

CURRICULUM VITAE

Name: Faming Liang

Present Appointment: Preeminent Professor, Department of Biostatistics, University of Florida, Gainesville, FL 32611, USA.

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Education

- Ph.D., 1997, Statistics, The Chinese University of Hong Kong, Hong Kong.
- M. Phil., 1996, Statistics, The Chinese University of Hong Kong, Hong Kong.
- B.Sc., 1992, Statistics, Fudan University, China.

Employment

- July 2014— Preeminent Professor, University of Florida
- Sep. 2009— Professor, Texas A&M University
- Sep. 2006— Aug. 2009 Associate Professor, Texas A&M University
- Oct. 2002— Aug. 2006 Assistant Professor, Texas A&M University
- Jan. 2001— Oct. 2002 Assistant Professor, National University of Singapore, Singapore
- Jan. 1999— Dec. 2000 Visiting Assistant Professor, National University of Singapore, Singapore
- Aug. 1997— Dec. 1998 Postdoctoral Research Associate, University of California, Los Angeles, USA.

Professional Service

(a) Panel Service

- NSF panel, 2014.

(b) Editorial Service

- Associate Editor, *Journal of the American Statistical Association*, 2010—present.

- Associate Editor, *Journal of Computational and Graphical Statistics*, 2006—present.
- Associate Editor, *Bayesian Analysis*, 2010—present.
- Associate Editor, *Technometrics*, 2013—present.
- Associate Editor, *Annals of Mathematical Sciences and Applications*, 2015—present.
- Guest co-editor for the big data issue of *Statistics and Its Interface*.
- Guest co-editor for the big Data issue of *Technometrics*.
- Editor for the special issue “Statistical methods: Markov Chain Monte Carlo” of the *Journal of Biometrics & Biostatistics* (JBMBS).
- Editorial Board, *International Journal of Operations Research and Information Systems* (IJORIS), 2008—present.
- Editorial board, *Journal of Biometrics and Biostatistics*, 2010—present.
- Editorial board, *Nature Scientific Report*, 2014—present.
- Associate Editor, *Biometrics*, 2006-2008.

(c) Conference and invited session Organization

- Member of Scientific Program Committee for MCQMC 2016.
- Member of Scientific Program Committee for the 10th ICSA International conference.
- ICSA representative for JSM 2015.
- Co-organizer of the workshop: *Statistical and Computational Theory and Methodology for Big Data Analysis*, 2/9–2/14, 2014, Banff International Research Station, Vancouver, BC, Canada.
- Organizer of the invited session “Bayesian Methods for High Dimensional Variable Selection” for ICSA 2013.
- Singapore 2004 MCMC workshop, co-chair of the organization committee.
- 2003 Conferences of Texas Statisticians, member.
- Organizer of the invited session “Stochastic Approximation Monte Carlo” for JSM 2008.

(d) Review Service

I have served as a reviewer for statistical journals, tenure/promotion cases, and grant proposals of NSF, NSA-AMS and Research Council of Hong Kong.

Research Interests

- Big Data

- Monte Carlo Methods
- Bioinformatics
- Personalized medicine
- Cancer Genetics
- Spatial Statistics
- Machine Learning

Honors

- IMS fellow, 2013.
- ASA fellow, 2011.
- Elected member, International Statistical Association (ISI), 2005.
- Nominee of Outstanding Young Researcher Award, National University of Singapore, 2001.
- *Statistica Sinica*, Invited paper, 2001 Joint Statistical Meeting.

Research Grants

- Approved research grants
 - “An Equivalent Measure of Partial Correlation Coefficients Based Graphical Model Approach for Integrative Cancer Genetic Network Analysis.” Agency: NIGMS, NIH (R01-GM117597); PI: Faming Liang; co-PI: G. Xiao and P. Qiu. Period: 09/01/15–08/31/18; Amount: \$1,050,000.
 - “Distributed Real-Time Prediction Algorithms for Robust Space Situational Awareness.” PI: Raktim Bhattacharya, Co-PI: Bani K. Mallick and Faming Liang. Agency: AFOSR/RTC. Period: 06/01/15–05/31/2019. (Award recommended)
 - “Efficient Parallel Iterative Monte Carlo Methods for Statistical Analysis of Big Data”. PI: Faming Liang, Co-PIs: Chuanhai Liu (Purdue University) and Xingfu Wu (Texas A&M University). Agency: National Science Foundation (NSF), USA; DMS-1317131. Period: 08/01/13–07/31/16; Amount: \$301,575.
 - Workshop proposal: Statistical and Computational Theory and Methodology for Big Data Analysis. Organizers: Minghui Chen, Radu Craiu, Faming Liang, and Chuanhai Liu (in alphabetical order), 2/9–2/14, 2014, Banff International Research Station, Vancouver, BC, Canada.

