

HAIPENG XING

School Address

Math Tower 1-102
Department of Applied Mathematics & Statistics
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EDUCATION

B.S. in Mathematics, Nankai University, P.R. China	1994–1998
M.Phil. in Mathematics, Hong Kong University of Science & Technology, Hong Kong	1998–2000
Ph.D. candidate in Mathematics, University of California, Davis	2000–2001
Ph.D. in Statistics, M.S. in Financial Mathematics, Stanford University	2001–2005

PROFESSIONAL EXPERIENCE

Lecturer, Department of Statistics, Columbia University	07/2005–06/2006
Assistant Professor, Department of Statistics, Columbia University	07/2006–12/2007
Assistant Professor, Department of Applied Mathematics and Statistics, State University of New York at Stony Brook	01/2008–present

SHORT-TERM PROFESSIONAL EXPERIENCE

Associate Analyst, Global Modeling & Analytical Group, Credit Suisse First Boston	06/2004–08/2004
Visiting Lecturer, Department of Statistics, Stanford University	06/2006–08/2006
Visiting Assistant Professor, Department of Statistics, Stanford University	06/2007–08/2007
Visiting Assistant Professor, Department of Statistics and Applied Probability, National University of Singapore	06/2008
Visiting Assistant Professor, School of Mathematical Sciences, Tsinghua University, China	07/2010, 05/2011
Visiting Assistant Professor, School of Management, Fudan University, China	05/2011
Visiting Research Fellow, Development Economics, the World Bank	05/2010–06/2010
Consultant in the Office of Chief Economist and Senior Vice President, the World Bank	05/2010–06/2011

PROFESSIONAL ACTIVITY

Associate Editor, Journal of Agricultural, Biological and Environmental Statistics	09/2010–present
Associate Editor, Journal of Statistical Planning and Inference	01/2012–present

BOOKS

1. Lai, T.L. and Xing, H. (2008). *Statistical Models and Methods for Financial Markets*. Springer-Verlag, New York. (The Chinese translation is published by China High Education Press in 2009.)

2. Lai, T.L. and Xing, H. (To be published in 2012). *Risk Management and Surveillance: Financial Models and Statistical Methods*. Chapman & Hall/CRC, New York.

BOOK CHAPTERS

1. Lai, T.L. and Xing, H. (2010). Time series modeling and forecasting of volatilities of asset returns. *Handbook of Quantitative Finance and Risk Management* (C.F. Lee, A.C. Lee and J. Lee, eds.). 1417-1426. Springer-Verlag, New York.

