

Curriculum Vitae

Name: Guochuan Zhang (Ph.D. in Operations Research, Academia Sinica, 1995)

Date of Birth: May 9, 1966

Sex: Male

Marital Status: Married with one child

Nationality: Chinese

Present Address: College of Computer Sciences

Zhejiang University

Hangzhou 310027

China

E-mail: zgc@zju.edu.cn

Homepage: <http://www.cs.zju.edu.cn/people/zgc>

Education:

- Ph.D. (1992 - 1995), Academia Sinica, Beijing. Thesis: *On-Line Bin Packing and Open Shop Scheduling - Algorithms and Analyses*. (Supervisor: Prof. Minyi Yue)
- M.Sc. (1986 - 1989), Chengdu University of Science and Technology and Academia Sinica, Beijing. Master's thesis: *Computing Methods for Optimal Control*.
- B.Sc. (1982 - 1986), Chengdu University of Science and Technology.

Working Experiences:

- Professor (Jan. 2009 -), College of Computer Science, Zhejiang University, China.
- Professor (Dec. 2000 - Dec. 2008), Department of Mathematics, Zhejiang University, China.
- Research Scientist (Feb. 2004 - Sept. 2004), Institute of Computer Science, University of Freiburg, Germany. (With Prof. Dr. S. Albers)
- Guest Professor (Nov. 2002 - Jan. 2004), Institute of Computer Science and Applied Mathematics, University of Kiel, Germany. (With Prof. Dr. K. Jansen)
- Alexander-von-Humboldt Research Fellow (April 2001- Oct. 2002), Institute of Computer Science and Applied Mathematics, University of Kiel, Germany. (With Prof. Dr. K. Jansen)

- Postdoctoral Research Fellow (July 2000 - Dec. 2000), Department of Systems Engineering & Engineering Management, The Chinese University of Hong Kong. (With Prof. Dr. X.Q. Cai and Prof. Dr. C.K. Wong)
- Research Associate (Nov. 1998 - Nov. 1999), Department of Computer Science & Engineering, and Department of Systems Engineering & Engineering Management, The Chinese University of Hong Kong. (With Prof. Dr. C.K. Wong and Prof. Dr. X.Q. Cai)
- Postdoctoral Research Fellow (Oct. 1996 - June 1998), Institute of Mathematics, Zhejiang University, China. (With Prof. E. Yao)
- Guest Researcher (Oct. 1995 - Sept. 1996), SFB F003 “Optimierung und Kontrolle”, Institute of Mathematics, Technical University of Graz, Austria. (With Prof. Dr. R.E. Burkard)

Research Interests:

- On-Line Algorithms and Approximation Algorithms
- Scheduling, Sequencing and Planning
- Packing and Covering
- Network Optimization
- Algorithmic Games

Teaching:

- Calculus, Analysis, Linear Algebra, Discrete Mathematics, Probability, Approximation Algorithms, Combinatorial Optimization, Graph Theory, Network Optimization (Zhejiang University)
- Online Algorithms (University of Kiel)
- Research Seminars (University of Kiel, University of Freiburg, Zhejiang University)
- Supervising PhD students (Zhejiang University)

Languages:

- Chinese: native language
- English: very good in reading, writing and speaking
- German: basic knowledge

Scientific Activities:

- Associate Editor, Asia-Pacific Journal of Operational Research, since November 2004.
- Subject Area Editor, Parallel Computing, since February 2007.
- Guest Editor, special issue on “New challenges in scheduling theory”, Journal of Scheduling, 2009.
- Executive Council Member, The Operations Research Society of China, since October 2008.
- PC member, ISAAC 2005, ESCAPE 2007 (Co-Chair), PMGC 2007, COCOON 2008, COCOA 2008, AAAC 2008, WAOA 2009, FAW 2009, AAAC 2009, ASTEC 2009.

Participation in Conferences, Symposium, Workshops, etc.