- Improving NMR Protein Structure Determination Using Advanced Monte Carlo Methods. PI: Faming Liang, Co-PI: Xin Gao (KAUST) and Jim Ji. Agency: IAMCS. Period: 06/01/12—05/31/13. Amount: \$40,000.
- Monte Carlo Methods for Analysis of Large Spatial Data. PI: Faming Liang. Co-PI: Marc Genton. Agency: NSF, DMS-1106494; Period: 08/01/2011—07/31/2014. Amount: \$190,000.
- Sampling from Distributions with Intractable Integrals. PI: Faming Liang, Co-PI: none. Agency: NSF, USA; DMS-1007457; Period: 08/01/2010–07/31/2013; Amount: \$100,000.
- Collaborative Research: Efficient Probabilistic Approach Using Order Reduction and Hybrid Models – A New Paradigm for Structural Dynamic Analysis. PI: Yu Ding; Co-PI: Faming Liang. Agency: NSF, USA; CMMI-0926803; Period: 09/01/2009–08/31/2013; Amount: \$249,998.
- Bioinformatics Training Grant. PI: Raymond J. Carroll. Liang is one of mentors. Agency: NIH.
- Inaugural Global Research Partnership Center Grants. PI: James Calvin. Liang is one of investigators on this grant. Agency: King Abdullah University of Science and Technology (KAUST), Saudi Arabia. KUS-C1-016-04; Amount: \$20,000,000; Period: 05/2008—04/2013.
- “Development of Stochastic Approximation Monte Carlo Methods.”. PI: Faming Liang, Co-PI: none. Agency: NSF, USA; DMS-0607755; amount: \$140,000, Period: 09/01/2007—08/31/2010.
- “A Contour Based Monte Carlo Algorithm with Applications to Computational Statistics and Bioinformatics”. PI: Faming Liang, Co-PI: None. Agency: National Science Foundation (NSF), USA; DMS-0405748; amount: \$90,000, Period: 09/01/2004—08/31/2007.
- “Bayesian Models for Gene Expression with Microarray Data”, PI: Bani Mallic, Co-PI: R. J. Carroll, Faming Liang. Agency: NIH, CA104620, USA; Period: 06/01/2005—05/31/2008.
- “Computational Approach to System Biology”. PI: L. Zhang; Co-PI: Faming Liang, K.P. Choi, and L.H.Y. Chen. Agency: Biomedical Research Council, Singapore; period: 01/01/2002—12/31/2004.
- “Dynamic Importance Sampling and Applications”. PI: Faming Liang, Co-PI: None. Agency: National University of Singapore, Singapore; R-155-000-027-112; Period: 11/1/2001—10/30/2004.
- “Markov Chain Monte Carlo and Applications”. PI: Faming Liang, Co-PI: None. Agency: National University of Singapore, Singapore; R-155-000-010-112; Period: 1/1/1999—12/31/2001.

Selected Publications

- Books

1. Kendall, W.S., Liang, F., and Wang, J.S. (2005) *Markov Chain Monte Carlo: Innovations and Applications* (edited). World Scientific: Singapore. ISBN 981-256-427-6.
2. Liang, F., Liu, C. and Carroll, R.J. (2010) *Advanced Monte Carlo Monte Carlo Methods: Learning from Past Samples*. Wiley. ISBN 978-0-470-74826-8.

- Refereed Publications (Appeared, To Appear or Accepted)

1. Wong, W.H. and Liang, F. (1997). Dynamic weighting in Monte Carlo and optimization, *Proceedings of the National Academy of Sciences USA*, **94**, 14220-14224.
2. Liang, F. and Wong, W.H. (1999). Dynamic weighting in simulations of spin systems, *Physics Letters A*, **252**, 257-262.
3. Cong, J., Kong, T., Xu, D., Liang, F., Liu, J.S., and Wong, W.H. (1999). Relaxed simulated tempering for VLSI floorplan designs, *Proc. Asia and South Pacific Design Automation Conf.*, Hong Kong, pp. 13-16.
4. Cong, J., Kong, T., Xu, D., Liang, F., Liu, J.S., and Wong, W.H. (2000). Dynamic weighting Monte Carlo for constrained floorplan design in mixed signal application, *Proc. Asia and South Pacific Design Automation Conf.*, Japan.
5. Liang, F. and Wong, W.H. (2000). Evolutionary Monte Carlo sampling: applications to C_p model sampling and change-point problem. *Statistica Sinica*, **10**, 317-342.
6. Liu, J.S., Liang, F., and Wong, W.H. (2000) The use of multiple-try method and local optimization in Metropolis sampling, *Journal of the American Statistical Association*, **95**, 121-134.
7. Liu, J.S., Liang, F., and Wong, W.H. (2001). A theory for dynamic weighting in Monte Carlo, *Journal of the American Statistical Association*, **96**, 561-573.
8. Liang, F. and Wong, W.H. (2001). Real parameter evolutionary sampling with applications in Bayesian Mixture Models, *Journal of the American Statistical Association*, **96**, 653-666.
9. Liang, F., Truong, Y.K. and Wong, W.H. (2001). Automatic Bayesian model averaging for linear regression and applications in Bayesian curve fitting. *Statistica Sinica*, **11**, 1005-1029.
10. Liang, F. and Wong, W.H. (2001). Evolutionary Monte Carlo for Protein Folding simulations, *Journal of Chemical Physics*, **115**, 3374-3380.

