

Yong Wang

Curriculum Vitae

Personal Data

Name: Yong Wang
Date of Birth: August 1, 1976
Place of Birth: Inner Mongolia Autonomous Region
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Contact Information

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Profile

Yong Wang is Research Associate Professor at the Academy of Mathematics and Systems Science (AMSS), Chinese Academy of Sciences (CAS). He received his Ph.D. degree in Operations Research and Control Theory from AMSS of CAS in 2005, his Master's Degree in Operations Research and Control Theory from the Dalian University of Technology in 2002 and his Bachelor's Degree in Mathematics and Physics from the Inner Mongolia University in 1999. From 2005 to 2007, he had taken the postdoctoral position at the State Information Center in China and the Department of Electronics Information and Communications, Osaka Sangyo University in Japan. From 2007. 9 to 2008.9, he visited the Bioinformatics Program in Boston University as a research associate. From 2010. 10 to 2011. 4, he served as the Research Staff in The Computational Biology Research Center (CBRC) of National Institute of Advanced Industrial Science and Technology (AIST) in Japan. His current interest is in Bioinformatics and Systems Biology.

Education

2002 ~ 2005 Ph.D. **Operational Research and Cybernetics**,
Institute of Applied Mathematics, Academy
of mathematics and Systems Science, Chinese
Academy of Sciences.
Supervised by Prof. Xiang-Sun Zhang.

1999 ~ 2002 M.S. **Operational Research and Cybernetics**,
Department of Applied Mathematics, Dalian Uni-
versity of Science and Technology.
Supervised by Prof. EnMin Feng.

1995 ~ 1999 B.S. **Mathematics and Physics**,
Department of Mathematics, Inner Mongolia
University.
Supervised by Prof. WeiDong Rong.

Dissertation Adviser: Prof. Xiang-Sun Zhang

Dissertation Title: Research on Protein's Structure Prediction
and Classification by Using Neural Networks

Experience

- 2010. 3 ~ present, Research Associate Professor of Institute of Applied Mathematics, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, China
- 2011. 11 ~ 2011. 12, Visitor of University of Missouri-Columbia, USA
- 2010. 10 ~ 2011. 4, Research Staff in The Computational Biology Research Center (CBRC) of National Institute of Advanced Industrial Science and Technology (AIST), Japan
- 2007. 9 ~ 2008.9, Research Associate of Bioinformatics Program, Boston University, USA.
- 2007. 6 ~ 2010. 3, Research Assistant Professor of Institute of Applied Mathematics, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, China
- 2005. 6 ~ 2007. 6, Postdoctoral Associate, Department of Electrical Engineering and Electronics (Electronics information and communications), Osaka Sangyo University, Osaka, Japan.
- 2005. 5 ~ 2005. 10, Postdoctoral Associate, State Information Center, Beijing, China.

Qualification

- Global E-Commerce Certification, 2002. Approved and issued by IBM Corporation.

Projects

- | | |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2002 ~ 2005 | Some Mathematical Problems in Bioinformatics
Principal Investigator, Ph. D research project supported by Chinese Academy of Sciences. |
| 2004 ~ 2005 | Strategic Planning of the Electrical Government of China
Joint member, Research project sponsored by The State Council Informatization office. |

Grants

- 2005 ~ 2007 **Research on Several Difficult Bioinformatics Problems by Using OR Methodologies**, Joint Member, Research Grant, Grant No. 10471141, National Natural Science Foundation of China (NSFC).
- 2005 ~ 2007 **Research on E-Government Management Problem by Complex System Methodologies**, Principal Investigator, Youth Research Grant, Grant No. 2005038334, National Postdoctoral Foundation of China (NSFC).
- 2006 ~ 2008 **Research on Models and Algorithms of Haplotype Inference Problem in Bioinformatics**, Joint Member, Youth Research Grant, Grant No. 60503004, National Natural Science Foundation of China (NSFC).
- 2006 ~ 2008 **Important Mathematical Problems in Bioinformatics**, Joint Member, Important Direction Research Grant, Chinese Academy of Sciences (CAS), China.
- 2007 ~ 2009 **Protein Function Annotation and Prediction Based on Three Dimensional Structural and High Throughput Experimental Data**, Joint Member, Joint Research Grant, Grant No. 10711140116. National Natural Science Foundation of China and Japan Society for the Promotion of Science.
- 2006 ~ 2008 **Research on the Data Mining Grid Systems in Commercial Bank**, Joint Member, Youth Research Grant, Grant No. 70602034. National Natural Science Foundation of China (NSFC).
- 2007 ~ 2009 **Research on Theory and Algorithms of Community Detection in Complex Networks**, Joint Member, Youth Research Grant, Grant No. 10701080. National Natural Science Foundation of China (NSFC).
- 2009 ~ 2011 **Research on Optimization Models and Algorithms for Reconstructing Gene Regulatory Networks**, Principal Investigator, Youth Research Grant, Grant No. 10801131. National Natural Science Foundation of China (NSFC).

