

Curriculum Vitae

NAME: Huaming Zhang
HOME ADDRESS: 156 Amsterdam Place, Madison, AL, 35758
WORK ADDRESS: Computer Science Department, Technology Hall N300-I,
University of Alabama in Huntsville, Huntsville, AL 35899

EDUCATION

B.S., Mathematics, Anhui Normal University, Wuhu, China, 1992
M.S., Mathematics, University of Science and Technology, Hefei, China, 1995
M.S., Computer Science and Engineering, State University, of New York at Buffalo, Buffalo, NY, 2002
Ph.D., Computer Science and Engineering, State University of New York at Buffalo, June 2005
Dissertation: Graph orientation, labeling and their applications
Committee: Prof. Xin He. Advisor; Prof. Hung Q. Ngo; Prof. Jinhui Xu

EMPLOYMENT

1992-1995	Teaching Assistant	Department of Mathematics University of Science and Technology of China Hefei, China
1995-1998	Instructor	Department of Mathematics and Physics Wuyi University Jiangmen, China
1998-2002	Teaching Assistant	Department of Mathematics State University of New York at Buffalo, Buffalo, NY
Summer 2001	Software Engineer	EDI Services Inc. Buffalo, NY
2002-2003	Research Assistant	Department of Computer Science and Engineering State University of New York at Buffalo, Buffalo
Fall 2003	Teaching Assistant	Department of Computer Science and Engineering State University of New York at Buffalo, Buffalo
Spring 2004	Research Assistant	Department of Computer Science and Engineering State University of New York at Buffalo, Buffalo
Summer 2004	Research Assistant	Department of Computer Science and Engineering State University of New York at Buffalo, Buffalo
Fall 2004	Adjunct Instructor	Department of Computer Science State University of New York at Geneseo, Geneseo, NY
Fall 2004	Teaching Assistant	Department of Computer Science and Engineering State University of New York at Buffalo, Buffalo
Spring 2005	Instructor	Department of Computer Science and Engineering State University of New York at Buffalo, Buffalo
Fall 2005-now	Assistant Professor	Computer Science Department The University of Alabama in Huntsville, Huntsville

TEACHING EXPERIENCES:

- **The University of Alabama in Huntsville**
Teaching evaluation score average is 91.5 out of 100 for 21 regular classes and 1 distance learning at the University of Alabama in Huntsville.
- **Fall 2010:** Design and Analysis of Algorithms (CS617)
Introduction to Formal Languages and Automata Theory (CS403)

- **Summer 2010:** Design and Analysis of Algorithms (CS617)
- **Spring 2010:** Introduction to Object-Oriented Programming in Java (CS321)
Introduction to Design and Analysis of Algorithms (CS317)
- **Fall 2009:** Design and Analysis of Algorithms (CS617)
Introduction to Formal Languages and Automata Theory (CS403)
- **Spring 2009:** Introduction to Object-Oriented Programming in Java (CS321)
Introduction to Design and Analysis of Algorithms (CS317)
- **Fall 2008:** Design and Analysis of Algorithms (CS617)
Introduction to Formal Languages and Automata Theory (CS403)
- **Summer 2008:** Design and Analysis of Algorithms (CS617)
Design and Analysis of Algorithms (CS617, distance learning)
- **Spring 2008:** Introduction to Object-Oriented Programming in Java (CS321)
Introduction to Design and Analysis of Algorithms (CS317)
- **Fall 2007:** Introduction to Design and Analysis of Algorithms (CS317)
Formal Languages and Automata Theory (CS603)
- **Summer 2007:** Introduction to Design and Analysis of Algorithms (CS317)
- **Spring 2007:** Introduction to Object-Oriented Programming in Java (CS321)
Introduction to Design and Analysis of Algorithms (CS317)
- **Fall 2006:** Design and Analysis of Algorithms (CS617);
Introduction to Design and Analysis of Algorithms (CS317)
- **Spring 2006:** Design and Analysis of Algorithms (CS617)
- **Fall 2005:** Formal Languages and Automata Theory (CS603)

- **State University of New York at Buffalo**
 - **Spring 2005:** Algorithms and Data Structures (CSE250)

- **State University of New York at Geneseo**
 - **Fall 2004:** Analysis of Algorithms (CSCI242)
Theory of Computation (CSCI342)

PUBLICATIONS:

▪ **Refereed Journal Articles:**

1. H. Zhang and X. He, Generalized Greedy Routing Algorithm for 2-Connected Graphs, accepted to *Theoretical Computer Science*, available online Sept. 16th, 2010, DOI:10.1016/j.tcs.2010.08.032.
2. S. Sadasivam and H. Zhang, Closed Rectangle-of-influence Drawings for Irreducible Triangulations, *Computational Geometry: Theory and Applications*, Vol. 44, 2011, pp. 9-19, available online on July 16, 2010.
3. H. Zhang and S. Sadasivam, Improved floor-planning of graphs via adjacency-preserving transformations, *Journal of Combinatorial Optimization*, published on line on April 24th, 2010, DOI: 10.1007/s10878-010-9324-8.
4. S. Sadasivam and H. Zhang, NP-Completeness of st-Orientations for Plane Graphs, *Theoretical Computer Science*, Vol. 411, 2010, pp. 995-1003.
5. H. Zhang, Planar Polyline Drawings via Graph Transformation, *Algorithmica*, Vol. 57, 2010, pp. 381-397.
6. H. Zhang, and M. Vaidya, On Open Rectangle-of-influence and Rectangular Dual Drawings of Plane Graphs, *Discrete Mathematics, Algorithms and Applications*, Vol. 1, 2009, pp 319-333.
7. H. Zhang and X. He, Optimal st-Orientations for Plane Triangulations, *Journal of Combinatorial Optimization*, Vol. 17, 2009, pp. 367-377.
8. X. He and H. Zhang, Nearly Optimal Visibility Representations of Plane Triangulations, accepted to SIAM Journal on Discrete Mathematics, *SIAM Journal on Discrete Mathematics*, Vol. 22, 2008, pp. 1364-1380.
9. H. Zhang and X. He, An Application of Well-Orderly Trees in Graph Drawing, *International Journal of Foundations of Computer Science*, Vol. 17 2006, pp.1129-1141.
10. H. Zhang and X. He, On Simultaneous Straight-line Grid Embedding of a Planar Graph and its Dual, *Information Processing Letters*, Vol. 99 2006 pp.1-6.
11. H. Zhang and X. He, Visibility Representation of Plane Graphs via Canonical Ordering Tree, *Information Processing Letters*, Vol. 96 2005, pp. 41-48.
12. H. Zhang and X. He, On Even Triangulations of 2-Connected Embedded Graphs, *SIAM Journal on Computing*, Vol. 34 2005, pp. 683-696.
13. H. Zhang and X. He, Canonical Ordering Trees and Their Applications in Graph Drawing, *Discrete and Computational Geometry*, Vol. 33 2005, pp. 321-344.
14. H. Zhang and X. He, Improved Visibility Representation of Plane Graphs, *Computational Geometry: Theory and Applications*, Vol. 30 2005, pp. 29-39.

▪ **Journal articles under review:**

1. S. Sadasivam and H. Zhang, On Segment Representation of Planar Graphs, submitted to *Journal of Graph Algorithms and Applications*. (**peer-reviewed, under review**)
2. X. He, J.-J. Wang and H. Zhang, Compact Visibility Representation of 4-Connected Plane Graphs, submitted to *Algorithmica*, under review.
3. X. He and H. Zhang, Schnyder greedy routing algorithm, invited submission to *Theoretical Computer Science*, to be submitted once the submission server is open.

▪ **Refereed Conference Papers:**

1. X. He and H. Zhang, Succinct Convex Greedy Drawing of 3-Connected Plane Graphs, to appear in: *Proceedings of the Twenty-Second Annual ACM-SIAM Symposium of Discrete Algorithms (SODA 2011)*.
2. X. He, J.-J. Wang and H. Zhang, Compact Visibility Representation of 4-Connected Plane Graphs, to appear in: *Proceedings of the Fourth Annual International Conference on Combinatorial Optimization and Applications, (COCOA' 2010)*, Lecture Notes in Computer Science.

