, *Proceedings of the Eighth National Conference of Operations Research Society of China*, pp.290-295, Global-Link Publishing Company, Hong Kong, 2004 (in Chinese).
- [40] Shi-Hua Zhang, Xue-Mei Ning, Hong-Wei Liu, Xiang-Sun Zhang, Prediction of protein complexes based on protein interaction data and functional annotation data using kernel methods, *Computational Intelligence and Bioinformatics*, ICIC 2006, Part III, De-shuang Huang, et al. (eds.) pp.514-524, Lecture Notes in Bioinformatics 4115, Springer-Verlag, 2006.
- [41] Yong Wang, Ling-Yun Wu, Xiang-Sun Zhang, and Luonan Chen, Automatic Classification of Protein Structures Based on Convex Hull Representation by Integrated Neural Network, *TAMC2006, LNCS3959*, J.-Y.Cai, S.B.Cooper, and A.Li (Eds), pp.505-514, 2006
- [42] Yong Wang, Trupti Joshi, Dong Xu, Xiang-Sun Zhang and Luonan Chen, Supervised Inference of Gene Regulatory Networks by Linear Programming, *Computational Intelligence and Bioinformatics*, ICIC 2006, Part III, De-shuang Huang, et al. (eds.) pp.551-561, Lecture Notes in Bioinformatics 4115, Springer-Verlag, 2006.
- [43] Zhenping Li, Yong Wang, Shihua Zhang, Xiang-sun Zhang, Luonan Chen, Alignment of protein interaction networks by integer quadratic programming, *IEEE Engineering in Medicine and Biology Society*, 2006
- [44] Xiang-Sun Zhang, Rui-Sheng Wang, Lin-Yun Wu, Shi-Hua Zhang, Luonan Chen, Inferring Protein-Protein Interactions by Combinatorial Models, *IFMBE Proceedings*, vol.14, pp.181-184, World Conference on Medical Physics and Biomedical Engineering, Seoul, Korea, Springer-Verlag, 2006
- [45] Yong Wang, Lin-Yun Wu, Xiang-Sun Zhang and Luonan Chen, Protein comparisons based on both structure and sequence data, *IFMBE Proceedings*, vol.14, pp.172-175, World Conference on Medical Physics and Biomedical Engineering, Seoul, Korea, Springer-Verlag, 2006
- [46] Jinshan Li, Xiang-Sun Zhang, An Optimization Model for Achieving Spar-

sity of Gene Regulatory Networks, *Operations Research and Its Applications*, Lecture Notes in Operations Research, vol.6, pp.368-379, World Publishing Corporation, 2006.

- [47] Ji-Hong Zhang, Ling-Yun Wu, Jian Chen and Xiang-Sun Zhang, A new statistical method for haplotype inference from genotype data, *CASB06 Proceedings*, The IASTED International Conference on Computational and Systems Biology, Dallas, Texas, USA, 2006, pp.7-12, ISBN CD: 0-88986-601-5.

## Mathematical Programming

### REFEREED JOURNAL ARTICLES

- [1] X.-S. Zhang: An improved Rosen-Ploak method, *Acta Mathematicae Applicatae Sinica*, Vol. 2, No. 3, 1979, pp.257-267.(in Chinese)
- [2] X.-S. Zhang: Discussion on Polak's algorithm of nonlinear programming, *Acta Mathematicae Applicatae Sinica*, Vol. 4, No. 1, 1981, pp.1-13. (in Chinese)
- [3] X.-S. Zhang: On convergence of gradient projection method of nonlinear constraints problem, *Chinese Journal of Operations Research*, Vol. 1, No. 1, 1982. (in Chinese)
- [4] X.-S. Zhang: A survey of deterministic methods for searching global optimum, *Chinese J. of Operations Research*, Vol. 3, No. 2, 1984, pp. 1-13. (in Chinese)
- [5] X.-S. Zhang: A discussion on the convergence of Rosen's gradient projection method, *Acta Mathematicae Applicatae Sinica*, Vol. 8, No. 1, 1985, pp. 125-128. (in Chinese)  
It is collected in *Gradient Projection Method in Linear and Nonlinear Programming*, 327-335, Adv.Discrete Math. Comput. Sci., III, Hadronic Press, Palm Harbor, FL, 1988.
- [6] X.-S. Zhang. J.B. Rosen: Global minimization of concave program, *Mathematics in Economics*, Vol. 1, No. 1, 1985, pp. 121-138. (in Chinese)
- [7] D.-Z. Du, X.-S. Zhang: A convergence theorem of Rosen's gradient projection method, *Mathematical Programming*, 36(1986), No. 2, pp. 135-144.
- [8] D.-Z. Du, X.-S. Zhang, Global convergence of Rosen's gradient projection method, *Chinese J. of Operations Research*, vol.6, no.2, 1987, pp.73-74. (in Chinese)
- [9] X.-S. Zhang: Discussion on the convergence of Rosen's gradient projection method, *Acta Mathematicae Applicatae Sinica (English Series)*, Vol. 3, No. 3, 1987, pp.280-288.
- [10] D.-Z. Du, X.-S. Zhang: Global convergence of Rosen's gradient projection