- 2009 ~ 2011 **Research on the Applications of Optimization Methods in Information Technology**, Joint Investigator, Innovation Project, Grant No. kjcx-yw-s7. Chinese Academy of Sciences (CAS), China.
- 2009 ~ 2011 **Detecting Functional Module from Bio-molecular Networks**, Joint Investigator, Grant No.1092011. Beijing Natural Science Foundation, China.
- 2010 ~ 2012 **Bioinformatics Methods Based on Conditional Random Fields**, Joint Investigator, Grant No. 60970091. National Natural Science Foundation of China (NSFC).
- 2011 ~2012 **Data Integration Methodology for Gene Regulatory Network Reconstruction**, Principle Investigator. Scientific Research Foundation for the Returned Overseas Chinese Scholars, State Education Ministry.
- 2011 ~ 2012 **Network Study on Transcription Factor Cooperativity**. Principle Investigator. Shanghai Key Laboratory of Intelligent Information Processing, China. Grant No. IIPL-2010-008.
- 2012 ~ 2016 **Optimization in Complex Networks and Its Applications in Systems Biology**, Joint Investigator, Grant No. 11131009. Key Research Grant supported by NSFC.
- 2012 ~ 2015 **Bioinformatics Study on Induced Pluripotent Stem Cell**, Principle Investigator. Grant No. 61171007, Research Grant supported by NSFC.

Major areas of research interest

- Optimization
- Bioinformatics
- Systems Biology
- Machine Learning
- Application of Operations Research

Publications — Books & chapters

1. **Computational Systems Biology.** Luonan Chen, Xiang-Sun Zhang, Ling-Yun Wu, and **Yong Wang** (eds.). Proceedings of The 5th IEEE International Conference on Systems Biology (ISB 2011), Zhuhai, 2011.
2. **Operations Research and its Applications.** Xiang-Sun Zhang, De-Gang Liu, Ling-Yun Wu, and **Yong Wang** (eds.). Lecture Notes in Operations Research 14, World Publishing Corporation, Beijing, 2011.
3. **Computational Systems Biology.** Luonan Chen, Xiang-Sun Zhang, Bairong Shen, Ling-Yun Wu, and **Yong Wang** (eds.). Lecture Notes in Operations Research 13, World Publishing Corporation, Beijing, 2010.
4. **Operations Research and its Applications.** Xiang-Sun Zhang, De-Gang Liu, Ling-Yun Wu, and **Yong Wang** (eds.). Lecture Notes in Operations Research 12, World Publishing Corporation, Beijing, 2010.
5. **Yong Wang**, Rui-Sheng Wang, Trupti Joshi, Dong Xu, Xiang-Sun Zhang, Luonan Chen, and Yu Xia. **A linear programming framework for inferring gene regulatory networks by integrating heterogeneous data**, Computational Methodologies in Gene Regulatory Networks, Sanjoy Das, Doina Caragea, W. H. Hsu, Stephen M. Welch (eds.), IGI Global, 2009.
6. **Optimization and Systems Biology.** Xiang-Sun Zhang, Luonan Chen, Ling-Yun Wu and **Yong Wang** (eds.). Lecture Notes in Operations Research 11, World Publishing Corporation, Beijing, 2009.
7. **Optimization and Systems Biology.** Xiang-Sun Zhang, Luonan Chen, Ling-Yun Wu and **Yong Wang** (eds.). Lecture Notes in Operations Research 9, World Publishing Corporation, Beijing, 2008.
8. **Operations Research and its Applications.** Xiang-Sun Zhang, De-Gang Liu and **Yong Wang** (eds.). Lecture Notes in Operations Research 8, World Publishing Corporation, Beijing, 2008.
9. **Optimization and Systems Biology.** Xiang-Sun Zhang, Luonan Chen, Ling-Yun Wu and **Yong Wang** (eds.). Lecture Notes in Operations Research 7, World Publishing Corporation, Beijing, 2007. (ISTP:BGR74)

10. **Chinese Version of the 50th Anniversary Issue of Operations Research.** Xiang-Sun Zhang, De-Gang Liu, Jing Zhang, Ling-Yun Wu and **Yong Wang** (eds.). Special Issue of Operations Research and Management Science, Vol. **13**, 2004. (in Chinese)

Publications — Refereed journal articles

1. Xianyun Sun, Hanxing Zhang, Zhenying Zhang, **Yong Wang**, and Shaojie Li. **Involvement of a helix-loop-helix transcription factor CHC-1 in CO₂-mediated conidiation suppression in *Neurospora crassa*.** *Fungal Genetics and Biology*, in press.
2. Ruoying Chen, Wenjing Chen, Sixiao Yang, Di Wu, **Yong Wang**, Yingjie Tian, and Yong Shi. **Rigorous assessment and integration of the sequence and structure based features to predict hot spots.** *BMC Bioinformatics*, in press.
3. Xiang-Sun Zhang, Zhenping Li, Rui-Sheng Wang, **Yong Wang**. **A combinatorial model and algorithm for globally searching community structure in complex networks.** *Journal of Combinatorial Optimization*, in press,
4. Zhi-Ping Liu, **Yong Wang**. Xiang-Sun Zhang, Luonan Chen. **Network-based analysis of complex diseases,** *IET Systems Biology*, in press.
5. Ji-Guang Wang, Qiang Huang, Zhi-Ping Liu, **Yong Wang**, Ling-Yun Wu, Xiang-Sun Zhang, and Luonan Chen. **NOA: a novel network ontology analysis method,** *Nucleic Acids Research*, 39(13):e87, 2011.
6. Zhi-Ping Liu, **Yong Wang**. Xiang-Sun Zhang, Weimin Xia, Luonan Chen. **Detecting and analyzing differentially activated pathways in brain regions of Alzheimer's disease patients,** *Molecular BioSystems*, 7(5):1441-1452, 2011.
7. **Yong Wang**, Xiang-Sun Zhang, and Luonan Chen. **Computational systems biology: integration of sequence, structure, network, and dynamics,** *BMC Systems Biology*, 5(Suppl 1):S1, 2011.
8. Yongcui Wang, **Yong Wang**, Zhixia Yang, Nai-Yang Deng. **Support vector machine prediction of enzyme function with conjoint**

