

CURRICULUM VITAE

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Education/Training

University of Wisconsin - Madison	Statistics	Ph.D. 2002. Adviser: Grace Wahba
Vanderbilt University	Mathematics	Graduate study, 1996-1997.
Peking University	Mathematics	B.Sc. 1996

Positions and Employment

2002-present	Assistant Professor	Department of Statistics, North Carolina State University
2003-2004	Faculty Fellow	Statistical and Applied Mathematical Sciences Institute, NC.
1998-2002	Research Assistant	Department of Statistics, University of Wisconsin-Madison
1997-1998	Teaching Assistant	Department of Statistics, University of Wisconsin-Madison
1996-1997	Teaching Assistant	Department of Mathematics, Vanderbilt University

Other Experience and Professional Memberships

2001-present	Member, American Statistical Association (ASA)
2001-present	Lifetime Member, Institute of Mathematical Statistics (IMS)
2002-present	Member, International Biometric Society, ENAR
1997-2001	Member, American Mathematical Society (AMS)

Honors and Awards

2007	National Science Foundation Faculty Early Career Development (CAREER) Award
2003	Faculty Research and Professional Development Award, North Carolina State University
2003	Institute of Mathematical Statistics (IMS) Laha Travel Award
2000-2001	Vilas Professional Development Fellowship, University of Wisconsin-Madison
1996-1997	University Fellowship, Vanderbilt University
1994-1995	Guanghua Award for Outstanding Undergraduate, Peking University

Refereed Journal Publications

(available from <http://www4.stat.ncsu.edu/~hzhang/publications>)

1. Zhang, H. H. and Lu, W. (2007) Adaptive-LASSO for Cox's proportional hazard model. *Biometrika*, **94**, 691-703.
2. Lu, W. and Zhang, H. H. (2007) Variable selection for linear transformation models via penalized marginal likelihood. *Statistics in Medicine*, **26**, 3771-3781.
3. Leng, C. and Zhang, H. H. (2007) Nonparametric model selection in hazard regression. *Journal of Nonparametric Statistics*, **18**, 417-429.
4. Liu, Y., Zhang, H. H., Park, C. and Ahn, J. (2007) Support vector machines with adaptive L_q penalty. *Computational Statistics and Data Analysis*. In press.
5. Zhang, H. H. (2006) Variable selection for Support vector machines via smoothing spline ANOVA. *Statistica Sinica*, **16**, 659-674.
6. Lin, Y. and Zhang, H. H. (2006) Component selection and smoothing in smoothing spline analysis of variance models. *Annals of Statistics*, **34**, 2272-2297.
7. Zhang, H. H., Ahn, J., Lin, X., and Park, C. (2006) Gene selection using support vector machines With Nonconvex Penalty. *Bioinformatics*, **22**, 88-95.
8. Liu, Y., Zhang, H. H., Park, C. and Ahn, J. (2006) The L_q support vector machines. *Proceedings of Joint Summer Research Conference on Machine and Statistical Learning: Prediction and Discovery*. In press.
9. Zhang, H. H. and Lin, Y. (2006) Component selection and smoothing for nonparametric regression in exponential families. *Statistica Sinica*, **16**, 1021-1042.
10. Tang, Y. and Zhang, H. H. (2005) Multiclass proximal support vector machines. *Journal of Computational and Graphical Statistics*, **15**, 339-355.
11. Zhang, H. H., Wahba, G., Lin, Y., Voelker, M., Ferris, Klein, R. and Klein, B. (2004) Variable selection and model building via likelihood basis pursuit. *Journal of American Statistical Association* **99**, 659-672.
12. Ferris, M., Voelker, M. and Zhang, H. H. (2004) Model building with likelihood basis pursuit. *Journal of Optimization Methods and Software* **19**, 1-18.
13. Lin, Y., Wahba, G., Zhang, H. H., and Lee, Y. (2002) Statistical properties and adaptive tuning of support vector machines. *Machine Learning* **48**, 115-136.
14. Wahba, G., Lin, Y., Lee, Y. and Zhang, H. H. (2003) Optimal properties and adaptive tuning of standard and nonstandard support vector machines. *Nonlinear Estimation and Classification*, Springer, 125-143.
15. Wahba, G., Lin, Y. and Zhang, H. H. (2000) Generalized approximate cross validation for support vector machines, or, another way to look at margin-like quantities. *Advances in Large Margin Classifiers*, MIT Press, 297-309.