- method, *Mathematical Programming*, 44 (1989) No.3. pp.357-366.
- [11] D.-Z. Du and X.-S. Zhang: On a new gradient projection method, *Systems Science and Mathematical Sciences*. Vol. 2, No. 2, 1989, pp. 184-192.
  - [12] J.-J. Niu, X.-S. Zhang: Discussion on the possibility of applying the concepts and methods of nonlinear programming to design polynomial algorithm of linear programming, *Journal of Qufu Normal University*, Natural Science Edition, Vol. 15, No. 4, 1989, pp. 8-14. (in Chinese)
  - [13] X.-S. Zhang, D.-G. Liu: A note on the continuity of solutions of parametric linear programs, *Mathematical Programming*. 47 (1990), pp. 143-153
  - [14] D.-Z. Du, F. Wu, X.-S. Zhang: On Rosen's gradient projection methods, *Annals of Operations Research* , 24(1990), 11-28.
  - [15] X.-S. Zhang and D.-Z. Du: Extended binary search and it's application in design of polynomial-time algorithm for LP, *Systems Science and Mathematical Sciences*, Vol.10, No.4(1990), pp. 371-376 (in Chinese)
  - [16] D.-Z. Du, F. Wu and X.-S. Zhang: Why the objective function is nonlinearized in interior point methods for linear programming? *Mathematics in Practice and Theory*, No.2(1990), 63-68, (in Chinese)
  - [17] X.-S. Zhang, J.-C. Cui, and D.-G. Liu: A survey of the development of sensitivity analysis in parametric LP, *Mathematics in Practice and Theory*, No.4, pp.41-48, 1991 (in Chinese).
  - [18] X.-S. Zhang, Stability study of linear programming with parameters, *Journal of Qufu Normal University*, Vol.19, No.1, pp.37-43, 1993 (in Chinese).
  - [19] X.-S. Zhang, A unified approach for design of LP polynomial algorithms, *Journal of Engineering*, Vol.7, No.3, pp.155-160, 1994.
  - [20] Juliang Zhang, and Xiangsun Zhang, A smoothing approximation to the exact penalty function for optimization with inequality constraints, *J. Sys. Sci. & Math. Scis*, vol.20, no.4, pp.499-505, 2000.
  - [21] X.-S. Zhang, Z.-W. Chen, J.-L. Zhang, A self-adaptive trust region method for unconstrained optimization, *OR Transactions*, vol.5, no.1, pp.53-62, 2001.
  - [22] Ju-Liang Zhang, and Xiang-sun Zhang, A SQP method for equality constrained optimization and its convergence, *Acta Mathematicae Applicatae Sinica*, vol.24, no.1, pp.1-9, 2001 (in Chinese).
  - [23] Ju-Liang Zhang and Xiang-sun Zhang, A SQP method based on smoothing penalty function for nonlinear optimization with inequality constraint, *J. of Systems Science and Complexity*, vol.14, no.2 pp.212-217, 2001.
  - [24] Ju-Liang Zhang, and Xiang-sun Zhang, A modified SQP method with non-monotone linesearch technique, *Journal of Global Optimization*, vol.21, no.2, pp.201-218, 2001.
  - [25] Juliang Zhang, and Xiangsun Zhang, A quasi-Newton—trust region method for equality constrained optimization and its convergence properties, *OR Transactions*, vol5, no.4, pp.72-80, 2001.
  - [26] Zhongwen Chen, and Xiangsun Zhang, A trust-region and affine scaling al-