11. Liang, F. (2002). Some connections between Bayesian and non-Bayesian methods for regression model selection, *Statistics & Probability Letters*, **57**, 53-63.
12. Liang, F. (2002). Dynamically weighted importance sampling in Monte Carlo Computation, *Journal of the American Statistical Association*, **97**, 807-821.
13. Liang, F. (2003). An effective Bayesian neural network classifier with a comparison study to support vector machine, *Neural Computation*, **15**, 1959-1989.
14. Liang, F. (2003). Use of sequential structure in simulation from high-dimensional systems. *Physical Review E*, **67**, 56101-56107.
15. Zhang, J., Liang, F., Dassen, W.R.M., Doevendans, P.A., and de Gunst, M. (2003). Search for Haplotype-Interactions that are susceptible to type I diabetes using unphased genotype data. *American Journal of Human Genetics*, **73**, 1385-1401.
16. Liang, F. (2004). Generalized 1/k-Ensemble Algorithm. *Physical Review E*, **69**, 66701-66707.
17. Liang, F. (2004). Annealing Contour Monte Carlo for Structure Optimization in an Off-lattice Protein Model. *Journal of Chemical Physics*, **120**, 6756-6763.
18. Liang, F. and Kuk, Y.C.A. (2004). A finite population estimation study with Bayesian neural networks. *Survey Methodology*, **30**, 219-234.
19. Liang, F. (2005). Bayesian neural networks for non-linear time series forecasting. *Statistics and Computing*, **15**, 13-29.
20. Liang, F. (2005). Evidence evaluation for Bayesian neural networks. *Neural Computation*, **17**, 1385-1410.
21. Liang, F. and Liu, C. (2005). Efficient MCMC estimation of discrete distributions. *Computational Statistics and Data Analysis*, **49**, 1039-1052.
22. Liang, F. (2005). A generalized Wang-Landau algorithm for Monte Carlo Computation. *Journal of the American Statistical Association*, **100**, 1311-1327.
23. Liang, F. (2005). Determination of normalizing constants for simulated tempering. *Physica A*, **356**, 468-480.
24. Liang, F. (2006). A Theory on Flat Histogram Monte Carlo Methods. *Journal of Statistical Physics*, **122**, 511-529.
25. Zhu, H.T., Liang, F., Gu, M. and Peterson, B. (2006). Stochastic approximation algorithms for estimation of spatial mixed models. In *Handbook of Computing and Statistics with Applications*, Vol. **1**(eds. S.Y. Lee), Elsevier. pp.399-421.
26. Liang, F., Liu, C., and Wang, N. (2007). A Robust Sequential Bayesian Method for Identification of Differentially Expressed Genes. *Statistica Sinica*, **17**, 571-597.

27. Liang, F., Liu, C., and Carroll, R.J. (2007). Stochastic Approximation in Monte Carlo Computation. *Journal of the American Statistical Association*, **102**, 305-320.
28. Liang, F. and Wang, N. (2007). Dynamic Hierarchical Clustering of Gene Expression Profiles. *Pattern Recognition Letters*, **28**, 1062-1076.
29. Liang, F. (2007). Use of SVD-based probit transformation in clustering gene expression profiles. *Computational Statistics & Data analysis*, **51**, 6355-6366.
30. Liang, F. (2007). Continuous Contour Monte Carlo for Marginal Density Estimation with an application to a spatial statistical model. *Journal of Computational and Graphical Statistics*, **16**(3), 608-632.
31. Liang, F. (2007). Annealing Stochastic Approximation Monte Carlo for Neural Network Training. *Machine Learning*, **68**(3), 201-233.
32. Liang, F. (2008). Stochastic Approximation Monte Carlo for MLP Learning. *Encyclopedia of Artificial Intelligence* (eds. J.R.R. Dopico, J.D. de la Calle, and A.P. Sierra), pp.1482-1489.
33. Cheon, S. and Liang, F. (2008). Phylogenetic Tree Reconstruction Using Sequential Stochastic Approximation Monte Carlo. *BioSystems*, **91**, 94-107.
34. Zhang, J., J Rggieli, M. Schipper, M. Entius, F. Liang, J. Koerselman, H Ruven, Y van der Graaf, D. Grobbee, and P. Doevendans (2008). Inflammatory gene haplotype-interaction networks involved in coronary collateral formation. *Human Heredity*, **66**, 252-264.
35. Zhang, J. and Liang, F. (2008). Convergence of stochastic approximation under irregular conditions. *Statistica Neerlandica*, **62**, 393-403.
36. Liang, F. (2008). Clustering gene expression profiles using mixture model ensemble averaging approach. *JP Journal of Biostatistics*, **2**(1), 57-80.
37. Liang, F. (2008). Annealing stochastic approximation Monte Carlo for global optimization. In *Simulated Annealing* (eds. C.M. Tan), pp.187-206. ISBN 978-953-7619-07-7, In-teh.
38. Liang, F. and Zhang, J. (2008). Estimating FDR under general dependence using stochastic approximation. *Biometrika*, **95**(4), 961-977.
39. Ren, Y., Ding, Y., and Liang, F. (2008). Adaptive Evolutionary Monte Carlo for Optimizations with Applications to Sensor Placement Problems. *Statistics and Computing*, **18**,375-390.
40. Liang, F. (2009). On the use of SAMC for Monte Carlo integration. *Statistics and Probability Letters*, **79**, 581-587.
41. Liang, F. and Zhang, J. (2009). Learning Bayesian Networks for Discrete Data. *Computational Statistics & Data Analysis*, **53**, 865-876.