- triad feature and hierarchical context**, *BMC Systems Biology*, 5(Suppl 1):S6, 2011.
9. Ruoying Chen, Zhiwang Zhang, Di Wu, Peng Zhang, Xinyang Zhang, **Yong Wang**, and Yong Shi. **Prediction of protein interaction hot spots using rough set-based multiple criteria linear programming**, *Journal of Theoretical Biology*, Vol. 269, pp. 174–180, 2011.
 10. **Yong Wang**, Eric Franzosa, Xiang-Sun Zhang, and Yu Xia. **Protein evolution in yeast transcription factor subnetworks**, *Nucleic Acids Research*, Vol. 38, No. 18, pp. 5959-5969, 2010.
 11. **Yong Wang**, Xiang-Sun Zhang, and Luonan Chen. **Optimization meets systems biology**. *BMC Systems Biology*, Vol. 4, Suppl 2, S1, 2010.
 12. Xing Chen, **Yong Wang**, Ling-Yun Wu, Gui-Ying Yan. **Emergency decision model with multiple stages, multiple objectives, and multidivisional cooperation**, *Systems Engineering-Theory & Practice*, Vol. 30, No. 11, pp. 1977–1985, 2010. (in Chinese).
 13. Zhi-Ping Liu, Ling-Yun Wu, **Yong Wang**, Xiang-Sun Zhang, and Luonan Chen. **Prediction of protein-RNA binding sites by a random forest method with combined features**. *Bioinformatics*, Vol. 26, No. 3, pp. 1616-1622, 2010.
 14. Zhi-Ping Liu, **Yong Wang**, Xiang-Sun Zhang, Luonan Chen. **Identifying dysfunctional crosstalk of pathways in various regions of Alzheimer's disease brains**, *BMC Systems Biology*, Vol. 4, Suppl 2, S11, 2010.
 15. Luwen Zhang, Mei Xiao, **Yong Wang**, Wu Zhang. **Reverse engineering large-scale genetic networks: synthetic versus real data** *Journal of Genetics*, Vol. 89, No. 1, 2010.
 16. Yongcui Wang, Zhixia Yang, **Yong Wang**, Nai-Yang Deng. **Computationally probing drug-protein interactions via support vector machine** *Letters In Drug Design & Discovery*, Vol. 7, No. 5, pp. 370–378(9), 2010.

17. Lin Wang, Ling-Yun Wu, **Yong Wang**, Xiang-Sun Zhang, Luonan Chen. **SANA: an algorithm for sequential and non-sequential protein structure alignment.** *Amino Acid*, Vol. 39, No.2, pp.417-425, 2010.
18. Tingting Gao, Zhixia Yang, **Yong Wang**, Ling Jing. **Identifying translation initiation sites in prokaryotes using support vector machine.** *Journal of Theoretical Biology*, Vol. 262, No. 4, pp. 644–649, 2010.
19. Jiguang Wang, Shihua Zhang, **Yong Wang**, Luonan Chen, and Xiang-Sun Zhang. **Disease-aging network reveals significant roles of aging genes in connecting genetic diseases.** *PLoS Computational Biology*, 9(5), e1000521, 2009.
20. Xiang-Sun Zhang, Rui-Sheng Wang, **Yong Wang**, Ji-Guang Wang, Yu-Qing Qiu, Lin Wang, and Luonan Chen. **Modularity optimization in community detection of complex networks.** *Europhysics Letters*, 87, 38002, 2009.
21. **Yong Wang**, Xiang-Sun Zhang, and Yu Xia. **Predicting eukaryotic transcriptional cooperativity by Bayesian network integration of genome-wide data.** *Nucleic Acids Research*. 37: 5943-5958, 2009.
22. **Yong Wang**, Xiang-Sun Zhang, and Luonan Chen. **A network biology study on circadian rhythm by integrating various omics data.** *OMICS: A Journal of Integrative Biology*, Vol. 13, No.4, pp. 313-324, 2009.
23. **Yong Wang**, Ling-Yun Wu, Ji-Hong Zhang, Zhong-Wei Zhan, Xiang-Sun Zhang, and Luonan Chen. **Evaluating protein similarity from coarse structures.** *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, Vol. 6, No. 4, pp. 583–593, 2009.
24. Xiaojian Shao, Yingjie Tian, Lingyun Wu, **Yong Wang**, Ling Jing, and Naiyang Deng. **Predicting DNA- and RNA-binding proteins from sequences with kernel methods,** *Journal of Theoretical Biology*, Vol. 258, pp. 289–293, 2009.