Technical Reports/Submitted Papers

1. Zhang, H. H., Liu, Y., Wu, Y. and Zhu, J. (2007) Variable selection for multcategory SVM via sup-norm regularization. Institute of Statistics Mimeo Series 2596, NCSU.
2. Zhang, H. H., Genton, M. and Liu, P. (2006) Compactly supported radial basis functional Kernels. Institute of Statistics Mimeo Series 2570, NCSU.
3. Lu, W. and Zhang, H. H. (2006) Variable selection via penalized likelihood with adaptive penalty. Institute of Statistics Mimeo Series 2594, NCSU.
4. Wahba, G., Lin, Y., Lee, Y. and Zhang, H. H. (2001) On the Relation between the GACV and Joachims' $\xi\alpha$ method for tuning Support Vector Machines, with extension to the nonstandard case. Technical Report 1039, Department of Statistics, University of Wisconsin at Madison.

Conference Proceedings

1. Zhang, H. H. (2007) Model Selection for Support Vector Machines. *Proceedings of the 56th Session of International Statistical Institute.*
2. Zhang, H. H. (2004) Variable Selection via COSSO in Nonparametric Regression Models. *Mathematisches Forschungsinstitut Oberwolfach Report for New Inference Concepts for Analyzing Complex Data*, Volume 1, Issue 4.
3. Zhang, H. H., Wahba, G., Lin, Y., Voelker, M., Ferris, M., Klein, R. and Klein, B. (2001) Variable Selection via Basis Pursuit for Non-Gaussian Data. *Proceedings of the Joint Statistical Meetings.*

Research Support

1. National Science Foundation (NSF) CAREER Award
Grant number: DMS-0645293, \$400,000. 07/01/07 - 06/30/12
Title: "Nonparametric Models Building, Estimation, and Selection with Applications to High Dimensional Data Mining."
Role: PI
2. National Science Foundation (NSF) Standard Grant
Grant number: DMS-0405913, \$124,396. 07/01/04 - 06/30/07
Title: "Nonparametric Variable Selection in Smoothing Spline ANOVA Models."
Role: PI
3. NCSU Faculty Research and Professional Development Award Grant
Grant number: 350609, \$4,000. 03/01/03 - 02/29/04
Title: "Nonparametric Variable Selection and Model Building."
Role: PI
4. National Institute of Health/National Cancer Institute (NIH/NCI)
Grant number: R01 CA085848-08, \$800,000. 05/01/07- 04/30/11
Title: "Flexible Statistical Methods for Biomedical Data."
Role: Co-investigator (20%)

Travel Support

1. NSF travel support, 2006 AMS/IMS/SIAM Joint Summer Research Conferences, June 2006.
2. NIH travel support, 2004 ENAR conference, Junior Faculty Workshop, March 2004.
3. NSF travel support, 2003 Joint Statistical Meetings, August 2003.
4. NSF travel support, 2003 AMS/IMS/SIAM Joint Summer Research Conferences, June 2003.
5. NSF travel support, 2003 IMS mini-meeting on Functional Data Analysis, January 2003.

