

# Shi Zhong

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## EDUCATION

Ph.D., August 2003     The University of Texas at Austin, Austin, Texas  
M.S.E.E., June 1997     Tsinghua University, Beijing, China  
B.S.E.E., June 1994     Huazhong University of Science and Technology, Wuhan, China

## RESEARCH INTEREST

Data Mining, Software Engineering, Patter Recognition, Signal and Image Processing, Machine Learning, Information Retrieval, Information Security

## EMPLOYMENT

Aug. 2003 – Pres.     Assistant Professor, Florida Atlantic University, Boca Raton, Florida  
May 2004 – Aug. 2004     Advisory Engineer, International Business Machines. Austin, Texas  
Apr. 2003 – July 2003     Intern, International Business Machines. Austin, Texas  
May 2000 – Aug. 2000     Summer Intern, Compaq Tandem Division, Austin, Texas  
Sept. 1999 – May 2000     Intern, Pavilion Technologies Inc., Austin, Texas  
June 1999 – Aug. 1999     Summer Intern, Honeywell Technology Center, Minneapolis, Minnesota

## TEACHING (at Florida Atlantic University)

- COT 6930 – Web Mining (Fall 2004 & 2005)
- CAP 6635 – Artificial Intelligence (Spring 2004 & 2005)
- CAP 4630 – Introduction to Artificial Intelligence (Fall 2004, Summer B 2005, Fall 2005)
- CDA 3201 – Introduction to Logic Design (Fall 2003)

## PUBLICATIONS

### REFEREED JOURNAL ARTICLES (PUBLISHED/ACCEPTED)

1. **Shi Zhong**. Semi-Supervised Model-based Document Clustering: A Comparative Study. Accepted to *Machine Learning*. 2005.
2. **Shi Zhong**, Taghi M. Khoshgoftaar, and Naeem Seliya. Evaluating Clustering Techniques for Unsupervised Network Intrusion Detection. To appear in *International Journal of Reliability, Quality, and Safety Engineering*. 2005.
3. **Shi Zhong**. Efficient Streaming Text Clustering. *Neural Networks*. vol. 18, no. 5/6. August 2005.

4. **Shi Zhong**. Semi-Supervised Sequence Classification with HMMs. *International Journal in Pattern Recognition and Artificial Intelligence*. vol. 19, no. 2, pp. 165-182. March 2005.
5. **Shi Zhong** and Joydeep Ghosh. Generative Model-based Clustering of Documents: A Comparative Study. *Knowledge and Information Systems: An International Journal*. vol. 8, pp. 374-384. 2005.
6. Taghi M. Khoshgoftaar, **Shi Zhong**, and Vedang Joshi. Noise Elimination with Ensemble-Classifer Filter for Software Quality Estimation. *Intelligent Data Analysis: An International Journal*. vol. 9, no. 1, pp. 3-27. 2005.
7. **Shi Zhong**, Taghi M. Khoshgoftaar, and Naeem Seliya. Analyzing Software Measurement Data with Clustering Techniques. *IEEE Intelligent Systems*. vol. 19, no. 2, pp. 20-27. March/April 2004.
8. **Shi Zhong** and Joydeep Ghosh. A Unified Framework for Model-based Clustering. *Journal of Machine Learning Research*. vol. 4, pp. 1001-1037. November 2003.

**(UNDER REVIEW)**

**Shi Zhong**, Taghi M. Khoshgoftaar, and Naeem Seliya. Expert-based Software Quality Estimation with Clustering Techniques. Submission under review. 2004

Naeem Seliya, Taghi M. Khoshgoftaar, and **Shi Zhong**. Active Learning with Neural Networks for Intrusion Detection. Submission under review. 2005.

**REFEREED CONFERENCE AND WORKSHOP PAPERS**

9. **Shi Zhong**, Taghi M. Khoshgoftaar, and Shyam V. Nath. A clustering approach to wireless network intrusion detection. Accepted to *Proc. IEEE 17th Int. Conf. Tools with Artificial Intelligence (ICTAI-2005)*. November, 2005.
10. Naeem Seliya, Taghi M. Khoshgoftaar, and **Shi Zhong**. Analyzing Software Quality with Limited Fault-Proneness Defect Data, In *9th IEEE Int. Symp. High Assurance Systems Engineering (HASE'05)*, Heidelberg, Germany, October 10-13, 2005.
11. **Shi Zhong**. Efficient Online Spherical K-means Clustering. In *Proc. IEEE Int. Joint Conf. Neural Networks (IJCNN 2005)*, pp. 3180-3185. July 31–August 4, 2005.
12. Naeem Seliya, Taghi M. Khoshgoftaar, and **Shi Zhong**. Semi-supervised Learning for Software Quality Estimation. In *Proc. IEEE 16th Int. Conf. Tools with Artificial Intelligence (ICTAI-2004)*, pp. 183-190. November, 2004.
13. David DeMaris, Dan Maynard, Bette B. Reuter, and **Shi Zhong**. An Information Retrieval System for the Analysis of Systematic Defect in VLSI. In *Proc. IEEE 16th Int. Conf. Tools with Artificial Intelligence (ICTAI-2004)*, pp. 216-223. November, 2004.
14. **Shi Zhong**, Taghi M. Khoshgoftaar, and Naeem Seliya. Evaluating Clustering Techniques for Network Intrusion Detection. In *10th ISSAT Int. Conf. on Reliability and Quality Design*, pp. 149-155. Las Vegas, Nevada, USA. August 2004.
15. **Shi Zhong**. Semi-Supervised Sequence Classification with HMMs. *17th International FLAIRS Conference (FLAIRS 2004)*, pp. 568-573. Miami Beach, FL. May 2004.
16. **Shi Zhong**. Semi-Supervised Model-based Clustering: A Comparative Study. *SDM'04 Workshop on Clustering High Dimensional Data and Its Applications*, pp. 74-85. Orlando, FL. April 2004.
17. **Shi Zhong**, Taghi M. Khoshgoftaar, and Naeem Seliya. Unsupervised Learning for Expert-based Software Quality Estimation. Accepted to *8th IEEE International Symposium on High Assurance Systems Engineering (HASE'04)*, pp. 149-155. Tempa, FL. March 2004.