- gorithm for linearly constrained optimization, *Science in China (Series A)*, vol.45, no.7, pp.1-9, 2002.
- [27] J.-L.Zhang, and X.-S.Zhang, A robust SQP method based on a smoothing approximate penalty function for inequality constrained optimization, *Journal of Systems Science and Complexity*, vol.15, no.1, pp.102-112, 2002.
- [28] Xiang-sun Zhang, and Ju-liang Zhang, Li-zhi Liao, An adaptive trust region method and its convergence, *Science in China (Series A)*, vol.45, no.5, pp.620-631, 2002.
- [29] J.-L.Zhang and X.-S.Zhang, A SQP method for inequality constrained optimization, *Acta Mathematicae Applicatae Sinica*, English Series, vol.18, no.1, pp.77-84, 2002.
- [30] J.-L.Zhang, X.-S.Zhang, and X.-J.Zhuo, On the global convergence of a trust region method without regularity conditions, *Mathematica Numerica Sinica*, vol.24, no.4, pp.437-450, 2002 (in Chinese).
- [31] J.-L.Zhang, X.-S.Zhang, A sequential penalty algorithm for nonlinear constrained optimization, *J. of Optimization Theory and Application*, vol.118, no.3, 2003.
- [32] L.-P.Zhang, X.-S.Zhang, Global linear and quadratic one-step smoothing Newton method for  $P0$ -LCP, *Journal of Global Optimization*, vol.25, no.4, pp.363-376, 2003.
- [33] J.-L.Zhang, X.-S.Zhang, Z.W.Chen, On the convergence of a trust region method for general constrained optimization without regular condition, *Acta Mathematicae Applicatae Sinica*, vol.26, no.1, pp.1-10, 2003.
- [34] J.-L.Zhang, X.-S.Zhang, X.J.Zhuo, A robust SQP method for optimization with inequality constraints, *J. of Computational Mathematics*, vol.21, no.2, pp.247-256, 2003.
- [35] J.-L.Zhang, X.-S.Zhang, A nonmonotone adaptive trust region method and its convergence, *Computers and Mathematics with Applications*, vol.45, pp.1469-1477, 2003.
- [36] J.-L.Zhang, X.-S.Zhang, A predictor-corrector method for convex quadratic programming, *Journal of Systems Science and Mathematical Sciences*, vol.23, no.3, pp.366-372, 2003. (in Chinese)
- [37] J.-L.Zhang, X.-S.Zhang, An adaptive trust region method for equality constrained optimization, *J. System Sciences and Complexity*, vol.16, no.4, pp.494-505, 2003.
- [38] J.-L.Zhang, X.-S.Zhang, A sequential penalty algorithm for nonlinear constrained optimization, *J. of Optimization Theory and Application*, vol.118, no.3, pp.635-655, 2003.
- [39] Naihua Xiu, Yiju Wang, and X.-S.Zhang, Modified fixed-point equations and related iterative methods for variational inequalities, *Computers and Mathematics with Applications*, vol.47, pp.913-920, 2004.
- [40] J.-L.Zhang, X.-S.Zhang, and Y.-M.Su, Predictor-corrector smoothing meth-

ods for monotone LCP, *Acta Mathematicae Applicatae Sinica*, English Series, vol.20, no.4, pp.557-572, 2004.

- [41] Zhongwen Chen, and Xiangsun Zhang, A nonmonotone trust-region algorithm with nonmonotone penalty parameters for constrained optimization, *Journals of Computational and Applied Mathematics*, **172**, pp.7-39, 2004.
- [42] Liu Hongwei, Wang Mingjie, Li Jinshan, Zhang Xiangsun, Global convergence of the non-quasi-Newton method for unconstrained optimization problem, *Appl. Math. J. Chinese Univ.*, Ser. B 2, 21(3): 276-288, 2006
- [43] J.-L.Zhang, Y.Wang, and X.-S.Zhang, A superlinearly convergent trust-region method without assumption of positive-definite Hessian, *J. of Optimization Theory and Application*, vol.129, no.1, pp.201-218, 2006.
- [44] J.L.Zhang, L.Y.Wu, and X.-S.Zhang, A trust region method for optimization problems with singular solutions, *Applied Mathematics and Optimization*, in press.