Teaching Activities

2002 Fall	STAT 372: Introduction to statistical inference and regression (3 credits)
2003 Spring	STAT 372: Introduction to statistical inference and regression (3 credits)
2004 Spring	STAT 372: Introduction to statistical inference and regression (3 credits)
2004 Fall	STAT 790D: Introduction to smoothing methods and nonparametric regression (3 credits)
2005 Spring	STAT 522 & 522L: Statistical theory II and lab (4 credits)
2005 Fall	STAT 790C: Introduction to data mining and machine learning (3 credits)
2006 Spring	STAT 522 & 522L: Statistical theory II and lab (4 credits)
2006 Fall	STAT 521 & 521L: Statistical theory I and lab (4 credits)
2007 Spring	STAT 522 & 522L: Statistical theory II and lab (4 credits)
2007 Spring	STAT 790A: Introduction to smoothing methods and nonparametric regression (3 credits)
2007 Fall	STAT 790C: Introduction to data mining and machine learning (3 credits)

Student Advising

- Ph.D. Chair

Lan Lan	May 2006 (co-advisor Daowen Zhang)
Xiao Ni	May 2007 (co-advisor Daowen Zhang)
Hongmei Yang	June 2007 (co-advisor Daowen Zhang)
Eren Demirhan	expect to complete in 2008
Song Liu	expect to complete in 2008
Lingkang Huang	expect to complete in 2008 (co-advisor Zhaobang Zeng)
Justin Shows	expect to complete in 2009 (co-advisor Wenbin Lu)
Wookyeon Hwang	expect to complete in 2009 (co-advisor Subhashis Ghosal)

- **Master Chair**

Sangjin Park	May 2005
Elizabeth Nelson	May 2006
Karen Daughy	Sep 2006
John Schweitzer	March 2007

- **Ph.D. Committee**

Brian Howard	Statistics	2006-present
Rebecca Hortz	Statistics	2006-present
Ahn Mihye	Statistics	2005-present
Jungsoon Choi	Statistics	2006-present
Darryl Cooney	Statistics	2006-present
Li Li	Bioinformatics	2004-present
Xiaohua Gong	Bioinformatics	2005-present
Sihui Zhao	Bioinformatics	2005-present
Lingkang Huang	Bioinformatics	2005-present
Liu Jiajun	Statistics	August 2007
Liu Xiaoni	Statistics	August 2006
Xiaoming Lu	Statistics	May 2007
Sheng-Mao Chang	Statistics	May 2007
Kyung, Minjung	Statistics	August 2006
Xi Chen	Bioinformatics	July 2006
Yun Chen	Statistics	May 2006
Liansheng Zhu	Statistics	August 2006
Karen Chiswell	Statistics	August 2006
Lishan Huang	Statistics	June 2006
Jeongyoun Ahn	Statistics	May 2006 (UNC-Chapel Hill)
Kirsten Doehler	Statistics	May 2006
Changkun Kang	Statistics	Dec. 2005
Jiang Lin	Statistics	May 2004
Yujun Wu	Statistics	May 2004
Jing Wang	Statistics	May 2004
Xi Chen	Bioinformatics	July 2006
Sheng Feng	Bioinformatics	May 2004
Fusheng Li	Nuclear Engineering	Dec 2007
Nathan Gibson	Mechanical Engineering	May 2004

- **Master Committee**

Faison Paris	Statistics	May 2006
Cai Yiyun	Statistics	Dec. 2005
Aaron Hale	Statistics	Dec. 2004
Betsy Enstrom	Statistics	Dec. 2004
Atina Brook	Statistics	May 2003
Meng Wang	Operation Research	May 2003