25. Rui-Sheng Wang, Shihua Zhang, **Yong Wang**, Xiang-Sun Zhang, and Luonan Chen. **Clustering complex networks and biological networks by nonnegative matrix factorization with various similarity measures**, *Neurocomputing*, Vol. 72, pp. 134–141, 2008.
DOI: 10.1016/j.neucom.2007.12.043
26. Xing-Ming Zhao, **Yong Wang**, Luonan Chen, and Kazuyuki Aihara. **Protein domain annotation with predicted domain-domain interaction networks**. *Protein & Peptide Letters*, Vol. 15, pp. 456–462, 2008.
27. Xing-Ming Zhao, **Yong Wang**, Luonan Chen, and Kazuyuki Aihara. **Gene function prediction using labeled and unlabeled data**. *BMC Bioinformatics*, 9:57, 2008.
Software: AGPS (<http://intelligent.eic.osaka-sandai.ac.jp/chenen/agps.htm>)
28. Xing-Ming Zhao, **Yong Wang**, Luonan Chen, and Kazuyuki Aihara. **Protein domain annotation with integration of heterogeneous information sources**. *Proteins: Structure, Function, and Bioinformatics*, Vol. 72(1), pp. 461–473, 2008.
29. Zhi-Ping Liu, Ling-Yun Wu, **Yong Wang**, Xiang-Sun Zhang, and Luonan Chen. **Bridging protein local structures and protein functions**. *Amino Acids*, Vol. 35(3): pp. 627–650, 2008.
30. Zhi-Ping Liu, Ling-Yun Wu, **Yong Wang**, Xiang-Sun Zhang, and Luonan Chen. **Analysis of protein surface patterns by pocket similarity network**. *Protein & Peptide Letters*, Vol. 15(5), pp. 448–455, 2008.
31. Zhi-Ping Liu, Ling-Yun Wu, **Yong Wang**, Xiang-Sun Zhang, and Luonan Chen, **Protein cavity clustering based on community structure of pocket similarity network**, *International Journal of Bioinformatics Research and Applications*, Vol. 4, No. 4, pp. 445–460, 2008.
32. Zhi-Ping Liu, Ling-Yun Wu, **Yong Wang**, Luonan Chen, and Xiang-Sun Zhang. **Predicting gene ontology functions from protein's regional surface structures**. *BMC Bioinformatics*, 8:475, 2007.

33. Rui-Sheng Wang*, **Yong Wang***, Ling-Yun Wu, Xiang-Sun Zhang, and Luonan Chen. **Analysis on multi-domain cooperation for predicting protein-protein interactions.** *BMC Bioinformatics*, 8:391, 2007. (* co-first author)
Software: CDInfer (<http://intelligent.eic.osaka-sandai.ac.jp/chenen/CDInfer.htm>)
34. Rui-Sheng Wang, **Yong Wang**, Xiang-Sun Zhang, and Luonan Chen. **Inferring transcriptional regulatory networks from high-throughput data.** *Bioinformatics*, Vol. 23, pp. 3056–3064, 2007.
doi:10.1093/bioinformatics/btm465
Software: TRNinfer (<http://intelligent.eic.osaka-sandai.ac.jp/chenen/TRNinfer.htm>)
35. **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, pp. 123–144, 2007.
36. Zikai Wu*, **Yong Wang***, Enmin Feng, and Luonan Chen. **A new geometric-topological method to measure protein fold similarity.** *Chem. Phys. Lett.*, Vol. 433, pp. 432–438, 2007. (* co-first author)
37. Zikai Wu, En-min Feng, **Yong Wang**, and Luonan Chen. **Discrimination of outer membrane proteins by a new measure of information discrepancy.** *Protein & Peptide Lett.*, Vol. 14 No. 1, pp. 37–44, 2007.
38. Yu-Zhen Guo, En-min Feng, and **Yong Wang**. **Optimal HP configurations of proteins by combining local search with elastic net algorithm.** *Journal of Biochemical and Biophysical Methods*, Vol. 70 No. 3, pp. 335–340, 2007.
39. Yong Shi, Xinyang Zhang, Jia Wan, **Yong Wang**, Wei Yin, Zhiwei Cao, and Yajun Guo. **Predicting the distance between antibody's interface residue and antigen and antigen class by support vector machine.** *Neural Computing & Applications*, Vol. 16, No. 4-5, pp. 481–490, 2007.

40. Luonan Chen, **Yong Wang**, Minrui Fei, and Zengrong Liu, **Systems biology from theoretical and engineering perspective**, *Science & Technology Review*, Vol. 25, No. 10: pp. 5–9, 2007.(in chinese)
41. Zhenping Li, Shihua Zhang, **Yong Wang**, Xiang-Sun Zhang, and Luonan Chen. **Alignment of molecular networks by integer quadratic programming**. *Bioinformatics*, Vol. 23(13), pp. 1631–1639, 2007.
Software: MNAligner (<http://zhangroup.aporc.org/bioinfo/mnaligner/>)
42. **Yong Wang**, Trupti Joshi, Xiang-Sun Zhang, Dong Xu, and Luonan Chen. **Inferring gene regulatory networks from multiple microarray datasets**. *Bioinformatics*, **22**: pp. 2413–2420, 2006.
Software: GRNInfer (<http://zhangroup.aporc.org/bioinfo/grninfer/>)
43. Luonan Chen, Ling-Yun Wu, **Yong Wang**, Shihua Zhang, and Xiang-Sun Zhang. **Revealing divergent evolution, identifying circular permutations and detecting active-sites by protein structure comparison**. *BMC Structural Biology*, 6:18, 2006.
Software: SAMO (<http://zhangroup.aporc.org/bioinfo/samo/>)
44. Luonan Chen, Ling-Yun Wu, **Yong Wang**, and Xiang-Sun Zhang. **Inferring protein interactions from experimental data by association probabilistic method**. *Proteins: Structure, Function, and Bioinformatics*, Vol. 62, pp. 833–837, 2006.
Software: APM (<http://zhangroup.aporc.org/bioinfo/apm/>)
45. Yu-Zhen Guo, En-min Feng, and **Yong Wang**. **Exploration of two-dimensional HP lattice model by combining local search with elastic net algorithm**. *J. Chem. Phys.*, Vol. 125, 154102, 2006.
46. **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*, Vol. 2, No. 1, pp. 105–109, 2006.
47. Ju-Liang Zhang, **Yong Wang** and Xiang-Sun Zhang. **Superlinearly convergent trust region method without assumption of positive definite Hessian**. *Journal of Optimization Theory and Application*, Vol. 129, No. 1, 2006.