#### PROCEEDINGS ARTICLES

- [45] Sheng Li and Xiang-Sun Zhang, Some useful numerical examples in discussion on continuity of solutions of parametric linear programming, *Proceedings of APORS'91*, Peking University Press, Beijing, 1992, pp. 501-508.
- [46] Xiang-Sun Zhang and Ju-Liang Zhang, A quasi-Newton-trust region method for equality constrained optimization and its convergence properties, *Proceedings of the Sixth National Conference of Operations Research Society of China*, pp.998-1005, Global-Link Publishing Company, Hong Kong, 2000.
- [47] Zhen-Jun Shi, Xiang-Sun Zhang, Convergence analysis of adaptive trust region methods, Preprint on Report of Research, IAM-R002, 2005.
- [48] Zhen-Jun Shi, Xiang-Sun Zhang, From line search method to trust region method, *Operations Research and Its Applications*, Lecture Notes in Operations Research, vol.5, pp.156-170, World Publishing Corporation, 2005.
- [49] Hong-wei Liu, Minjie Wang, and Xiang-sun Zhang, The global convergence of non-quasi Newton methods with non-monotone linear search, *Proceedings of the Eighth National Conference of Operations Research Society of China*, pp.70-75, Global-Link Publishing Company, Hong Kong, 2004 (in Chinese).

#### **Artificial Neural Network**

#### REFEREED JOURNAL ARTICLES

- [1] Xiang-Sun ZHANG, Hong-Feng LI, Xiao-Dong WANG, A straightforward mathematical analysis for the Hopfield neural network, *Acta Electronica Sinica*, Vol. 20, pp. 10-18, 1992.
- [2] X.-S.Zhang, Mathematical analysis for some neural networks that solving linear and quadratic programming, *Acta Mathematicae Applicatae Sinica*, Vol.12, No.1, pp.1-10, 1996.
- [3] X.-S.Zhang, Trust region method in neural network, *Acta Mathematicae Applicatae Sinica* (English Series), Vol. 13, No.4, pp.342-352, 1997.
- [4] Xinjian Zhou and X.-S.Zhang, Hopfield-type neural network for solving "four-coloring map problems", *OR Transactions*, vol.3, no.3, pp.35-43, 1999 (in Chinese).
- [5] De-gang Liu, Xiang-Sun Zhang, Modified optimization layer by layer for learning multilayer perceptrons, *Acta Mathematicae Applicatae Sinica*, vol.16, no.1, pp.59-69, 2000.
- [6] De-gang Liu, Xiang-sun Zhang, Test problem generator by neural network for algorithms that try solving nonlinear programming problems globally, *Journal of Global Optimization*, vol.16, no.3, pp.229-243, 2000.
- [7] X.-J.Zhuo, X.-S.Zhang, and Z.B.Xu, The study on research of convergence and its reliability analysis of the discrete Hopfield-type neural network, *Systems Science and Mathematical Sciences*, vol.21, no.2, pp152-162, 2001 (in Chinese).
- [8] J.-L.Zhang and X.-S.Zhang, A new neural network for linear programming, *OR Transactions*, vol5, no.2, pp.46-54, 2001.
- [9] Juliang Zhang, and Xiangsun Zhang, Neural networks for linear inequalities, *OR Transactions*, vol.6, no.1, pp.9-18, 2002.
- [10] Xiang-sun Zhang, Xing-jian Zhuo, and Zhu-jun Jing, A canonical neural network model for nonlinear programming problems, *Acta Mathematicae Applicatae Sinica*, vol.18, no.3, pp.377-388, 2002.

#### PROCEEDINGS ARTICLES

- [11] X.-S.Zhang, H.-C.Zhu, A neural network model for quadratic programming with simple upper and lower bounds and its application to linear programming, *Algorithms and Computation, Lecture Notes in Computer Science 834*, D.-Z.Du and X.-S.Zhang(eds.), pp.119-127, Springer-Verlag, 1994.
- [12] X.-S.Zhang, The approximation capability of the feedforward neural network and a class of generalized Fourier network, *Proceeding of Chinese SIAM'94*, pp. 108-116, Qinghua University Press, 1994 (in Chinese).
- [13] X.-S.Zhang, G.-J.Zhang, H.-C.Zhu, Doing optimization by neural network: solving combinatorial network problem, *Optimization Theory and Application*, M.-Y.Yue (ed.), pp.1-6, Xi'an Electronic Science and Technology Uni-