- HCM workshop Graz-Berlin “New Methods in Combinatorial Optimization” at Institut für Mathematik, TU Graz, August 29-30, 1996.
- Symposium on Operations Research (SOR), TU Braunschweig, Germany, September 3-6, 1996. “Optimal logistics for expeditions - the jeep problem”.
- Discrete Optimization’99, a DIMACS-RUTCOR Workshop at Rutgers University, July 25-31, 1999. “On-Line algorithms for minimizing makespan on a single batch processing machine with dynamic job arrivals”.
- Mathematical Methods in Manufacturing and Logistics, Oberwolfach, Germany, December 16-22, 2001. “Batch processing machine scheduling”.
- SIGOPT-International Conference on Optimization, Lambrecht (Pfalz), Germany, February 17-22, 2002. “Maximize the number of early multiprocessor tasks”.
- Dagstuhl Seminar on On-Line Algorithms, Dagstuhl Schloss, Germany, June 30-July 5, 2002.

- The 27th International Symposium on Mathematical Foundations of Computer Science (MFCS), Warsaw-Otwock, Poland, August 26-30, 2002. “On maximizing the throughput of multiprocessor tasks”.
- The 3rd International Workshop on Approximation and Randomized Algorithms in Communication Networks, Rome, Italy, September 21, 2002. “On variable-sized bin packing”.
- IST-FET (Foundations of networks and large distributed environments) Review Meeting, Paphos, Cyprus, Jan. 30-Feb. 4, 2003, “Maximizing the throughput of multiprocessor tasks”.
- EU Project Workshop APPOL II (Approximation and On-Line Algorithms), Bertinoro, Italy, March 23-28, 2003.
- EU Project Workshop CRESCCO (Critical resource sharing for cooperation in complex systems, IST-2001-33135), Santorini, Greece, June 4-6, 2003.
- The 7th Japan-Korea Workshop on Algorithms and Computation (WAAC03), Sendai, Japan, July 3-4, 2003. “Online removable knapsack - weighted case”.
- EU Project Workshop APPOL II (Approximation and On-Line Algorithms), Szeged, Hungary, September 12-13, 2003.
- Workshop on Approximation and Online Algorithms (WAOA), Budapest, Hungary, September 15-20, 2003. “On-line extensible bin packing with unequal bin sizes”.
- The 14th Annual International Symposium on Algorithms and Computation (ISAAC), Kyoto, Japan, December 15-17, 2003. “On-line scheduling of parallel jobs with dependencies on 2-dimensional meshes”.
- The Upper Rhine Algorithms Workshop (URAW), Karlsruhe, Germany, March 19-20, 2004, “Maximizing the number of packed rectangles”.
- Workshop on On-Line Algorithms (OLA), Rungsted Kyst, Denmark, July 5-7, 2004, “On-line scheduling of parallel jobs”.
- The 9th Scandinavian Workshop on Algorithm Theory (SWAT), Humleb?k, Denmark, July 8-10, 2004, “Maximizing the number of packed rectangles”.

- Dagstuhl Seminar on Algorithms for Optimization with Incomplete Information, Schloss Dagstuhl, Germany, January 16-21, 2005, “Online removable square packing”.
- The 16th Annual International Symposium on Algorithms and Computation (ISAAC), Sanya, China, December 19-21, 2005.
- C.I.R.M. Workshop on Scheduling Algorithms for New Emerging Applications , Marseille, France, May 29-June 2, 2006. “Online scheduling with hard deadlines”.
- The Second International Conference on Algorithmic Aspects in Information and Management (AAIM) , Hong Kong, China, June 20-22, 2006. “Online scheduling with hard deadlines”
- INFORMS International Conference, Hong Kong, China, June 25-28, 2006. “Common deadline lazy bureaucrat scheduling”.
- The First AAAC Annual Meeting, Hong Kong, April 26-27, 2008.
- C.I.R.M. Workshop on New Challenges in Scheduling Theory, Marseille, France, May 12-16, 2008.
- Bonn Workshop on Combinatorial Optimization, Bonn, Germany, November 3-7, 2008. “Stable bin packing ”.
- The 4th International Workshop on Internet and Network Economics (WINE), Shanghai, China, December 17-20, 2008. “Bin packing of selfish items”.