48. Yong Xiang, Chun Peng, Jian-Jun Pan, **Yong Wang**, and Ke-Ren Shi. **Research on focusing characteristic of mixing frequency phased array.** *Piezoelectrics & Acoustooptics*, Vol. **28**, No.1, pp. 113–116, 2006. (in Chinese)
49. 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).
50. Luonan Chen, Ling-Yun Wu, Ruiqi Wang, **Yong Wang**, Shihua Zhang, and Xiang-Sun Zhang. **Comparison of protein structures by multi-objective optimization.** *Genome Informatics*, Vol. **16**, No. 2, pp. 114–124, 2005.
51. **Yong Wang**, Zhong-Wei Zhan, Ling-Yun Wu, and Xiang-Sun Zhang. **Improved self-organizing map algorithm for protein folding and its realization.** *Journal of Systems Science and Mathematical Sciences*, Vol. **25**, No. 4, pp. 562–573, 2005. (in Chinese).
52. Xiang-Sun Zhang, **Yong Wang**, Zhong-Wei Zhan, and Ling-Yun Wu. **Exploring protein's optimal HP configurations by self-organizing.** *Journal of Bioinformatics and Computational Biology*, Vol. **3**, No. 2, pp. 305–320, 2005.
53. Zhen-Ping Li, **Yong Wang**, Yu-Ying Zhao, and Xiang-Sun Zhang. **Haplotype inference and mating graphs.** *Applied Mathematics Journal of Chinese Universities (Series A)*, Vol. **19**, Supplement, pp. 567–576, 2004.
54. Jia-Quan Dai, En-Min Feng, and **Yong Wang**. **An integrated optimal controlling model for exploration and extraction of oil and gas resources.** *Journal of Engineering Mathematics*, Vol. **21**, No. 3, pp. 307–311, 2004. (in Chinese).
55. Jia-Quan Dai, **Yong Wang**, and En-Min Feng. **The uncertainty analysis and optimal strategies for exploration and extraction of oil and gas resources.** *Systems Engineering-Theory & Practice*, Vol. **24**, No. 1, pp. 35–40, 2004. (in Chinese)

56. Ju-Liang Zhang and **Yong Wang**. **A new trust region method for nonlinear equations**. *Mathematical Method of operational research*, Vol. **58**, No. 3, pp. 283–298, 2003.
57. Xiaoxia He, Zhongyu Gao, and **Yong Wang**. **Application of image processing technology in mass unbalance measurement of sphere**. *Journal of Image and Graphics*, Vol. **8(A)**, spec. 2003. (in Chinese).
58. En-Min Feng and **Yong Wang**. **Three-dimensional historical geology numerical simulation and its system identification model**. *Appl. Math. J Chinese Univ. Ser.A*, Vol. **18**, No. 2, pp. 171–178, 2003. (in Chinese).
59. Jia-Quan Dai, **Yong Wang**, En-Min Feng, Xiongqi Pang, and Zhijun Jin. **Optimization model and algorithm of distribution prediction of deep basin gas**. *Operations Research and Management Science*, Vol. **12**, No. 3, pp. 1–4, 2003. (in Chinese).
60. Jiaquan Dai, **Yong Wang**, En-Min Feng, Xiongqi Pang, and Zhijun Jin. **Numerical simulation of dynamic distribution and accumulation mechanism of deep basin gas**. *ACTA Petrol EI Sinica*, Vol. **24**, No. 1, pp. 39–43, 2003. (in Chinese).
61. En-Min Feng and **Yong Wang**. **On the use of ABS algorithm in the modeling of oil deposit**. *Ricerca Operativa (Optimization and Decision Sciences)*, **31**(98/100), pp. 87–107, 2001, Fascicolo 98.

Publications — Proceedings articles

1. **Yong Wang**, Qiao-Feng Wu, Chen Chen, Xian-Zhong Yan, Shu-Guang Yu, Xiang-Sun Zhang, Fan-Rong Liang. **Identifying Biomarkers for Acupuncture Treatment via an Optimization Model**. Proceedings of The 5th IEEE International Conference on Systems Biology (ISB 2011), 319–326, 2011.
2. Ji-Bin Qu, Xiang-Sun Zhang, Ling-Yun Wu, **Yong Wang**, Luonan Chen. **Detecting Coherent Local Patterns from Time Series Gene Expression Data by a Temporal Biclustering Method**.