- versity Press, 1994 (in Chinese).
- [14] X.-S.Zhang and Peter C.B.Lam, Mathematical analysis for neural networks that simulates the penalty methods in nonlinear programming, *Operations Research and Its Applications*, Lecture Notes in Operations Research, vol.1, pp.93-102, World Publishing Corporation, 1995.
  - [15] X.-S.Zhang and S.Amari, A composite network model that tries to solve nonlinear programming problem globally, *Proceedings of the International Conference on Neural Information Processing(ICONIP95)*, Yixin Zhong (ed), pp. 809-812, 1995.
  - [16] X.-S.Zhang, How many spurious patterns in the Hopfield neural network, *Proceedings of IEEE International Conf. on Neural Networks and Signal Processing (ICNNSP'95)*, pp.117-120, 1995.
  - [17] X.-S.Zhang, X.-J.Zhuo, and Lei Wang, Discrete Hopfield-type Neural network model for solving "Travelling-salesman problem" *Operations Research and Its Applications*, Lecture Notes in Operations Research, vol.3, pp.287-295, World Publishing Corporation, 1998.
  - [18] Ling-yun Wu, Xiang-sun Zhang and Ju-liang Zhang, Application of discrete Hopfield-type neural network for max-cut problem, *Proceedings of ICONIP 2001*, pp.1439-1444, Fudan University Press, Shanghai, 2001.
  - [19] Xiang-sun Zhang, Zhenping Li and Wenfeng Zhou, A neural network algorithm for the  $(m, d)$ -coloring problem of a graph, *Proceedings of the Seventh National Conference of Operations Research Society of China*, pp.382-389, Global-Link Publishing Company, Hong Kong, 2004.

## **Operations Research/Management Information System/Electrical Governance**

### REFEREED JOURNAL ARTICLES

- [1] X.-Y. Kwei, X.-S. Zhang: Discussion on the future of OR and its application, *Chinese J. of Operations Research*, Vol. 6, No. 1, 1987, pp. 73-80.(in Chinese)
- [2] X.-S. Zhang: OR and MIS, *Information System Engineering: Design and Application*. No. 2, 1988, pp. 15-19. (in Chinese)
- [3] X.-S. Zhang: An exploratory survey of relationship between OR and MIS, *Chinese J. of Operations Research*, Vol. 7, No. 1, 1988, pp. 23-35. (in Chinese)
- [4] X.-S. Zhang, A.-S. Quan: A morphological study on the design methodology of MIS, *Computer Research and Development*, Vol. 26, No. 4, 1989, pp.

- 30-35. (in Chinese)
- [5] X.-S. Zhang, A.-S. Quan: A two dimensional morphology for design and development of management information systems, *J. of Systems Engineering*, No. 2, 1989, pp. 46-58. (in Chinese)
  - [6] X.-S. Zhang: Discussion on information request investigation methodology and practice, *Enterprise Herald*, supplementary issue, Aug. 1989, 73-81.(in Chinese)
  - [7] H.Chen, X.-S.Zhang, Experiment—An important research method for GDSS, *Decision Making and DSS*, Vol.3, No.3, pp.234-240, 1993.
  - [8] H.Chen, X.-S.Zhang, Group Decision Support System—A new management tool for managing scientific research, *Scientific Research Management*, No.5, pp.39-43, 1993 (in Chinese).
  - [9] Kin Lam, X.-S.Zhang, Wei Li, Optimizing the ex-post trading profits financial market, *OR Transactions*, Vol.1, No.1, pp.2-13, 1997.
  - [10] X.-S.Zhang, Kan Cheng, China: ancient country makes OR history, *OR/MS Today*, October, pp.32-35, 1998.
  - [11] Xiangsun Zhang and Yaji Guan, The productive forty years of Operational Research in China, *OR Transactions*, vol.3, no.1, pp.1-5, 1999 (in Chinese).
  - [12] X.-S.Zhang and J.-C.Cui, A project evaluation system in the state economic information system of China— An operations research practice in public sectors, *International Transactions in Operational Research*, vol.6, pp.441-452, 1999.
  - [13] Quanling Wei, Jianzhong Zhang and Xiangsun Zhang, An inverse DEA model for input/output estimate, *European J. of Operational Research*, vol.121, pp.151-163 2000.
  - [14] Zongben Xu, Zhiping Chen, Xiangsun Zhang, Theoretical development on genetic algorithms: a review, *Advances in Mathematics*, vol.29, no.2, pp.97-114, 2000 (in Chinese).
  - [15] Delin Lu, Xiangsun Zhang and Guizhi Ma, Study of the risk compensation for the civil engineering offer, *Operations research and Management Science*, vol.10, n0.2, pp.10-17, 2001 (in Chinese).
  - [16] Delin Lu, Xiangsun Zhang and Yunyin Mi, An offer model for civil engineering construction, *OR Transactions*, vol.5, no.4, pp.41-52, 2001 (in Chinese).
  - [17] Xiangsun Zhang and Weiwu Fang, The history of Operations Research in China, *Global Management Review*, no.9, pp.62-63, 2002 (in Chinese).
  - [18] Zhenping Li, Guiying Yan, and X.-S.Zhang, On fractional  $(g, f)$ -covered graphs, *OR Transactions*, vol.6, no.4, pp.65-68, 2002.
  - [19] Lu Delin, Zhang Xiangsun, Chen Jie, Study on rapid estimate model based on integrated neural net, *Journal of Systems Science and Mathematical Sciences*, vol.23, no.3, pp.305-313, 2003. (in Chinese)
  - [20] Li Zhen-ping, Yan Gui-ying, and Zhang Xiang-sun, On fractional  $(g, f)$ -deleted graphs, *Mathematia Applicata*, vol.16, no.1, pp.148-154, 2003.