Invited Lectures and/or Short Visits

- Department of Computer Science, Attila Jozsef University, Szeged, Hungary, December 3-6, 1995. “Some results on on-line bin packing”.
- Department of Computer Science, Attila Jozsef University, Szeged, Hungary, March 10-30, 1996. “Semi on-line algorithms for scheduling problems”.
- Department of Computer Science, Evry University, France, November 10-20, 2001. Working on “multiprocessor-tasks scheduling”.
- ID-Institute IMAG, Grenoble, France, September 8-15, 2002. Working on “On-line scheduling for malleable tasks”.

- DFG Graduate School CGC, Free University of Berlin, June 16-17, 2003. “Scheduling parallel jobs on networks”.
- DFG Graduate School 357, Kiel University, June 30, 2003. “Scheduling parallel jobs on networks”.
- School of Informatics, Kyoto University, Japan, July 6-8, 2003. “Two-dimensional bin packing with applications in scheduling”.
- ID-Institute IMAG, Grenoble, France, October 19-24, 2003. Working on “Cluster scheduling with sharing resources”.
- Department of Computer Science, University of Szeged, Szeged, Hungary, June 23-27, 2004. Working on “New problems in bin packing”.
- Department of Computer Science, University of Kiel, Germany, January 21-February 14, 2005. “Online removable square packing”.
- School of Informatics, Kyoto University, Japan, January 21- February 16, 2006. “To be energetic or lazy? It is a problem!”.
- Department of Systems Engineering and Engineering Management, Chinese University of Hong Kong, March 5-21, 2006.
- Department of Industrial Engineering and Logistics Management, The Hong Kong University of Science and Technology, March 17, 2006. “Online and Offline Algorithms for Two-Dimensional Knapsack”
- ID-Institute IMAG, Grenoble, France, July 1-22, 2007. Working on “On-line scheduling”.
- Research Institute of Discrete Mathematics, University of Bonn, Germany, July 23-26, 2007. “Strip Packing vs. Bin Packing”.
- School of Informatics, Kyoto University, Japan, January 21-February 20, 2008. “On-line scheduling of equal-length jobs on parallel machines”.
- Department of Computer Science, The Hong Kong University of Science and Technology, March 1-31, 2008. “Online scheduling of equal-length jobs on parallel machines”.

- Department of Computer Science, The University of Hong Kong, April 28-May 2, 2008.
- ID-Institute IMAG, Grenoble, France, May 17-22, 2008. Working on “On-line multi-thread caching”.
- School of Informatics, Kyoto University, Japan, January 20-February 19, 2009.

Research Funding and Projects:

- Research funding in China:
 1. Natural Science Foundation of China, Grant No. 10971192, Bin Packing: Models and Algorithms, Jan. 1, 2010 - Dec. 31, 2012.
 2. Natural Science Foundation of China, Grant No. 60573020, New Online Models and Techniques, Jan. 1, 2006 - Dec. 31, 2008.
 3. Natural Science Foundation of Zhejiang Province, China, Grant No. Y605353, Network Games, Jan. 1, 2006 - Dec. 31, 2008.
 4. PPP by CSC-DAAD: A joint project between Zhejiang University, China and University of Kiel, Germany, Scheduling on Communication Networks, Jan. 1, 2006 - Dec. 31, 2007.
 5. Natural Science Foundation of China, key program, Grant No. 10231060, “Theory and Methods of Optimization with Applications” (2003-2006). PI: Prof. Ya-Xiang Yuan, Academia Sinica.
 6. National 973 Fundamental Research Project of China on “Applied Theory and High-Performance Software for IT” *Optimal Methods in Information Science and Technology*, sub-project “Combinatorial Optimization” (1998-2002).
 7. Natural Science Foundation of China, Grant No. 19801032, “Efficient Algorithms for Hard Problems in Combinatorial Optimization” (1999-2001).
 8. Postdoctoral Science Foundation of China (1998).
 9. Science Foundation for Returned Overseas Chinese Students Granted by the Ministry of Education of China (1997-1998).
- Research projects involved in Germany:
 1. DFG Project, Effiziente Algorithmen für aktuelle Cachingprobleme.