PEER REVIEWED PAPERS

1. Lai, T.L., Liu, H. and Xing, H. (2005). Autoregressive models with piecewise constant volatility and regression parameters. *Statistica Sinica*, Vol. 15, 279-301,
2. Lai, T.L. and Xing, H. (2006). Structural change as an alternative to long memory in financial time series. In *Advances in Econometrics* (H. Carter and T. Fomby, eds.), Vol 20 (Econometric Analysis of Economic and Financial Time Series - Part B), 205-224. Elsevier, Amsterdam.
3. Lai, T.L. and Xing, H. (2007). Nonparametric functionals of spectral distribution and their applications to time series analysis. *Journal of Statistical Planning and Inference*, Vol. 137, 1066-1075.
4. Lai, T.L., Xing, H. and Zhang, N. (2008). Stochastic segmentation models for array-based comparative genomic hybridization data analysis. *Biostatistics*, Vol. 9, 290-307.
5. Lai, T.L. and Xing, H. (2008). A hidden Markov filtering approach to multiple change-point models. *Proceedings of the 47th Conference on Decision and Control*, 1914-1919.
6. Lai, T.L. and Xing, H. (2009). Discussion on "Optimal sequential surveillance for finance, public health and other areas" by Marianne Frisén. *Sequential Analysis*, Vol. 28, 360-364.
7. Lai, T.L. and Xing, H. (2009). A Bayesian approach to sequential surveillance in exponential families. *Communications in Statistics, Theory and Methods*, Vol 38, 2958-2968, 2009. (With T.L. Lai).
8. Lai, T.L. and Xing, H. (2010). Sequential change-point detection when the pre- and post-change parameters are unknown. *Sequential Analysis*, Vol 29, 162-175.
9. Lai, T.L. and Xing, H. (2011). A simple Bayesian approach to multiple change-points. *Statistica Sinica*, Vol 21, 539-569.
10. Lai, T.L., Xing, H. and Chen, Z. (2011). Mean-variance portfolio optimization when means and covariances of asset returns are unknown. *The Annals of Applied Statistics*. Vol 5, 798-823.
11. Chen, N., Xing, H. and Zhang, N. (2011). Estimation of parent specific DNA copy number in tumors using high-density genotyping arrays. *PLoS Computational Biology*, Vol 7, 1-15.
12. Xing, H., Sun, N. and Chen, Y. (2012). Credit rating dynamics in the presence of unknown structural breaks. *Journal of Banking and Finance*. Vol 36, 78-89.
13. Xing, H. and Sun, N. (2011). A Markov switching model with stochastic regimes for economic cycles. Submitted to *Journal of Econometrics*.
14. Xing, H., Yu, Y. and Lim, T.W. (2011). European option pricing under jump diffusion with proportional transaction costs. Submitted to *Quantitative Finance*.
15. Xing, H., Mo, Y., Liao, W. and Zhang, M. (2011). A novel Bayesian change-point model for genome-wide analysis of diverse ChIP-seq data types. Submitted to *Proceedings of the National Academy of Sciences*.
16. Xing, H. and Ying, Z. (2011). Semiparametric regression analysis of longitudinal data with piecewise constant regression coefficients. Resubmitted to *Journal of American Statistical Association*.
17. Xing, H., Sun, N. and Ying, Z. (2011). A semiparametric change-point model for recurrent event times. Submitted to *Biometrika*.

18. Xing, H. (2011). A hidden Markov modeling approach to multiple structural breaks in biology and economic research. Submitted to *Journal of Visualized Experiment* by invitation.

PREPRINT

1. Lai, T.L., Pong, C.K., and Xing, H. (2011). Functional time series models of yield curves and applications to forecasting interest rate derivative prices.

PAST AND CURRENT GRANTS

- SUNY Stony Brook, Multidisciplinary research initiation grant \$25,000.00
Title: Statistical Analysis and Modeling of Heterogeneous Climate Data to Advance Severe Weather Forecasting and Abrupt Climate Change Prediction.
PI: **Haipeng Xing**. Co-PIs: Minghua Zhang, Wei Zhu. 07/2008-06/2009.
- National Science Foundation, BCS-0940822 \$602,058.00
Title: CDI-Type II: Collaborative Proposal: The political and security impacts of abrupt climate change on modern populations: An integrated computational model.
PI: Oleg Smirnov. Co-PIs: **Haipeng Xing** (25% effort), Minghua Zhang. 01/2010-12/2013.
- National Science Foundation, DMS-0906593 \$110,000.00
Title: Estimation, Detection and Control of Multiple Change-point Stochastic Systems with Applications to Economics, Engineering, Biology and Climate Science.
PI: **Haipeng Xing**. 09/2009-08/2012.

INVITED TALKS

1. Volatility jumps and change-point autoregressive models. The Stanford Statistics Industry Affiliates, Stanford University, April 2005.
2. Volatility jumps and change-point autoregressive models. ICSA (International Chinese Statistical Association) 2005 Applied Statistics Symposium. Washington D.C., June 2005.
3. Stochastic change-point ARX-GARCH models. The Greater New York Metropolitan Area Econometrics Colloquium. Yale University, December 2, 2006;
4. A hidden Markov modeling approach to multiple change points. Department of Statistics, Columbia University. January 22, 2007.
5. Stochastic segmentation models for array-based comparative genomic hybridization data analysis. Department of Biostatistics, Columbia University. January 30, 2007
6. Stochastic change-point ARX-GARCH models and their applications to econometric time series. Department of Economics, Columbia University, February 22, 2007.
7. A hidden Markov modeling approach to multiple change points. Department of Statistics, Stanford University. July 17, 2007.
8. Stochastic change-point ARX-GARCH models and their applications to econometric time series. Department of Statistics, Harvard University. October 22, 2007.
9. Stochastic regime switching models of business cycles. The Greater New York Metropolitan Area Econometrics Colloquium. University of Pennsylvania. December 1, 2007.
10. Mean-variance portfolio optimization when means and covariances are unknown. The Laurence Baxter Memorial Lectures. New York State University at Stony Brook. May 9, 2008.
11. Mean-variance portfolio optimization when means and covariances are unknown. Department of Applied Probability and Statistics, National University of Singapore. June 11, 2008.