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18. **Shi Zhong** and Joydeep Ghosh. Model-based Clustering with Soft Balancing. In *Proceedings of 3rd IEEE International Conference on Data Mining*, pp. 459-466, Melbourne, FL. November 2003.
19. **Shi Zhong** and Joydeep Ghosh. A Comparative Study of Generative Models for Document Clustering. In *SDM'03 Workshop on Clustering High Dimensional Data and Its Applications*. San Francisco, CA. May 2003.
20. **Shi Zhong** and Joydeep Ghosh. Scalable, Balanced Model-based Clustering. In *Proceedings of 3rd SIAM International Conference on Data Mining*, pp. 71-82, San Francisco, CA. May 2003.
21. **Shi Zhong** and Joydeep Ghosh. A Unified Framework for Model-based Clustering. In *Intelligent Engineering Systems Through Artificial Neural Networks (ANNIE)*, St. Louis, MO. November 2002.
22. **Shi Zhong** and Joydeep Ghosh. HMMs and Coupled HMMs for Multi-channel EEG Classification. In *Proceedings of IEEE International Joint Conference on Neural Networks*, vol. 2, pp. 1154-1159, Honolulu, Hawaii. May 2002.
23. Chen He and **Shi Zhong**. System-level Design and Software-based Implementation of MPEG-4 Video Encoder. In *The Asilomar Conference on Signals, Systems and Computers*, vol. 2, pp. 1058-1062, Pacific Grove, CA. November 2000.
24. **Shi Zhong** and Joydeep Ghosh. Decision Boundary Focused Neural Network Classifier. In *Intelligent Engineering Systems Through Artificial Neural Networks (ANNIE)*. ASME Press, St. Louis, MO. November 2000.
25. **Shi Zhong** and Vladimir Cherkassky. Image Denoising Using Wavelet Thresholding and Model Selection. In *Proceedings of IEEE International Conference on Image processing*, vol. 3, pp. 263-265, Vancouver, BC, Canada. November 2000.
26. **Shi Zhong** and Vladimir Cherkassky. Factors Controlling Generalization Ability of MLP Networks. In *Proceedings of IEEE International Joint Conference on Neural Networks*, vol. 1, pp. 625-630, Washington DC. July 1999.

## TECHNICAL REPORTS

**Shi Zhong**. Semi-supervised Model-based Document Clustering: A Comparative Study. Department of Computer Science and Engineering, Florida Atlantic University. January 2004.

**Shi Zhong** and Joydeep Ghosh. A Unified Framework for Model-based Clustering and its Application to Clustering Sequences. Department of Electrical and Computer Engineering, The University of Texas at Austin. May 2002.

**Shi Zhong** and Joydeep Ghosh. A New Formulation of Coupled Hidden Markov Models. Department of Electrical and Computer Engineering, The University of Texas at Austin. June 2001.

**Shi Zhong** and Vladimir Cherkassky. Image Denoising Using Wavelet Thresholding and Statistical Learning Theory. Department of Electrical and Computer Engineering. February, 2000.

## HONORS AND AWARDS

- FAU Faculty Travel Award, 2005
- IBM Faculty Award, 2004
- FAU Faculty Travel Award, 2003
- IEEE Student Travel Award, 1999

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### PROFESSIONAL ACTIVITIES

Member of The IEEE and IEEE Computer Society

Program Committee member, *2005 IEEE International Conference on Information Reuse and Integration*, Las Vegas, NV. August 15-17, 2005

Program Committee member, *2005 SIAM International Conference on Data Mining Workshop on Clustering High Dimensional Data and its Applications*, Newport Beach, California, April 21-23, 2004

Program Committee member, *11th International Conference on Neural Information Processing (ICONIP 2004)*, Science City, Calcutta, India. November 22-25, 2004.

Program Committee member (and Publication Chair), *The 16th IEEE International Conference on Tools with Artificial Intelligence*, Boca Raton, Florida, November 15-17, 2004

Program Committee member, *2004 SIAM International Conference on Data Mining Workshop on Clustering High Dimensional Data and its Applications*, Orlando, Florida, April 22-24, 2004

Program Committee member, *The 3rd IEEE International Conference on Data Mining Workshop on Clustering Large Data Sets*, Melbourne, Florida, November 19-22, 2003

Reviewed articles for the following journals: *Knowledge and Information Systems: An International Journal*, *Journal of Machine Learning Research*, *Neural Networks*, *Empirical Software Engineering Journal*, *IEEE Transactions on Knowledge and Data Engineering*, *IEEE Transactions on Neural Networks*, *IEEE Transactions on Fuzzy Systems*, *IEEE Transactions on System, Man, and Cybernetics*, and *IEEE Transactions on Image Processing*.

Reviewed numerous conference papers for: *IJCNN*, *ICONIP*, *ICPR*, *ANNIE*, *IEEE ICDM*, *SIAM DM*, *ICTAI*, *INFOCOM*.

### UNIVERSITY SERVICES

Member of TA/GA Committee (CSE Dept., Florida Atlantic Univ.), 08/2003 – Present

Member of many PhD Committees and MS committees

Supervised one MS student to completion