42. Liang, F. (2009). Improving Stochastic Approximation Monte Carlo by Kernel Smoothing: Theory and Applications. *The Annals of Statistics*, **37**, 2626-2654.
43. Zhang, X.S., Liang, F., Srinivasan, R., and Van Liew, M. (2009). Estimating uncertainty of streamflow simulation using Bayesian neural networks. *Water Resour. Res.*, **45**, W02403, doi:10.1029/2008WR007030.
44. Liang, F. (2009). Learning Bayesian Networks for Gene Expression Data. In *Bayesian Modeling in Bioinformatics*, Dipak K. Dey, Samiran Ghosh, and Bani K. Mallick (eds), pp.349-367.
45. Cheon, S. and Liang, F. (2009). Bayesian phylogeny analysis via stochastic approximation Monte Carlo. *Molecular Phylogenetics & Evolution*, **53**, 394-403.
46. Liang, F. and Cheon, S. (2009). Monte Carlo dynamically weighted importance sampling for spatial models with intractable normalizing constant. *Journal of Physics: Conference Series*, **197**, 012004.
47. Xie, Y., Zhang, Y., and Liang, F. (2009). Crash Injury Severity Analysis Using Bayesian Ordered Probit Models. *Journal of Transportation Engineering*, *135*(1), 18-25.
48. Wu, M., Liang, F., and Tian, Y. (2009). Bayesian Modeling of ChIP-Chip Data Using Latent Variables. *BMC Bioinformatics*, **10**:352.
49. Zhang, P., Hill, C., Xia, Y., and Liang, F. (2010). Modeling the relationship between EDI implementation and firm performance improvement with neural networks. *IEEE Transactions on Automation Science and Engineering*, **7**(1), 96-110.
50. Liang, F. (2010). A double Metropolis-Hastings sampler for spatial models with intractable normalizing constants. *Journal of Statistical Computation and Simulation*, **80**, 1007-1022.
51. Martinez, J.G., Liang, F., Zhou, L., and Carroll, R.J. (2010). Longitudinal Functional Principal Component Modeling via Stochastic Approximation Monte Carlo. *Canadian Journal of Statistics*, **38**(2), 256-270.
52. Mo, Q. and Liang, F. (2010). Bayesian modeling of ChIP-chip data through a high-order Ising model. *Biometrics*, **66**, 1284-1294.
53. Zhang, J. and Liang, F. (2010). Exponential power mixture models for clustering. *Biometrics*, **66**, 1078-1086.
54. Mo, Q. and Liang, F. (2010). A hidden Ising model for ChIP-chip data analysis. *Bioinformatics*, **26**, 777-783.
55. Liang, F. (2010). Trajectory averaging for stochastic approximation MCMC algorithms. *The Annals of Statistics*, **38**, 2823-2856.

56. Wu, M. and Liang, F. (2010). Testing Multiple Hypotheses Using Population Information of Samples. *JP Journal of Biostatistics*, **4**, 181-201.
57. Mallick, B., Dhavala, S., Liang, F., Talluri, R. and Wu, M. (2010). Comments on “ ‘Bayesian Models for Sparse Regression Analysis of High Dimensional Data’ by Richardson, S., Bottolo, L. and Rosenthal, J.S.”, *Bayesian Statistics* **9**, 559-564.
58. Liang, F. (2011). Evolutionary Stochastic Approximation Monte Carlo for Global Optimization. *Statistics and Computing*, **21**, 375-393.
59. Yu, K., Liang, F., Chatterjee, N., and Ciampa, J. (2011). Efficient P -Value Evaluation for Resampling-based tests. *Biostatistics*, **12**, 582-593.
60. Yin, G., Ma, Y., Liang, F., and Yuan, Y. (2011). Stochastic Generalized Method of Moments. *Journal of Computational and Graphical Statistics*, **20**, 714-727.
61. Zhang, N., Li, X., Tao k., Jiang, L., Ma, T., Yan, S., Yuan, C. Moran, M.S., Liang, F., Haffty, B.G. and Yang, Q. (2011). BCL-2 (-938C>A) polymorphism is associated with breast cancer susceptibility. *BMC Medical Genetics*, 12:48.
62. Cheon, S. and Liang, F. (2011). Folding small proteins via annealing stochastic approximation Monte Carlo. *BioSystems*, 105, 243-249.
63. Zhang, X., Liang, F., Yu, B. and Zong, Z. (2011). Explicitly integrating parameter, input and structure uncertainties into Bayesian neural networks for probabilistic hydrologic forecasting. *Journal of Hydrology*, 409, 696-709.
64. Wu, M. and Liang, F. (2011). Population SAMC vs SAMC: Convergence and Applications to Bayesian Model Selection Problems. *Journal of Biometrics & Biostatistics*, S1:002. doi:10.4172/2155-6180.S1-002
65. Shi, X., Zhu, H., Ibrahim, J.G., Liang, F., Lieberman, J. and Styner, M. (2012). Intrinsic regression models for medial representation of subcortical structures. *Journal of the American Statistical Association*, **107**, 12-23.
66. Yu, K., Wacholder, S., Chatterjee, N., Wheeler, W., Wang, Z., Caporaso, N., Landi, M.T., Liang, F. (2012). A flexible Bayesian model for studying gene-environment interaction. *PLoS Genetics*, 8(1): e1002482. doi:10.1371/journal.pgen.1002482.
67. Park, J. and Liang, F. (2012). Bayesian analysis of geostatistical models with an auxiliary lattice. *Journal of Computational and Graphical Statistics*, **21**, 453-475.
68. Zhou, C., Yang, P., Dessler, A.E., and Liang, F. (2013). Statistic of horizontally oriented ice cloud crystals in optically thick clouds. *IEEE Geoscience and Remote Sensing Letters*, **10**(5), 986-990.
69. Jin, I.K. and Liang, F. (2013). Fitting social network models using varying truncation stochastic approximation MCMC algorithm. *Journal of Computational and Graphical Statistics*, **22**, 927-952.