- Proceedings of The 5th IEEE International Conference on Systems Biology (ISB 2011), 399–404, 2011.
3. Guanying Piao, Bangguo Qian, Shigeru Saito, Zhi-Ping Liu, Tao Zeng, **Yong Wang**, Jiarui Wu, Huarong Zhou, Luonan Chen, Katsuhisa Horimoto. **Phenotype-Difference Oriented Identification of Molecular Functions for Diabetes Progression in Goto-Kakizaki Rat**. Proceedings of The 5th IEEE International Conference on Systems Biology (ISB 2011), 111–116, 2011.
 4. Yu-Shu Liu, Chung-Hsiao Chao, Hao-Teng Chang, **Yong Wang**, Margaret Dah-Tsyr Chang, Tun-Wen Pai. **Comparative Genomics Revealed a Novel DNA-Binding Regulatory Protein Involved in Homologous Recombination in Bacteria**. Proceedings of The 5th IEEE International Conference on Systems Biology (ISB 2011), 137–143, 2011.
 5. Shigeru Saito, Yidan Sun, Zhi-Ping Liu, **Yong Wang**, Xiao Han, Huarong Zhou, Luonan Chen, Katsuhisa Horimoto. **Identification of Master Regulator Candidates for Diabetes Progression in Goto-Kakizaki Rat by a Computational Procedure**. Proceedings of The 5th IEEE International Conference on Systems Biology (ISB 2011), 197–202, 2011.
 6. Xianwen Ren, **Yong Wang**, Luonan Chen, Xiang-Sun Zhang. **A Linear Programming Model for Identifying Non-Redundant Biomarkers Based on Gene Expression Profiles**. Proceedings of The 5th IEEE International Conference on Systems Biology (ISB 2011), 249–254, 2011.
 7. **Yong Wang**, Jiguang Wang, Chen Chen, Xiang-Sun Zhang. **A Regularized Optimization Model for Community Identification in Complex Networks**, Lecture Notes in Operations Research, 14, pp. 147–156, World Publishing Corporation, Beijing, 2011.
 8. Xianwen Ren, **Yong Wang**, Xiang-Sun Zhang. **A Flexible Convex Optimization Model for Semi-supervised Clustering with Instance level Constraints**, Lecture Notes in Operations Research, 14, pp. 178–185, World Publishing Corporation, Beijing, 2011.

9. **Yong Wang**, Katsuhisa Horimoto, Luonan Chen. **An Integrated Pipeline for Gene Regulatory Network Inference**. Proceedings of The 30th Chinese Control Conference (CCC), pp. 6593-6598, Yantai, 2011.
10. Xianwen Ren, **Yong Wang**, Jiguang Wang, Xiang-Sun Zhang. **An Optimization Model for Fuzzy Binary Clustering**. Lecture Notes in Operations Research, 13, pp. 422–432, World Publishing Corporation, Beijing, 2010.
11. Jiguang Wang, **Yong Wang**, Xianwen Ren, Wei Guo, Luonan Chen. **Uncover the Transient Transcriptional Regulations by a Novel Sliding Window Correlation Strategy**. Lecture Notes in Operations Research, 12, pp. 235–242, World Publishing Corporation, Beijing, 2010.
12. **Yong Wang**, Xiang-Sun Zhang, Katsuhisa Horimoto, Luonan Chen. **System Identification Models for Gene Regulation System**. Proceedings of The 29th Chinese Control Conference (CCC), pp. 6239-6244, Beijing, 2010.
13. Ji-Guang Wang, Lin Wang, Yu-Qing Qiu, **Yong Wang**, and Xiang-Sun Zhang, **A Constrained Optimization Method for Community Detection**. Optimization and Systems Biology, Lecture Notes in Operations Research, 11, pp. 142–150, World Publishing Corporation, Beijing, 2009.
14. Biao-Bin Jiang, Ji-Guang Wang, Jing-Fa Xiao, and **Yong Wang**. **Gene Prioritization for Type 2 Diabetes in Tissue-specific Protein Interaction Networks**. Optimization and Systems Biology, Lecture Notes in Operations Research, 11, pp. 319–328, World Publishing Corporation, Beijing, 2009.
15. Zhi-Ping Liu, **Yong Wang**, Tieqiao Wen, Xiang-Sun Zhang, Weiming Xia, and Luonan Chen. **Dynamically dysfunctional protein interactions in the development of Alzheimer’s disease**. 2009 IEEE International Conference on Systems, Man, and Cybernetics.
16. **Yong Wang** and Yu Xia, **Condition specific subnetwork identification using an optimization model**. Optimization and Systems Biology, Lecture Notes in Operations Research, 9, pp. 329–336, World Publishing Corporation, Beijing, 2008.

17. Rui-Sheng Wang, **Yong Wang**, Xiang-Sun Zhang, and Luonan Chen. **Detecting community structure in complex networks by optimal rearrangement clustering**. PAKDD 2007 workshop on Data Mining in Biomedical Applications, Lecture Notes in Artificial Intelligence, 4819, pp. 119–130, 2007.
18. Zhi-Ping Liu, Ling-Yun Wu, **Yong Wang**, Xiang-Sun Zhang, and Luonan Chen. **An approach for clustering protein pockets into similar groups**. Optimization and Systems Biology, Lecture Notes in Operations Research, 7, pp. 204-212, World Publishing Corporation, Beijing, 2007.
19. **Yong Wang**, Rui-Sheng Wang, Xiang-Sun Zhang, and Luonan Chen. **Establishing protein functional linkage in a systematic way**. Optimization and Systems Biology, Lecture Notes in Operations Research, 7, pp. 75–88, World Publishing Corporation, Beijing, 2007.
20. Zikai Wu, **Yong Wang**, Enmin Feng, and Luonan Chen, **Assessing distance measures for protein structure comparison**. Optimization and Systems Biology, Lecture Notes in Operations Research, 7, pp. 324-331, World Publishing Corporation, Beijing, 2007.
21. Zhenping Li, Rui-Sheng Wang, and **Yong Wang**. **A quadratic programming model for political districting problem**. Optimization and Systems Biology, Lecture Notes in Operations Research, 7, pp. 427-435, World Publishing Corporation, Beijing, 2007.
22. **Yong Wang**, Zhen-Ping Li, Xiang-Sun Zhang, and Luonan Chen. **3D structural motif finding in protein structures by network alignment**. Vol. D. -S. Huang et. al (Eds.) The Study of Intelligent Computing Theory and Methodology in Bioinformatics, WICB2006, 2006.
23. **Yong Wang**, Trupti Joshi, Xiang-Sun. Zhang, Dong Xu and Luonan Chen. **Supervised inference of gene regulatory networks by linear programming**. D. -S. Huang, K. Li and G. W. Irwin (Eds.): ICIC2006, Lecture Notes in Bioinformatics, Vol. 4115, pp. 551-561, 2006.
24. **Yong Wang**, Ling-Yun Wu, Xiang-Sun Zhang, and Luonan Chen. **Protein structure comparison by both structure and sequence data**.