Department/University Services

2002-present	Graduate Faculty Member
2007-present	University Task Force Committee on Faculty Diversity, NC State University
Summer 2007	Ph.D. Prelim Exam Committee, Dept. of Statistics, NC State University
2006-2007	Faculty Search Committee, Dept. of Statistics, NC State University
Summer 2006	Ph.D. Prelim Exam Committee, Dept. of Statistics, NC State University
Aug 2005	PhD Qualifying Exam Committee, Dept. of Statistics, NC State University
2004-2005	Faculty Search Committee, Dept. of Statistics, NC State University
2004-2007	Seminar Organizing Committee, Dept. of Statistics, NC State University
Aug 2004	Masters Exam Committee, Dept. of Statistics, NC State University
2003-2004	College Child Care Task Force Committee, PAMS, NC State University
2002-2003	Course and Curriculum Committee, Dept. of Statistics, NC State University
2000-2001	Student Seminar Committee, Dept. of Statistics, UW-Madison
1999-2000	TA Awards and Assignments Committee, Dept. of Statistics, UW-Madison
1998-1999	TA Policies and Review Committee, Dept. of Statistics, UW-Madison
1997-1998	Social Activities Committee, Dept. of Statistics, UW-Madison

Professional Activities

- Regional Advisory Board, IBS/Eastern North American Region, 2004-2007
- Program Committee, 11th International Conferences on Artificial Intelligence and Statistics (AISTAT), 2007.
- Local Research Group on Data Mining, Group Leader, 2005-2006.
- Session Organizer and Chair, 2007 ICSA Applied Statistics Symposium
- Session Organizer and Chair, 2007 Nonparametric Statistics Conference
- Session Organizer and Chair, 2006 ENAR Spring Meetings.
- Session Chair, 2004 ENAR Spring Meeting,
- Session Chair, 2004 Joint Statistical Meetings, 2006 Joint Statistical Meetings

- Session Chair, 2003 Statistical Society of Canada Joint Meetings.

Referee Service

- Proposal Reviewer, National Security Agency (NSA)
- Book Chapter Review, IOP Journal Archive
- Conference Reviewer, Neural Information Processing Systems Conference (NIPS)
- Conference Reviewer, AMS/IMS/SIAM Joint Summer Research Conferences
- Journal review service

Reviewer	Annals of Statistics (3)
Reviewer	Bioinformatics (3)
Reviewer	Biometrics (4)
Reviewer	Biometrika (3)
Reviewer	Computational Statistics and Data Analysis (2)
Reviewer	Journal of American Statistical Association (3)
Reviewer	Journal of Computational and Graphical Statistics (1)
Reviewer	Journal of Machine Learning Research (2)
Reviewer	Journal of Multivariate Analysis (1)
Reviewer	Journal of Statistical and Planning Inference (2)
Reviewer	Journal of Royal Statistical Society, Series B (3)
Reviewer	Statistics Sinica (8)
Reviewer	IEEE Transactions on Information Theory (1)
Reviewer	ACM Transactions on Knowledge Discovery from Data (1)

Invited Talks

- “Nonparametric Variable Selection with COSSO and Its Recent Development,” Invited Talk at Southern Regional Council on Statistics (SRCOS), Richmond, VA, June 2007.
- “Variable Selection in Linear Models via Shrinkage Methods”, Department Colloquium, Department of Statistics, North Carolina State University, Raleigh, NC, Dec., 2006.
- “Soft-thresholding Penalties for Variable Selection”, Bayesian Group Seminar, Department of Statistics, NCSU, Raleigh, NC, Dec., 2006.
- “Variable Selection via Penalized Likelihood Methods,” Department Colloquium, Department of Statistics, University of Georgia, Athens, GA, Nov., 2006.
- “Sparse Learning for Support Vector Machines”, Invited Talk, Joint Statistical Meetings, Seattle, August, 2006.
- “Support Vector Machine Classification with Informative Features”, Invited Talk, AMS/IMS/SIAM Joint Summer Research Conferences – Machine Learning, Statistics and Discovery, June 2006, Snowbird, Utah.