2. EU-Project CRESCCO, Critical resource sharing for cooperation in complex systems, IST-2001-33135. <http://www.ceid.upatras.gr/crescco/>
3. EU-Project APPOL II, Thematic Network, Approximation and Online Algorithms for Optimization Problems, IST-2001-32007.
<http://www.informatik.uni-kiel.de/inf/Jansen/appol2/index.html>
4. DAAD-Project, Integration of Task Scheduling for Parallel Computers into Compilers and Software Development Environments.

Publications

Books edited

- [1] Bo Chen, Mike Paterson, Guochuan Zhang: Combinatorics, Algorithms, Probabilistic and Experimental Methodologies, First International Symposium, ESCAPE 2007, Hangzhou, China, April 7-9, 2007, Revised Selected Papers, *LNCS 4614*, Springer 2007.

Journal Papers

- [34] J.J. Paulus, D. Ye, and G. Zhang, Optimal online-list batch scheduling. *Information Processing Letters* **109**, 1125-1128, (2009).
- [33] G. Yu and G. Zhang, Scheduling with a minimum number of machines. *Operations Research Letters* **37**, 97-101 (2009).
- [32] L. Gai and G. Zhang, Hardness of lazy packing and covering. *Operations Research Letters* **37**, 89-92 (2009).
- [31] D. Ye, X. Han, and G. Zhang, A note on online strip packing. *Journal of Combinatorial Optimization* **17**, 417-423 (2009).
- [30] D. Ye and G. Zhang. On-line extensible bin packing with unequal bin sizes. *Discrete Mathematics & Theoretical Computer Science* **11**, 141-152 (2009).
- [29] L. Gai and G. Zhang, On lazy bureaucrat scheduling with common deadlines. *Journal of Combinatorial Optimization* **15**, 191-199 (2008).
- [28] X. Han, K. Iwama, and G. Zhang, Online removable square packing. *Theory of Computing Systems* **43**, 38-55 (2008).
- [27] D. Ye, W.-T. Chan, F. Chin, G. Zhang, and Y. Zhang, On-line scheduling of parallel jobs on two machines. *Journal of Discrete Algorithms* **6**, 3-10 (2008).
- [26] D. Ye and G. Zhang, On-line scheduling of parallel jobs in a list. *Journal of Scheduling* **10**, 407-413 (2007).
- [25] W.-T. Chan, F. Chin, D. Ye, G. Zhang, and Y. Zhang, On-line bin packing of fragile objects with application in cellular networks. *Journal of Combinatorial Optimization* **14**, 427-435 (2007).

- [24] D. Ye and G. Zhang, Maximizing the throughput of parallel jobs on hypercubes. *Information Processing Letters* **102**, 259-263 (2007).
- [23] K. Jansen and G. Zhang, Maximizing the total profit of rectangles packed into a rectangle. *Algorithmica* **47**, 323-342 (2007).
- [22] D. Ye and G. Zhang, On-line scheduling mesh jobs with dependencies. *Theoretical Computer Science* **372**, 94-102 (2007).
- [21] G. Zhang, A 3-approximation algorithm for two-dimensional bin packing. *Operations Research Letters* **33**, 121-126 (2005).
- [20] D. Du, X. Jiang, and G. Zhang, Optimal preemptive online scheduling to minimize lp norm on two processors. *Journal of Industrial and Management Optimization* **1**, 345-351 (2005).
- [19] G. Zhang, X. Cai and C.K. Wong, Some results on resource constrained scheduling. *IIE Transactions on Scheduling and Logistics* **36**, 1-9 (2004)
- [18] G. Zhang, X. Cai and C.K. Wong, Optimal on-line algorithms for scheduling on parallel batch processing machines. *IIE Transactions on Scheduling and Logistics* **35**, 175-181 (2003).
- [17] D. Ye and G. Zhang, On-line scheduling with extendable working time on a small number of machines. *Information Processing Letters* **85**, 171-177 (2003).
- [16] A.v. Fishkin and G. Zhang, On maximizing the throughput of multiprocessor tasks. *Theoretical Computer Science* **302**, 319-335 (2003).
- [15] G. Zhang and D. Ye, A note on on-line scheduling with partial information. *Computer and Mathematics with Applications* **44**, 539-543 (2002).
- [14] G. Zhang, X. Cai, C.-Y. Lee and C.K. Wong, Minimizing makespan on a single batch processing machine with nonidentical job sizes. *Naval Research Logistics* **48**, 226-240 (2001).
- [13] G. Zhang, X. Cai and C.K. Wong, On-line algorithms for minimizing makespan on batch processing machines. *Naval Research Logistics* **48**, 241-258 (2001).
- [12] G. Zhang, An on-line bin-batching problem. *Discrete Applied Mathematics* **108**, 329-333 (2001).