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25. **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**. Lecture Notes in Computer Science, Vol. 3959 . pp. 505–514, Springer-Verlag, 2006.
 26. Zi-Kai Wu, **Yong Wang**, En-Min Feng, and Jin-Cheng Zhao. **Protein structure comparison based on a measure of information discrepancy**. Lecture Notes in Computer Science, Vol. 3959 . pp. 515–527, Springer-Verlag, 2006.
 27. Zhenping Li, **Yong Wang**, Shihua Zhang, Xiang-Sun Zhang, and Luonan Chen. **Alignment of protein interaction networks by integer quadratic programming**. Proceedings of the 28th IEEE EMBS Annual International Conference New York City, USA, Aug 30-Sept 3, pp. 5527–5530, 2006.
 28. Xiang-Sun Zhang, Zhong-Wei Zhan, **Yong Wang**, and 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, 5, pp. 276-284, World Publishing Corporation, Beijing, 2005.
 29. 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**. Symposium of 7th Academic Communication Meeting of Operations Research of China. Proceedings of ORSC 2004, pp. 1268–1278, Global-Link Publishing Company, 2004.
 30. Zhong-Wei Zhan, **Yong Wang**, Ling-Yun Wu, and Xiang-Sun Zhang. **Evaluation of E-government services based on data envelopment analysis**. Symposium of 7th Academic Communication Meeting of Operations Research of China. Proceedings of ORSC 2004, pp. 348-354, Global-Link Publishing Company, 2004. (in Chinese).
 31. En-Min Feng, Jun Zhang, Xilu Wang, and **Yong Wang**. **Layout optimization in synthesis problems of heat transfer network**. Sym-

posium of 6th academic communication meeting of operational research of China. Proceedings of ORSC 2000, Global-Link Publishing Company, 2000. (in Chinese).

Professional Activities

1. Workshop on Transcriptomics and Epigenomics, Institute for Pure and Applied Mathematics (IPAM). October 25 - 28, 2011.
2. Mini-Workshop on Cancer Genomics, Institute for Pure and Applied Mathematics (IPAM). October 31 - November 1, 2011.
3. Program Committee, The Second International Workshop on Integrative Data Analysis in Systems Biology (IDASB) in BIBM2011, Atlanta, Georgia, USA, Nov. 12–15, 2011.
4. Chair of Invitation Session on Systems Biology, The 30th Chinese Control Conference (CCC2011), Yantai, China, July 22–24, 2011.
5. Program Committee, ACM Conference on Bioinformatics, Computational Biology and Biomedicine (ACM BCB) on August 1–3, 2011 in Chicago, Illinois, USA.
6. Program Committee, The Seventh International Conference on Intelligent Computing (ICIC2011) on August 11–14, 2011 in Zhengzhou, China.
7. Program Committee, Workshop on Computational Proteomics in BIBM2010, HongKong, China, Dec. 18–21, 2010.
8. Program Committee, Workshop on Integrative Data Analysis in Systems Biology in BIBM2010, HongKong, China, Dec. 18–21, 2010.
9. Invited Speaker, The 8-th life science forum of Beijing: the inter-disciplinary research on mathematics and biology, Beijing, China, July 16, 2010.
10. Organizing Committee, The 9th International Symposium on Operations Research and Its Applications (ISORA 2010), Chengdu, China, Aug. 20-24, 2010.
11. Organizing Committee, The 4th International Conference on Computational Systems Biology (ISB 2010), Suzhou, China, Sept. 9–11, 2010.