70. Jin, I.K. and Liang, F. (2013). Bayesian SAMC for distributions with intractable normalizing constants. *Computational Statistics & Data Analysis*, in press.
71. Ryu, D., Liang, F. and Mallick, B.K. (2013). Sea Surface Temperature Modeling using Radial Basis Function Networks with a Dynamically Weighted Particle Filter. *Journal of the American Statistical Association*, **108**, 111-123.
72. Liang, F., Cheng, Y., Song, Q., Park, J., and Yang, P. (2013). A Resampling-based Stochastic Approximation Method for Analysis of Large Geostatistical Data. *Journal of the American Statistical Association*, **108**, 325-339.
73. Liang, F., Song, Q. and Yu, K. (2013). Bayesian subset modeling for high dimensional GLMs. *Journal of the American Statistical Association*, **108**, 589-606.
74. Liang, F. and Jin, I.K. (2013). A Monte Carlo Metropolis-Hastings algorithm for sampling from distributions with intractable normalizing constants. *Neural Computation*, **25**, 2199-2234.
75. Park, J. and Liang, F. (2013). A prediction-oriented Bayesian site selection approach for large spatial data. *Journal of Statistical Research*, **47**, 11-30.
76. Liang, F. and Xiong, M. (2013). Bayesian detection of disease-associated rare variants under posterior consistency. *PLoS One*, **8**(7), e69633.
77. Jin, I.K., Yuan, Y. and Liang, F. (2013). Bayesian analysis for exponential random graph models using the adaptive exchange sampler. *Statistics and Its Interface*, **6**, 559-576.
78. Pourhabib, A., Liang, F. and Ding, Y. (2014). Bayesian site selection for fast Gaussian process regression. *IIE Transactions*, **46**, 543-555.
79. Zhang, H., Shi, J., Liang, F., Wheeler, W., Stolzenberg-Solomon R., and Yu K. (2014). A fast multilocus test with adaptive SNP selection for large-scale genetic-association studies. *European Journal of Human Genetics*, **22**, 696-702.
80. Cheon, S. and Liang, F. (2014). Bayesian Phylogeny Analysis. In *Bayesian Phylogenetics: Methods, Algorithms, and Applications* (eds. M.-H. Chen, L. Kuo and P. Lewis), Chapman & Hall, in press.
81. Cheon, S., Liang, F., Chen, Y. and Yu, K. (2014). Stochastic Approximation Monte Carlo Importance Sampling for Approximating Exact Conditional Probabilities. *Statistics and Computing*, **24**, 505-520.
82. Cheng, Y., Gao, X., and Liang, F. (2014). Bayesian Peak Picking for NMR Spectra. *Genomics, Proteomics & Bioinformatics*, **12**, 39-47.
83. Song, Q., Wu, M. and Liang, F. (2014). Weak Convergence Rates of Population versus Single-Chain Stochastic Approximation MCMC Algorithms. *Advances in Applied Probability*, **46**, 1059-1083.

84. Liang, F., Cheng, Y. and Lin, G. (2014). Simulated Stochastic Approximation Annealing for Global Optimization with a Square-Root Cooling Schedule. *Journal of the American Statistical Association*, **109**, 847-863.
85. Liang, F. (2014). An overview of Stochastic Approximation Monte Carlo. *WIREs Computational Statistics*, **6**, 240-254.
86. Wu, M., Rijnkels, M. and Liang, F. (2014). Model-Free Inference for ChIP-Seq Data. *Journal of Data Mining in Genomics & Proteomics*, 5:153.
87. Xu, G., Liang, F. and Genton, M. (2015). A Bayesian Spatio-Temporal Geostatistical Model with an Auxiliary Lattice for Large Datasets. *Statistica Sinica*, in press.
88. Song, Q. and Liang, F. (2015). A Split-and-Merge Bayesian Variable Selection Approach for Ultra-high dimensional Regression. *Journal of the Royal Statistical Society, Series B*, in press.
89. Song, Q. and Liang, F. (2015). High Dimensional Variable Selection with Reciprocal L_1 -Regularization. *Journal of the American Statistical Association*, in press.
90. Liang, F., Jin, I.K., Song, Q., and Liu, J.S. (2015). An Adaptive Exchange Algorithm for Sampling from Distribution with Intractable Normalizing Constants. *Journal of the American Statistical Association*, in press.
91. Liang, F., Song, Q. and Qiu, P. (2015). An Equivalent Measure of Partial Correlation Coefficients for High Dimensional Gaussian Graphical Models. *Journal of the American Statistical Association*, in press.
92. Liang, F., Shi, R. and Mo, Q. (2015). A Split-and-Merge Approach for Singular Value Decomposition of Large-Scale Matrices. *Statistics and Its Interface*, in press.
93. Cheng, Y. and Liang, F. (2015) Discussion on “Modeling an Augmented Lagrangian for Improved Blackbox Constrained Optimization” by Gramacy et al. *Technometrics*, in press.