- [11] G. Zhang, X. Cai and C.K. Wong, Linear time approximation algorithms for bin packing. *Operations Research Letters* **26**, 217-222 (2000).
- [10] G. Chen and G. Zhang, A constrained minimum spanning tree problem. *Computers and Operations Research* **27**, 867-875 (2000).
- [9] G.J. Woeginger and G. Zhang, Optimal on-line algorithm for variable-sized bin covering. *Operations Research Letters* **25**, 47-50 (1999).
- [8] Y. He and G. Zhang, Semi on-line scheduling on two identical machines. *Computing* **62**, 179-187 (1999).
- [7] G. Zhang, Parameterized on-line open-end bin packing. *Computing* **60**, 267-273 (1998).
- [6] J. Han, J. Wen and G. Zhang, A new approximation algorithm for UET-scheduling with chain-type precedence constraints. *Computers and Operations Research* **25**, 767-771 (1998).
- [5] G. Zhang, A new version of online variable-sized bin packing. *Discrete Applied Mathematics* **72**, 193-197 (1997).
- [4] G. Zhang, A simple semi on-line algorithm for $P2//C_{\max}$. *Information Processing Letters* **61**, 145-148 (1997).
- [3] R.E. Burkard and G. Zhang, K -bounded space online variable-sized bin packing. *Acta Cybernetica* **13**, 63-76 (1997).
- [2] G. Zhang and M. Yue, Tight worst-case performance bound of the AFB_k bin packing. *Acta Mathematicae Applicatae Sinica* (English series) **13**, 443-446 (1997).
- [1] G. Zhang, Worst-case analysis of the FFH algorithm for online variable-sized bin packing. *Computing* **56**, 165-173 (1996).

Conference Papers

- [20] D. Ye, X. Han, and G. Zhang, "On-line multiple-strip packing". Proceedings of the 3rd Annual International Conference on Combinatorial Optimization and Applications (COCOA), Huangshan, June 10-12, 2009. *LNCS* **5573**, 155-165 (2009).

- [19] J. Ding and G. Zhang, “A note on online scheduling for jobs with arbitrary release times”. Proceedings of the 3rd Annual International Conference on Combinatorial Optimization and Applications (COCOA), Huangshan, June 10-12, 2009. *LNCS* **5573**, 354-362 (2009).
- [18] G. Yu and G. Zhang, “Bin packing of selfish items”. Proceedings of the 4th Workshop on Internet and Network Economics (WINE), Shanghai, December 17-19, 2008. *LNCS* **5385**, 446-453 (2008).
- [17] J. Ding, T. Ebenlendr, J. Sgall, and G. Zhang, “Online scheduling of equal-length jobs on parallel machines”. Proceedings of the 15th Annual European Symposium on Algorithms (ESA), Eilat, Israel, October 8-10, 2007. *LNCS* **4698**, 427-438 (2007).
- [16] K. Iwama and G. Zhang, “Optimal resource augmentations for online knapsack”. Proceedings of the 10th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX), Princeton, August 20-22, 2007. *LNCS* **4627**, 180-188 (2007).
- [15] Y. Hou and G. Zhang, “The hardness of selective network design for bottleneck routing games”. Proceedings of the 4th Annual Conference on Theory and Applications of Models of Computation (TAMC), Shanghai, May 22-25, 2007. *LNCS* **4484**, 58-66 (2007).
- [14] X. Han, K. Iwama, D. Ye, and G. Zhang, “Strip packing vs. bin packing”. Proceedings of the 3rd International Conference on Algorithmic Aspects in Information and Management (AAIM), Portland, June 6-8, 2007. *LNCS* **4508**, 358-367 (2007).
- [13] N. Bansal, X. Han, K. Iwama, M. Sviridenko, and G. Zhang, “Harmonic algorithm for 3-dimensional strip packing problem”. Proceedings of the 18th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), New Orleans, USA, January 7-9, pp. 1197-1206, 2007.
- [12] J. Ding and G. Zhang, “Online scheduling with hard deadlines on parallel machines”. Proceedings of the 2nd International Conference on Algorithmic Aspects in Information and Management (AAIM), Hong Kong, June 20-22, 2006. *LNCS* **4041**, 32-42 (2006).