12. Mean-variance portfolio optimization when means and covariances are unknown. Institute of Applied Mathematics, the Chinese Academy of Sciences. June 19, 2008.
13. A hidden Markov modeling approach to multiple change points. Academy of Mathematics and Systems Science, the Chinese Academy of Sciences. June 23, 2008.
14. Mean-variance portfolio optimization when means and covariances are unknown. Department of Statistics, Stanford University. July 22, 2008.
15. A hidden Markov modeling approach to multiple change points. HP Laboratories, Hewlett-Packard Company, July 23, 2008.
16. Stochastic segmentation models for array-CGH data analysis. Cold Spring Harbor Laboratory, April 1, 2009.
17. A hidden Markov filtering approach to multiple change-point models. ICSA 2009 Applied Statistics Symposium. San Francisco, June 24, 2009.
18. Mean-variance portfolio optimization when means and covariances are unknown. The 1st IMS-APRM (Institute of Mathematical Statistics - Asia Pacific Rim Meeting). Seoul, Korea, June 28, 2009.
19. A hidden Markov framework for multiple change-point problems. Neural Information Processing Systems Foundation. Vancouver, B.C., Canada, December 12, 2009.
20. Mean-variance portfolio optimization when means and covariances are unknown. Quantitative & Computational Finance Program, School of Industrial and Systems Engineering, Georgia Institute of Technology. February 26, 2010.
21. Statistical analysis in market risk management. Stanford-Fudan-SJTU Conference on Financial Econometrics. Shanghai Jiaotong University, China. May 15, 2011.
22. Credit rating dynamics in the presence of unknown structural breaks. School of Finance and Statistics, East China Normal University, China. May 17, 2011.
23. The information content of market structural breaks in firms' credit ratings. China Center for Economic Research, Peking University, China. May 25, 2011.
24. Hidden Markov models and multiple change-points problem. Department of Statistics, Peking University, China. June 1, 2011.
25. A hidden Markov approach to sequential surveillance. Third International Workshop in Sequential Methodologies 2011. Stanford University, June 15, 2011.
26. A simple Bayesian approach to multiple change-points. ICSA 2011 Applied Statistics Symposium. New York, June 27, 2011.

POSTERS

1. Structural change as an alternative to long memory in financial time series. *The 3rd Annual Advances in Econometrics Conference*, November 5-7, 2004.
2. A novel Bayesian segmentation model for ChIP-Seq data analysis. *Systems Biology: Global Regulation of Gene Expression*, Cold Spring Harbor Laboratory. March 23-27, 2010.
3. A novel Bayesian Change-point model (BCP) for better ChIP-Seq data analysis. *Biology of Genome*, Cold Spring Harbor Laboratory. May 13, 2011.

SHORT COURSES

1. Portfolio optimization and investment analysis. Tsinghua University, Beijing, China. July 15-23, 2010.
2. Analysis of financial time series. Fudan University, Shanghai, China. May 16-19, 2011.
3. Statistical analysis of market risk. Tsinghua University, Beijing, China. May 20-June 3, 2011.

REFEREES FOR JOURNALS

Advances in Econometrics. Annals of Operation Research. Bernoulli. Communications in Statistics: Theory and Methods. Emerging Markets Finance and Trade. Journal of Agricultural, Biological, and Environmental Statistics. Journal of Computational and Graphical Statistics. Journal of Data Mining. Journal of Multivariate Analysis. Journal of Time Series Analysis. Review of Quantitative Finance and Accounting. Technometrics.