- Other Publications

1. Sanderson P, Taylor D., Ali M., Liew S.C., Couturier S., Lee G., Truong Y., Liang F., Gin K. and Holden H. (1999) Development of a methodology for monitoring variations in turbid waters draining modified wetlands in southeast Sumatra, Indonesia: preliminary results for suspended sediments, *Eighth International Symposium on the Interactions Between Sediments and Water*, Beijing, pp. 13-17.
2. Truong, Y. K., Liang, F., Sanderson, P. G., Taylor, D. and Liew, S. C. (2000). Monitoring variations in turbid waters draining modified wetlands in southeast Sumatra, Indonesia: A functional data analytic approach. In *Nonparametric approach to Knowledge Discovery*. Nara, Japan, December 14-17, 2000, Proceedings.

3. Liang, F. (2004) Annealing contour Monte Carlo for neural network training. In *Proc. Cybernetics and Informatics Technologies, Systems and Applications*, Vol.3, pp. 130-135.
4. Liang, F. (2005). Annotated bibliography: Advanced Markov chain Monte Carlo methods. *ISBA Bulletin*, **12**(4), 2-5.
5. Liang, F. and Huang, J. (2006). Book Review: Statistical and Computational Inverse Problems. *Technometrics*, **48**, 146.
6. Zhang, Y., Liang, F., and Xie, Y. (2007) Crash injury severity analysis using Bayesian ordered probit models. *Proceedings of Transportation Research Board 86th Annual Meeting*, accessible at <http://ntlsearch.bts.gov/tris/record/tris/01042602.html>.
7. Mukhopadhyay, S. and Liang, F. (2009) Bayesian analysis of high dimensional classification. The 29th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering. AIP Conference Proceedings, Vol. 1193, pp. 243-350.

Invited Lectures or short courses

- Invited Lectures in Yu Ding’s Lab, Department of Industry engineering, Texas A&M University: stochastic approximation Monte Carlo algorithm and its applications in global optimization I & II.
- A short course on Monte Carlo algorithm in NCI, July 15–31, 2009.

Invited talks

- Dynamic Weighting in Simulation and Optimization. *Department of Computational Science*, NUS, April, 2000.
- Evolutionary Monte Carlo and related applications. *Joint Statistical Meeting*, 2001.
- Dynamic Importance Sampling in Monte Carlo Computation. *Symposium on New Trends in Optimization and Computational Algorithms*, Kyodai Kaikan, Tyoto, 2001.
- Dynamic Importance Sampling methods. *The fifth ICOSA International Conference*, Hong Kong, 2001.
- An effective Bayesian neural network classifier with applications in Bioinformatics. *Genome Institute of Singapore*, Singapore, 2002.
- An effective Bayesian neural network classifier with a comparison study with support vector machine. *Department of Statistics*, National University of Singapore, 2002.
- Dynamically weighed Importance Sampling with applications. *Department of Applied Mathematics and Statistics*, University of California, Santa Cruz, 2002.

- Evolutionary Monte Carlo and Applications in Bioinformatics. *Department of Statistics, Texas A&M University, 2002.*
- Adaptive Direction Sampling in Simulation from High Dimensional Systems. *The First Cape Cod Workshop on Monte Carlo Methods, Harvard University, Boston, USA (Sep. 2002) (missed).*
- Contour Monte Carlo for Protein Folding Simulations. *Department of Statistics, Texas A&M University, 2004.*
- Contour Monte Carlo with Applications in Protein Structure Optimization. *The Second Cape Cod Workshop on Monte Carlo Methods, Harvard University, Boston, USA (August 27-28, 2004).*
- ICSA Applied Statistics Symposium Session Title: Bayesian Modeling and Monte Carlo Methods, June 2005
- Spring Meetings of the Eastern North American Region (ENAR) of the International Biometric Society, March 2005.
- Stochastic Approximation in Monte Carlo Computation. Department of Statistics, University of Minnesota. September 15, 2005.
- Stochastic Approximation Monte Carlo and Applications. Department of Statistical Science, Southern Methodist University, November 10, 2006.
- *The Third Cape Cod Workshop on Monte Carlo Methods, Harvard University, Boston, USA (May 13-14, 2007).*
- Improving Stochastic Approximation Monte Carlo using Kernel Smoothing Method. Salt lake city, JSM 2007 (topic contributed).
- Theory and applications of stochastic approximation Monte Carlo. Department of Statistics, University of Connecticut, October 17, 2007.
- An overview of stochastic approximation Monte Carlo algorithms. August 7, JSM 2008.
- International Workshop in Applied Probability - IWAP 2008, Technological University of Compiegne, Compiegne, France, July 7 -10, 2008.
- Multiple hypothesis testing with homogeneous control samples. Workshop on Bioinformatics, Computational Biology and Systems Biology, Texas A&M University.
- Estimating false discovery rate using the stochastic approximation algorithm. ICSA Applied Statistics Symposium, June 2008.
- Annealing Evolutionary Stochastic Approximation Monte Carlo for Global Optimization, INFORMS 2008.
- Bayesian Modeling of CHIP-chip Data using latent variables. NCI, Jan. 16, 2009.