- “Support Vector Machine Classification with Informative Features”, Invited Talk, INFORMS International Conference, June 2006, Hong Kong, China.
- “Variable Selection for Support Vector Machines via COSSO,” ISI Invited Talk, Joint Statistical Meetings, Minneapolis, MN, August, 2005.
- “Variable Selection for SVM via Spline ANOVA,” Invited Talk, The Joint Meeting of CSPS/IMS, Beijing, China, July 2005.
- “Multiclass proximal support vector machines,” Department Colloquium, Duke Clinical Research Institute (DCRI), Duke University, Durham, NC, May, 2005.
- “Variable Selection via COSSO in Nonparametric Regression Models,” Mathematisches Forschungsinstitut Oberwolfach workshop, Germany, Nov., 2004
- “Component Selection and Smoothing Operator in Nonparametric Models,” Department Colloquium, Department of Statistics, Pennsylvania State University, College Park, PA, Nov., 2004.
- “Component Selection and Smoothing Operator in SS-ANOVA,” Department Colloquium, Department of Biostatistics, University of North Carolina at Chapel Hill, Raleigh, NC, Sep., 2004.
- “Variable Selection in Nonparametric Statistical Models,” IMS Invited Talk, Joint Statistical Meetings, Toronto, Canada, August, 2004.
- “Variable Selection in Nonparametric Statistical Models,” Invited Talk, International Federation of Classification Societies meeting, Chicago, IL, July 2004.
- “Unified Multi-class Proximal Support Vector Machines.” Invited Talk, Interface: computational biology and bioinformatics, 36th Symposium on the interface, Baltimore, MA. May 2004.
- “Component selection and smoothing in smoothing spline analysis of variance models.” Contributed Talk, IBS-ENAR, Pittsburgh, PA. March 2004.
- “Compactly Supported RBF Kernels.” Statistical and Applied Mathematical Sciences Institute (SAMSI), Data Mining and Machine Learning Intermediate Workshop, Research Triangle Park, NC. Feb 2004.
- “Compactly Supported Kernels”, Poster, Statistical and Applied Mathematical Sciences Institute (SAMSI), Data Mining and Machine Learning workshop, Sep 8, 2003, Research Triangle Park, NC.
- “Statistical Machine Learning”, Department Colloquium, Department of Statistics, North Carolina State University, Raleigh, NC, August 19, 2003.
- “Variable Selection in Spline ANOVA Models”, Discussant for Wald Lecture (II) given by Professor Grace Wahba, Joint Statistical Meetings, Aug 6, 2003, San Francisco, CA.
- “Variable Selection for Support Vector Machines”, IMS Invited Talk, Joint Statistical Meetings, Aug 4, 2003, San Francisco, CA.

- “Nonparametric Regression Variable Selection – Component Selection and Smoothing Operator (COSSO)”, Invited Talk, Statistical and Applied Mathematical Sciences Institute (SAMSI), Stochastic Computation Final Workshop, June 27, Research Triangle Park, NC.
- “Variable Selection for Support Vector Machines via Basis Pursuit”, Invited Talk, AMS/IMS/SIAM Joint Summer Research Conferences – Machine Learning, Statistics and Discovery, June 26, 2003, Snowbird, Utah.
- “Nonparametric Variable Selection and Model Building via Likelihood Basis Pursuit”, Poster, IMS mini-meeting on Functional Data Analysis, January 9-10, 2003, Gainesville, FL.
- “Nonparametric Variable Selection via Likelihood Basis Pursuit”, Invited Colloquium, Institute of Statistics and Decision Sciences, Duke University, Durham, September 6, 2002.
- “Nonparametric Variable Selection via Likelihood Basis Pursuit with Applications in Medical Studies”, Contributed Talk, ENAR, Nonparametric Section, Arlington, VA, March 2002.
- “Variable Selection via Basis Pursuit for non-Gaussian data”, Department Colloquium, Department of Statistics, University of Wisconsin-Madison, Madison, November 7, 2001.
- “Variable Selection via Basis Pursuit for non-Gaussian data”, Contributed Talk, Joint Statistical Meetings, Atlanta, August 2001.

References

- Available upon request