- [21] Xiang-sun Zhang and Lian Du, The strategic planning method of E-Government, *Blue Book of Electronic Government: China E-Government Development Report*, no.1, pp151-166, 2003,12, Social Science Documentation Publishing House, Beijing.
- [22] Zhenping Li, Xiangsun Zhang and Guiying Yan, Isolated toughness and fractional k-deleted graphs, *OR Transactions*, vol.7, no.4, pp.79-85, 2003.
- [23] Ling-yun Wu, Xiang-sun Zhang, and Ju-liang Zhang, Capacitated facility location problem with general setup cost, *Computers and Operations Research*, vol.33, no.5, pp.1226-1241, 2006.
- [24] Zhong-Wei Zhan, Yong Wang, Ling-Yun Wu and Xiang-Sun Zhang. A DEA evaluation model of the official province websites, *Operations Research and Management Science*, Vol.15, No.4, pp.97-102, 2006. (in Chinese)

#### PROCEEDINGS ARTICLES

- [25] X.-S. Zhang, D.-G. Liu, H. Chen: An evaluation of some design methodologies of MIS based on TDM, in Cheng Weimin eds. *Systems Sciences and Engineering—Proceedings of ICSSE'88*, China, International Academic Publishers, 1988, pp. 305-309.
- [26] L. Du, X.-S. Zhang: IDEA— A methodology used in the strategic planning practice of the state economic information system in China, *Proceeding of DFD 1988* (Data for Development Conference on “Strategies and Methodologies for the Design and Implementation of MIS in Public Administration”), May 1988, Beijing, China.
- [27] Jihong Zhang and Xiangsun Zhang, Continuous time discounted Markov decision process with stochastic termination and unbounded rewards, *Proceedings of the Sixth National Conference of Operations Research Society of China*, pp.880-888, Global-Link Publishing Company, Hong Kong, 2000.
- [28] Xiang-sun Zhang and Jin-Chuan Cui, A new evaluation and forecasting method: The inverse DEA formulation, *A Collection of Presentations in the International Workshop on Optimization with High Technology Applications*, Oct. 23-25, 2000, pp.743-772, Department of Applied Mathematics, The Hong Kong Polytechnic University, ISBN 962-367-307-8.
- [29] Zhong-wei Zhan, Yong Wang, Ling-yun Wu and Xiang-sun Zhang, Evaluation of E-government services based on data envelopment analysis, *Proceedings of the Seventh National Conference of Operations Research Society of China*, pp.348-354, Global-Link Publishing Company, Hong Kong, 2004 (in Chinese).
- [30] Zhen-ping Li, Ling-yun Wu, and Xiang-sun Zhang, A kind of new inverse DEA model, *Proceedings of the Eighth National Conference of Operations Research Society of China*, pp.762-768, Global-Link Publishing Company,

Hong Kong, 2004 (in Chinese).

- [31] Ji-Hong Zhang, Jian Chen, Yu-Nan Wu, Xiang-Sun Zhang, A stochastic inventory placement model for a multi-echelon seasonal product supply chain with multiple retailers, *Operations Research and Its Applications*, Lecture Notes in Operations Research, vol.6, pp.347-357, World Publishing Corporation, 2006.