- Bayesian Modeling of ChIP-chip Data using latent variables. Department of Statistics, Purdue University, Feb 26, 2009.
- Trajectory averaging for stochastic approximation MCMC algorithms. EPSRC Symposium Workshop on Markov-chain Monte Carlo, University of Warwick, UK.
- Trajectory averaging for stochastic approximation MCMC algorithms. Department of Mathematics, York University, UK.
- Stochastic Approximation Monte Carlo for Bayesian Computation. Department of Biostatistics, UNC, April 8, 2009.
- Stochastic Approximation Monte Carlo for Bayesian Computation. Department of Statistics, UCLA, May 19, 2009.
- The first IMS Asia Pacific Rim meeting, Seoul, Korea from June 28 to July 1, 2009.
- International Workshop on Statistical-Mechanical Informatics 2009 (IW-SMI2009), Kyoto, Japan, Sep. 13-16, 2009.
- IAMCS inverse problem seminar series: Bayesian Analysis of Geostatistical Models with an Auxiliary Lattice. Feb 3, 2010.
- A Monte Carlo Metropolis-Hastings sampler for sampling from distributions with intractable normalizing constants. ICSA 2010.
- Annealing evolutionary stochastic approximation for global optimization. INFORM 2010, Austin, Nov. 6-10, 2010.
- An adaptive Monte Carlo Metropolis-Hastings algorithm for Bayesian inference of spatial autologistic models. MCM'ski III, Utah, January 3-4, 2011.
- Stochastic Approximation Monte Carlo: Theory and Applications. The 2011 Information Theory and Applications Workshop, UCSD, Feb. 6–Feb. 11, 2011.
- A Marginal Inference Approach for Large Spatial Data. Department of Mathematics, UC San Diego State University, Feb. 11, 2011.
- A Dynamically Weighted Particle Filter for Sea Surface Temperature Prediction. IAMCS Workshop in Large-Scale Inverse Problems and Uncertainty, Texas A&M University, Feb. 25, 2011.
- Division of Biostatistics and Human Genetics Center, School of Public Health University of Texas Health Science Center at Houston, Houston, April 12, 2011.
- Stochastic root-finding and optimization, ICSA 2011, New York, June 26-29, 2011.
- False discovery rate control in peak calling for ChIP-Seq data analysis, National Cancer Institute, NIH, July 26, 2011.

- Bayesian subset Regression for high dimensional GLMs and related asymptotics. MCQMC 2012, Australia, Feb. 13-17, 2012.
- Bayesian subset Regression for high dimensional GLMs and related asymptotics. High Dimensional and High Complexity Monte Carlo Computation and Theory, March 18-23, 2012, Banff, Canada.
- Bayesian subset Regression for high dimensional GLMs and related asymptotics. Department of Statistics, TAMU. *Probability and Statistics Day*, March 24, 2012.
- Sea Surface Temperature Modeling using Radial Basis Function Networks with Dynamically Weighted Particle Filter. SIAM Conference on Uncertainty Quantification to be held on April 2-4, 2012, in Raleigh, NC.
- Bayesian subset Regression for high dimensional GLMs and related asymptotics. ICMS WORKSHOP ON ADVANCES IN MARKOV CHAIN MONTE CARLO: THEORY, METHODOLOGY, AND APPLICATIONS Edinburgh, April 23-25, 2012.
- Bayesian subset Regression for high dimensional GLMs and related asymptotics. Department of Mathematics, Newcastle University, UK, April 25, 2012.
- Fitting Social Network Models Using Varying Truncation Stochastic Approximation MCMC Algorithm. Interface Symposium, Houston, May 16-18, 2012.
- A tutorial of Stochastic approximation Monte Carlo, The IAMCS-KAUST miniworkshop, Beijing Institute of Genomics, Beijing, May 30, 2012.
- A Resampling-based Monte Carlo Approach for Large Spatial Data. 2012 Southern Regional Consul of Statistics (SRCOS) meeting in June 3-6 2012 held on Jekyll Island Georgia.
- Fitting Social Network Models Using Varying Truncation Stochastic Approximation MCMC Algorithm. ICSA 2012 at Boston, June 23-26.
- Bayesian detection of disease-associated rare variants under posterior consistency, UT Southwestern Medical Center, March 21, 2013.
- An Adaptive Exchange Algorithm for Sampling from Distribution with Intractable Normalizing Constants, UCLA departmental seminar, June 6, 2013.
- Bayesian detection of disease-associated rare variants under posterior consistency, ICSA symposium, Washington DC, June 9-12, 2013.
- An Adaptive Exchange Algorithm for Sampling from Distribution with Intractable Normalizing Constants, IMS-China, Chengdu, June 30-July 4, 2013.
- Simulated Stochastic Approximation Annealing for Global Optimization with a Square-Root Cooling Schedule, The Second Taihu International Statistics Forum, Suzhou, China, July 6-8, 2013.