3. S. Sadasivam and H. Zhang, Closed rectangle-of-influence drawings for irreducible triangulations, accepted to *7th Annual Conference on Theory and Applications of Models of Computation (TAMC 2010)*, Lecture Notes in Computer Science, Vol. 6108, pp. 409-418 2010.
4. X He and H. Zhang, Schnyder greedy routing algorithm, accepted to *7th Annual Conference on Theory and Applications of Models of Computation (TAMC 2010)*, Lecture Notes in Computer Science, Vol. 6108, pp. 271-283, 2010.
5. S. Sadasivam and H. Zhang, NP-Completeness of st-Orientations for Plane Graphs, in: *Proceedings of the Seventeenth International Symposium on Fundamentals of Computation Theory, (FCT' 2009)*, Lecture Notes in Computer Science, Vol. 5699, pp. 298-309.
6. H. Zhang and M. Vaidya, On Open Rectangle-of-influence Drawings of Planar Graphs, in: *Proceedings of the Third Annual International Conference on Combinatorial Optimization and Applications, (COCOA' 2009)*, Lecture Notes in Computer Science, Vol. 5573, pp. 123-134.
7. H. Zhang, On Minimizing One Dimension of Some Two-Dimensional Geometric Representations of Plane Graphs, in: *Proceedings of the Third International Frontiers of Algorithmics Workshop, (FAW' 2009)*, Lecture Notes in Computer Science, Vol. 5598, pp. 163-172.
8. S. Sadasivam and H. Zhang, On Segment Representation of Planar Graphs, in: *Proceedings of the Fourth International Conference on Algorithm Aspects in Information and Management, (AAIM' 2008)*, Lecture Notes in Computer Science, Vol. 5034, pp. 304-315.
9. L. Zou, L. Chen, H. Zhang, Y. Lu and Q. Luo, Summarization Graph Indexing: Beyond Frequent Structure-based Approach, accepted to: *Proceedings of the 13th International Conference on Database Systems for Advance Applications (DASFAA'08)*, Lecture Notes in Computer Science, Vol. 4947, pp. 141-155.
10. H. Zhang and S. Sadasivam, On Planar Polyline Drawings, accepted to: *Proceedings of the 15th International Symposium on Graph Drawing (GD'2007)*, Lecture Notes in Computer Science, Vol. 4875, pp. 213-218.
11. H. Zhang and X. He, Optimal st-Orientations for Plane Triangulations, in: *Proceedings of the Third International Conference on Algorithm Aspects in Information and Management, (AAIM' 2007)*, Lecture Notes in Computer Science, Vol. 4508, pp.296-305.
12. L. Zou, Y. Lu, H. Zhang, R. Hu and C. Zhou, Mining Frequent Induced Subtrees by Prefix-Tree-Projected Pattern Growth, in: *Proceedings of the International Workshop on XML, Web, and Internet Contents Technologies (XWICT' 2006)*, pp. 18-25
13. L. Zou, Y. Lu, H. Zhang and R. Hu, Mining Frequent Induced Subtree Patterns with Subtree-Constraint, in: *Proceedings of the 6th IEEE International conference on data mining –Workshops (ICDMW' 2006)*, pp. 3-7
14. L. Zou, Y. Lu, H. Zhang and R. Hu, PrefixTreeESpan: A Pattern Growth Algorithm for Mining Embedded Subtrees, in: *Proceedings of the 7th International conference on Web Information systems Engineering (Web Information Systems - WISE'2006)*, Lecture Notes in Computer Science, Vol. 4255, pp. 499-505.
15. X. He and H. Zhang, Nearly Optimal Visibility Representations of Plane Graphs, in: *Proceedings of the 33rd International Colloquium on Automata, Languages and Programming (ICALP'2006)*, Lecture Notes in Computer Science, Vol. 4051, pp. 407-418.
16. W. Li, H. Zhang and R. Shatnawi, A Graph-Based Representation of Object-Oriented Designs, in: *Proceedings of the 2006 International Conference on Software Engineering Research and Practice & Conference on Programming Languages and Compilers (SERP'2006)*, pp.198-204.
17. R. Shatnawi, W. Li and H. Zhang, Predicting Error Probability in the Eclipse Project, in *Proceedings of the 2006 International Conference on Software Engineering Research and Practice & Conference on Programming Languages and Compilers (SERP'2006)*, pp. 422-428.
18. H. Zhang and X. He, An Application of Well-orderly Trees in Graph Drawing, in: *Proceedings of the 13th International Symposium on Graph Drawing (GD'2005)*, Lecture Notes in Computer Science, Vol. 3843, pp. 458-467.
19. H. Zhang and X. He, New Theoretical Bounds of Visibility Representation of Plane Graphs, in: *Proceedings of the 12th International Symposium on Graph Drawing (GD'2004)*, Lecture Notes in Computer Science, Vol. 3383, pp. 425-430.
20. H. Zhang and X. He, On Visibility Representation of Plane Graphs, in: *Proceedings of the 21st International Symposium on Theoretical Aspects of Computer Science (STACS'2004)*, Lecture Notes in Computer Science, Vol. 2996, pp. 477-488.

21. H. Zhang and X. He, Compact Visibility Representation and Straight-Line Grid Embedding of Plane Graphs, in: *Proceedings of the 8th Workshop on Algorithms and Data Structures (WADS'2003), Lecture Notes in Computer Science*, Vol. 2748, pp.493-504.
 22. H. Zhang and X. He, On Even Triangulations of 2-Connected Embedded Graphs, in: *Proceedings of the 9th International Computing and Combinatorics Conference (COCOON'2003), Lecture Notes in Computer Science*, Vol. 2697, pp. 139-148.
 23. H. Zhang and X. He, A Simple Linear Time Algorithm for Finding Even Triangulations of 2-Connected Bipartite Plane Graphs, in: *Proceedings of the 10th European Symposium on Algorithms (ESA'2002), Lecture Notes in Computer Science*, Vol. 2461, pp. 902-913.
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STUDENT ADVISING:

▪ Major Advisor:

1. Mr. Milind Vaidya, Master of Science, Thesis title: Open Rectangle of Influence Drawings of Planar Graphs, defended in Oct. 2008.
2. Dr. Sadish Sadasivam, *st-Orientations in Planar Graph Drawings*, October 6th, 2009, Ph.D.
3. Ms. Swetha Govindaiah, M.S., in pipeline.
4. Mr. Aditya Pawar, M.S., in pipeline.
5. Mr. Omkar Kulkarni, Ph.D., in pipeline.