- [11] L. Gai and G. Zhang, “Common deadline lazy bureaucrat scheduling revisited”. Proceedings of the 7th Latin American Theoretical Informatics Symposium (LATIN), Valdivia, Chile, March 20-24, 2006. *LNCS* **3887**, 515-523 (2006).
- [10] X. Han, K. Iwama, and G. Zhang, “Online removable square packing”. Proceedings of the 3rd Workshop on Approximation and Online Algorithms (WAOA), Mallorca, Spain, October 6-7, 2005. *LNCS* **3879**, 216-229 (2006).
- [9] W.-T. Chan, F. Chin, D. Ye, G. Zhang, and Y. Zhang, “On-line bin packing of fragile objects with application in cellular networks”. Proceedings of the 1st Workshop on Internet and Network Economics (WINE), Hong Kong, December 15-17, 2005. *LNCS* **3828**, 564-573 (2005).
- [8] D. Ye, W.-T. Chan, F. Chin, G. Zhang, and Y. Zhang, “On-line scheduling of parallel jobs on two machines”. Proceedings of the 16th Australasian Workshop on Combinatorial Algorithms (AWOCA), Victoria, Australia, September 18-21, 2005, 369-380.
- [7] K. Jansen and G. Zhang, “Maximizing the number of packed rectangles”. Proceedings of the 9th Scandinavian Workshop on Algorithm Theory (SWAT), Humleb?k, Denmark, July 7-10, 2004. *LNCS* **3111**, 362-371 (2004).
- [6] D. Ye and G. Zhang, “On-line scheduling of parallel jobs”. Proceedings of the 11th Colloquium on Structural Information and Communication Complexity (SIROCCO), Smolenice Castle, Slovakia, June 21-23,2004. *LNCS* **3104**, 279-290 (2004).
- [5] K. Jansen and G. Zhang, “On rectangle packing: maximizing benefits”. Proceedings of the 15th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), New Orleans, USA, January 11-13, pp. 197-206, 2004.
- [4] D. Ye and G. Zhang, “On-line extensible bin packing with unequal bin sizes”. Proceedings of the First Workshop on Approximation and Online Algorithms (WAOA), Budapest, Hungary, September 15-20, 2003. *LNCS* **2909**, 235-247 (2003).
- [3] D. Ye and G. Zhang, “On-line scheduling of parallel jobs with dependencies on 2-dimensional mesh”. Proceedings of the 14th Annual International Symposium on Algorithms and Computation (ISAAC), Kyoto, Japan, December 15-17, 2003. *LNCS* **2906**, 329-338 (2003).

- [2] G. Zhang, “On variable-sized bin packing”. Proceedings of the 3rd international workshop on approximation and randomized algorithms in communication networks, Rome, Italy, September 21, 2002. *Proceedings in Informatics* **15**, Carleton Scientific, 117-126 (2002).
- [1] A.v. Fishkin and G. Zhang, “On maximizing the throughput of multiprocessor tasks”. Proceedings of the 27th International Symposium on Mathematical Foundations of Computer Science (MFCS), Warsaw, Poland, August 26-30, 2002. *LNCS* **2420**, 269-279 (2002).

Miscellaneous

- [1] G. Rote and G. Zhang, Optimal logistics for expeditions – The jeep problem with complete refilling. ”Spezialforschungsbereich F 003” technical report No. 71, Graz, Austria (1996).