- Simulated Stochastic Approximation Annealing for Global Optimization with a Square-Root Cooling Schedule, Academy of Mathematics and Systems Science, Chinese Academy of Sciences Beijing, China, July 16, 2013.
- Bayesian detection of disease-associated rare variants under posterior consistency, The IAMCS-KAUST miniworkshop, Beijing Institute of Genomics, Beijing, July 18-19, 2013
- An Adaptive Exchange Algorithm for Sampling from Distribution with Intractable Normalizing Constants, Joint Statistical Meeting, Montreal, Canada, August 3-8, 2013.
- Bayesian variable selection for high dimensional data with applications in biomedical studies. Department of Biostatistics, University of Florida, November 15, 2013.
- A Bootstrap Metropolis-Hastings Algorithm for Bayesian Analysis of Big Data, ICSA, Hong Kong, December 20-23, 2013.
- A Bootstrap Metropolis-Hastings Algorithm for Bayesian Analysis of Big Data, IAMCS seminar series, Texas A&M University, Feb 6, 2014.
- Recent developments of iterative Monte Carlo methods for big data analysis. Banff Big Data workshop, Feb 10, 2014.
- A Bootstrap Metropolis-Hastings Algorithm for Bayesian Analysis of Big Data. Duke University, Departmental seminar, Feb 14, 2014.
- Recent developments of iterative Monte Carlo methods for big data analysis. University of Texas at Austin, Symposium on Advanced Scientific Computation, April 2014.
- 2014 IISA Conference. Riverside, CA, July 11-13, 2014.
- A Split-and-Merge Bayesian Variable Selection Approach for Ultra-high dimensional Regression. JSM, August 2-7, 2014.
- A Bootstrap Metropolis-Hastings Algorithm for Bayesian Analysis of Big Data. National Cancer Institute, NIH, July 30, 2014.
- Partial correlation selection for high dimensional Gaussian graphical models. Duke University, Sep. 26, 2014.
- Partial correlation selection for high dimensional Gaussian graphical models. Department of Statistics, University of Florida, Oct. 23, 2014.
- Partial correlation selection for high dimensional Gaussian graphical models. (Keynote speaker) in the workshop “Big Data: Opportunities, Challenges and Innovations”, Dec. 27, 2014 - Dec. 30, 2014 in Sanya, China.
- Partial correlation selection for high dimensional Gaussian graphical models. January 25, 2015, UTSW.
- Recent Developments of Statistical Methods for Big Data Analysis. June 29, Huaqiao University, Xiamen, China.

- A Bootstrap Metropolis-Hastings Algorithm for Bayesian Analysis of Big Data. IMS-China, Kunming, July 1-4, 2015.
- A Bootstrap Metropolis-Hastings Algorithm for Bayesian Analysis of Big Data. ICSCA-China, Shanghai, July 6-7, 2015.
- Partial correlation selection for high dimensional Gaussian graphical models. Fudan University, July 6, 21015.
- A Bootstrap Metropolis-Hastings Algorithm for Bayesian Analysis of Big Data. Seattle, JSM 2015.

Teaching Experience

(a) Courses taught

- * Computing for Statistics
- * Computer Intensive Statistical Methods
- * Linear Model
- * Regression Analysis
- * Experimental Data Analysis
- * Probability (undergraduate course)
- * Probability (graduate course)
- * Statistical Inference (graduate course)
- * Computing for Bioinformatics (graduate course)
- * Monte Carlo Methods (graduate course)

(b) Course leadership/organization

- * Honors Program (2000-2001)

(c) Development of new courses

- * STATxxx Statistical Computing (in NUS)
- * STATxxx Bayesian Statistics (in NUS)
- * STAT689 Computing for Bioinformatics (Graduate course, in TAMU)
- * STAT689 Monte Carlo Methods (Graduate course, in TAMU)

PhD students supervised

- (1) Soo Young Cheon (2006, Associate Professor, Korea University)
- (2) Mingqi Wu (Research Scientist, Shell Global Solutions Inc., December 2010)
- (3) Ick Hoon Jin (Assistant Professor, University of Notre Dame, August 2011)

- (4) Jincheol Park (Assistant Professor, Keimyung University of Korea, August 2012)
- (5) Yichen Cheng (Fred Hutchinson Cancer Research Center, August 2013)
- (6) Yiyi Wang (2012, co-advised with David Dahl)
- (7) Qifan Song (Assistant Professor, Purdue University, August 2014)
- (8) Debkumar De (UC Berkely, 2014)
- (9) Fang-yu Lin (August 2014)
- (10) Jinsu Kim (December, 2014)
- (11) Suwa Xu (present)
- (12) Bochao Jia (present)
- (13) Runmin Shi (present, co-advised with Dr. Malay Ghosh)
- (14) Qianyun Li (present)