▪ Committee Members:

1. Ms. Irina V. Dodoukh, Master of Science, major advisor: Dr. Newman, defended in March 2008.
 2. Ms. Vani Jain, Master of Science, major advisor: Dr. Aygun, defended in May 2008.
 3. Mr. Mitesh Naik, Master of Science, major advisor: Dr. Aygun, defended in September 2008.
 4. Dr. Miranda Roden Bowie, Ph.D., major advisor: Dr. Slater, defended in September 2008.
 5. Ms. Harini Kandadi, Master of Science, major advisor: Dr. Aygun, defended in June 2009.
 6. Dr. Xiang Zhang, Ph.D., major advisor: Dr. Newman, defended in March, 2010.
 7. Mr. Matthew Couch, M.S., in pipeline. Advisor: Dr. Slater.
 8. Mr. Shailesh Khot, M.S., in pipeline. Advisor: Dr. Newman.
 9. Mr. Anish Bivalkar, M.S., in pipeline. Advisor: Dr. Zhu.
 10. Ms. Vineetha Bettaiah, M.S., in pipeline. Advisor: Dr. Aygun.
 11. Mr. Prashant Khanal, M.S., in pipeline. Advisor: Dr. Newman.
 12. Mr. Ajinkya Kulkarni, M.S., in pipeline. Advisor; Dr. Zhu.
 13. Ms. Yi Chen, Ph.D., in pipeline. Advisor; Dr. Aygun.
 14. Mr. Zhiqiang Wu, Ph.D., in pipeline. Advisor: Dr. Etzkorn.
 15. Ms. Sussan Einakian, Ph.D., in pipeline. Advisor: Dr. Newman.
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FUNDING HISTORY:

▪ External Funding:

1. AF:Small: K-Greedy drawing of graphs and their applications, PI, \$104,694, October 2010-September, 2013, NSF.
2. Graph Orientation Structures and Their Applications, PI, \$55,214, April 2008-March 2011, NSF.
3. Graph Orientation Structures and Their Applications (supplemental REU), PI, \$15,000 February 2009-March 2011, NSF
4. Finding Frequent Webpage Access Patterns, PI, \$6,500, Sept. 2006-June 2007, CREU from CRA.
5. Travel Grant, \$700, May 2008, Georgia Institute of Technology.

▪ Internal Funding:

1. Mining Algorithms for Graph Databases, PI, \$4,309, January 2007-December 2007, UAHuntsville research mini-grant.

2. Introduction to Bioinformatics Algorithms, PI, \$2,300, May 2007-August 2007, UAHuntsville instructional mini-grant.
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PROFESSIONAL SERVICES:

- **Reviewer for the following journals:**
 - Journal of Graph Algorithms and Applications
 - Computational Geometry: Theory and Applications
 - Parallel Processing Letters
 - Journal of Combinatorial Optimization
 - International Journal of Computers and Applications
 - Discrete Mathematics
 - Discrete Applied Mathematics
 - Algorithmica
 - Theoretical Computer Science
 - Information Processing Letters
 - Data and Knowledge Engineering
- **Reviewer for the following conferences:**
 - The 11th International Computing and Combinatorics Conference, COCOON 2005
 - The 12th International Computing and Combinatorics Conference, COCOON 2006
 - The 30th Annual Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2010).
 - The 17th International Colloquium on Structural Information and Communication Complexity, SIRROCO 2010.
- **Program Committee Member for the following conferences:**
 - The 13th International Computing and Combinatorics Conference, COCOON 2007
 - The 4th International Conference on Algorithmic Aspects in Information and Management (AAIM 2008)
 - The 5th International Conference on Algorithmic Aspects in Information and Management (AAIM 2009)
 - The 4th Annual International Conference on Combinatorial Optimization and Applications (COCOA 2010)
- **Service to the institution:**
 - Computer Science Department United Way representative, 2006 -2007
 - Coordinator for the Fall 2006 Preliminary exam, 2006
 - Member in the Computer and Network Services Users' Advisory Committee, 2006-2007
 - Observer for graduate school thesis defense, several times.
 - Committee member for master students, 2008

- Committee for algorithm course evaluation, 2008.
- Committee for evaluation of theory courses, 2008.
- Committee for graduate student scholarship, 2008.
- Undergraduate curriculum committee, 2008-2010.
- Faculty Senator, 2008-2010.
- ABET course evaluation committee, 2010.
- COMP exam and Preliminary exam coordinates, several times.