12. Co-Chair of Invitation Session on Systems Biology, The 29th Chinese Control Conference (CCC2010), Beijing, China, July 29–31, 2010.
13. Invited Speaker, The 2nd International Conference on Computation of Inverse Problem, Beijing, China, July 12, 2010.
14. Program Committee, IEEE International Conference on Bioinformatics & Biomedicine (BIBM), HongKong, China, Dec. 19–22, 2010.
15. Local Organizing Committee, The 21th International Conference on Genome Informatics (GIW2010) , December 16–18, 2010, Hangzhou, China.
16. Invited speaker, Kavil Institute for Theoretical Physics China program on Emergent behaviour of biomolecular ensembles and networks, July 2010, Beijing, China
17. Organizing Committee, Trilateral Symposium on Systems and Synthetic Biology 2010, October 2–4, Tokyo, Japan, 2010.
18. Invited visitor, Department of Mathematics, The Chinese University of Hong Kong, 18–25 April 2010, HongKong, China.
19. Invited speaker, Sino-German Workshop on Computational systems biology approaches for cancer research and biomarker discovery, 11–15 January 2010 Hangzhou, China
20. invited speaker, Workshop on biological network in Computational Biology Research Center of AIST, 10-11 December 2009, Tokyo, Japan
21. Program Committee, The 2010 Third International Conference on Life System Modeling and Simulation (LSMS), Shanghai, China, Sept. 17–20, 2010.
22. Program Committee, The 2009 International Conference on Optimization and Systems Biology (OSB), Zhangjiajie, China, Sept. 20–22, 2009.
23. Invited Speaker, Trilateral Symposium on Systems and Synthetic Biology 2009, August 13–15, Seoul, Korea, 2009.
24. Visiting Osaka University, Kyoto University, and Osaka Sangyo University. July 5– July 18, 2009

25. Invited Speaker, Workshop on complex network, bioinformatics and others, June 25 2009, Beijing, China.
26. Invited Speaker, Westlake International Conference on Personalized Medicine, May 29, 2009, HangZhou, China.
27. Program Committee, The 2009 International Conference on Intelligent Computing (ICIC), Ulsan, Korea, September 16–19, 2009.
28. Poster, Recovering Gene Regulations by Optimization Model, Asia Pacific Bioinformatics Conference (APBC2009), Beijing, China.
29. Invited Speaker, Systems Biology Workshop: The 8-th frontier forum for Systems and Control Science. December 12–13, Beijing, 2008.
30. Visiting Osaka University, Kyoto University, and Osaka Sangyo University. November 17– December 7, 2008
31. Program Committee, The 2008 International Conference on Optimization and Systems Biology (OSB), Lijiang, China, October 31–November 3, 2008.
32. Program Committee, The 2008 International Conference on Intelligent Computing (ICIC), Shanghai, China, September 15–18, 2008.
33. Invited Speaker, Biological Network Comparison: Problems and Challenges, Systems Biology Summer School of Shanghai University, Aug. 10, 2007, Shanghai, China.
34. Invited Speaker, Establishing protein functional linkage in a systematic way, Systems biology workshop in Soochow University, Mar. 10, 2007, Suzhou, China.
35. Program Committee, The 2007 International Conference on Optimization and Systems Biology (OSB), Beijing, China, August 7–9, 2007.
36. Program Committee, The 2007 International Conference on Intelligent Computing (ICIC), Qingdao, China, August 21–24, 2007.
37. Program Committee, The 2nd International Conference on Life System Modeling and Simulation (LSMS), Shanghai, China, September 14–17, 2007.

38. Poster, Whole-Genome Functional Linkage Network Construction in the Domain Level by Probabilistic Model, GIW2006, Yokohama, Japan.
39. Invited Speaker, Inferring gene regulatory network form multiple datasets, WICB2006, Nov. 11-14,2006, Hefei, China.
40. Poster, Inferring Protein Network by Multiple Domain Interactions, ICSB2006, Yokohama, Japan.
41. Oral Speaker, Supervised inference of gene regulatory network by linear programming, ICIC2006, Kunming, China.
42. Oral Speaker, Exploring the classification of protein structures on geometric patterns by neural networks, ISSN2006, Chengdu, China.
43. Oral Speaker, Automatic classification of protein structure based on convex hull representation, TAMC2006, Beijing, China.
44. Poster, Inferring Protein Interaction Network by Boosting Algorithm, GIW2005, Yokohama, Japan.
45. Invited Speaker, Protein Structure Prediction by SOM Approach, PhD candidate research seminar of Department of Mathematics, Tsinghua University, Beijing, China.

Editorial board

- Associate Editor of BMC Research Notes (BioMed Central's open access journal)
- Associate Editor of The Open Information Systems Journal

Referee

- Bioinformatics
- Proteins: Structure, Function, and Bioinformatics
- Evolutionary Bioinformatics
- IET Systems Biology
- BMC Systems Biology

- BMC Bioinformatics
- PLoS Computational Biology
- Algorithmic
- Acta Mathematicae Applicatae Sinica
- Journal of Systems Science and Mathematical Science
- OR Transactions
- Operations Research and Management Science
- International Journal of Computer Mathematics
- Mathematical Biosciences
- IEEE/ACM Transactions on Computational Biology and Bioinformatics
- Protein Engineering, Design, and Selection
- Journal of Theoretical Biology
- Frontiers of Electrical and Electronic Engineering in China
- Molecules
- Journal of Convergence Information Technology
- International Journal of Knowledge Discovery in Bioinformatics

Honors and Awards

1997, First class scholarship of Inner Mongolia Uni.

1998, Second class scholarship of Inner Mongolia Uni.

1998, Guanghua scholarship.

1999, Baosteel scholarship.

2004, Excellent graduate student award of MADIS, CAS.

2004, The Presidential Outstanding Research Scholarship from the Academy of Mathematics and Systems Science of Chinese Academy of Sciences.

2008, The Significant Achievement Award from the Academy of Mathematics and Systems Science of Chinese Academy of Sciences.

2010, Best Poster Award received in the 21st International Conference on Genome Informatics (GIW2010) for "An integrated gene regulatory network inference pipeline" by Yong Wang, Katsuhisa Horimoto, and Luonan Chen.