### **BOOKS and CHAPTERS (EDITED/PUBLISHED)**

- [1] D.-Z.Du and X.-S.Zhang (eds.), *Algorithms and Computation*, Lecture Notes in Computer Science 834, Springer-Verlag, 1994.
- [2] D.-Z.Du, X.-S.Zhang and K.Cheng (eds.), *Operations Research and Its Applications*, Lecture Notes in Operations Research, 1, Proceedings of the First International Symposium of ISORA, Beijing, China, August 19-22, 1995, World Publishing Corporation.
- [3] D.-Z.Du, X.-S.Zhang and K.Cheng (eds.), *Operations Research and Its Applications*, Lecture Notes in Operations Research, 2, Proceedings of the Second International Symposium of ISORA, Guilin, China, December 11-14, 1996, World Publishing Corporation.
- [4] D.-Z.Du, X.-S.Zhang and K.Cheng (eds.), *Operations Research and Its Applications*, Lecture Notes in Operations Research, 3, Proceedings of the Third International Symposium of ISORA, Kunming, China, August 20-22, 1998, World Publishing Corporation.
- [5] X.-S.Zhang, *Nonlinear Programming*, in Hsu Guanghui (eds.), *Operations Research Handbook*, Chapter 5, pp.168-258, Science Publisher, Beijing, 1999 (in Chinese).
- [6] X.-S.Zhang, *Management Information System*, in Hsu Guanghui (eds.), *Operations Research Handbook*, Chapter 17, pp.806-855, Science Publisher, Beijing, 1999 (in Chinese).
- [7] X.-S.Zhang, *Neural Networks in Optimization*, Kluwer Academic Publishers, Dordrecht, Boston, London, 2000.
- [8] X.-S.Zhang, J.-F.Wang, B.-D.Liu, and D.-G.Liu (eds.), *Proceedings of the Sixth National Conference of Operations Research Society of China*, volume 1, 2, Global-Link Publishing Company, Hong Kong, October, 2000.
- [9] X.-S.Zhang, Q.-Z.Zhao and F.-A.Liu, *Management Information System: System Theory and Planning*, Science Publisher, Beijing, 2001 (in Chinese).
- [10] X.-S.Zhang and D.-G.Liu (eds.), *Operations Research and Its Applications*, Lecture Notes in Operations Research, 4, Proceedings of the Forth International Symposium of ISORA, Yichang-Chongqing, China, June 1-6, 2002, World Publishing Corporation.

- [11] Li Daqian, Zhang Xiangsun, Yuan Yaxiang (eds), *Proceeding of the Sixth Conference of China Society for Industrial and Applied Mathematics*, August 25-27, 2002, Beijing, Research Information Ltd..
- [12] X.-S.Zhang and L.Du, *Electrical Government and Its Strategic Planning*, Science Publisher, Beijing, 2004 (in Chinese).
- [13] X.-S.Zhang, J.-F.Wang, B.-D.Liu, and D.-G.Liu (eds.), *Proceedings of the Seventh National Conference of Operations Research Society of China*, volume 1, 2, 3, Global-Link Publishing Company, Hong Kong, October, 2004.
- [14] X.-S.Zhang, D.-G.Liu and L.-Y.Wu (eds.), *Operations Research and Its Applications*, Lecture Notes in Operations Research, 5, Proceedings of the Forth International Symposium of OR and Application, Lhasa-Nyingchi, Tibet, China, 9-13 August, 2005, World Publishing Corporation.
- [15] X.-S.Zhang, D.-G.Liu and L.-Y.Wu (eds.), *Operations Research and Its Applications*, Lecture Notes in Operations Research, 6, Proceedings of the sixth International Symposium of OR and Application, Urumqi, Xinjiang, China, 8-12 August, 2006, World Publishing Corporation.

### **BOOKS Translated**

- [1] Z.-J.Jing, X.-S.Zhang, Chinese version of *The Beauty of Fractals*, H.O.Peitgen and P.H.Richter, Springer-Verlag, 1986, Science Publisher, Beijing, 1994.
- [2] X.-S.Zhang D.-G.Liu, J.Zhang, L.-Y.Wu and Y.Wang, Chinese version of *The 50th Anniversary Issue of Operations Research*, *Operations Research*, vol.50, no.1, 2002, INFORMS, published in *Operations Research and Management Science*, Special issue, 2004.