

RONG CHEN

Department of Statistics and Biostatistics
School of Arts and Sciences
Rutgers, The State University of New Jersey
Hill Center, Busch Campus
110 Frelinghuysen Road
Piscataway, NJ 08854-8019

Tel: (848) 445-7690
Fax: (732) 445-3428
email: rongchen@stat.rutgers.edu
web: stat.rutgers.edu/~rongchen

Education:

- 1990 Ph.D., Statistics, Carnegie Mellon University, Pittsburgh, PA.
- 1987 M.S., Statistics, Carnegie Mellon University, Pittsburgh, PA.
- 1985 B.S., Mathematics, Peking University, Beijing, People's Republic of China.

Experience:

- 2016 - Distinguished Professor, Department of Statistics and Biostatistics, Rutgers University
- 2011 - Director, Financial Statistics and Risk Management Master Program, Dept. of Statistics and Biostatistics, Rutgers University
- 2015 - Director, Data Science Master Program, Dept. of Statistics and Biostatistics, Rutgers University
- 2007 - 2016 Professor, Department of Statistics and Biostatistics, Rutgers University
- 2005 - 2007 Program Director, Division of Mathematical Sciences, National Science Foundation
- 1999 - 2007 Professor, Department of Information and Decision Sciences and Department of Bioengineering, The University of Illinois at Chicago.
- 2002 - 2005 Professor and Head, Department of Business Statistics and Econometrics, Peking University, China
- 1996 - 1999 Associate Professor, Department of Statistics, Texas A&M University.
- 1990 - 1996 Assistant Professor, Department of Statistics, Texas A&M University.

Major Research Interests:

- Nonlinear and Multivariate Time Series Analysis.
- Monte Carlo Methods, Statistical Computing and Bayesian Analysis.
- Statistical Applications in Economics, Finance and Business.
- Statistical Applications in Bioinformatics

Funding:

- 'Nonlinear Dynamic Factor Models and Dynamic Factor Driven Functional Time Series Models', NSF grant DMS-1513409. 2015-2018. Principal Investigator.

- 'The Fifth International Conference on Finance, Insurance, Probability and Statistics', NSF grant DMS-1540863. 2015-2016. Principal Investigator.
- 'Collaborative Research: Modeling and Analysis of Fracture Network for Shale Gas Development and Its Environmental Impact', NSF grant DMS-1209085. 2012-2015. Principal Investigator.
- 'Analysis of Functional Time Series', NSF grant DMS-0905763. 2009-2013. Principal Investigator.
- 'ATD: Statistical Methods for Nuclear Material Surveillance Using Mobile Sensors', NSF grant DMS-0915139. 2009-2012. Co-Principal Investigator.
- 'Collaborative Research: Monte Carlo Study of Pseudoknotted RNA Molecules: Motifs, Structure and Folding.' NSF grant DMS-0800183. 2008-2012. Principal Investigator.
- 'Constrained Sequential Monte Carlo and Its Applications in Structural Bioinformatics: From Surface Patterns and Spatial Motif to Protein Function and Stability.' NIH grant R01 Gm068958. 2003-2007. Principal Investigator.
- 'Collaborative Research: Advanced Sequential Monte Carlo Methods and Applications' NSF grant DMS-0244541 (Focused Research Group Grant) 2003 - 2006. Principal Investigator.
- 'Collaborative Research: Sequential Monte Carlo Methods and Their Applications' NSF grant DMS-0073601 (Focused Research Group Grant) 2000 - 2003. Principal Investigator.
- 'Adaptive Bayesian Receivers in Fading Channels: A Sequential Monte Carlo Filtering Design Paradigm', NSF grant CCR-9980599. 2000-2003. Co-Principal Investigator.
- 'Monte Carlo Filters for Nonlinear and Non-Gaussian Dynamic Systems,' NSF grant DMS-9982846. 1999-2002. Principal Investigator
- 'Nonparametric Modeling and Prediction for Time Series Analysis', NSF grant DMS-9626113. 1996-1999. Principal Investigator.
- 'Nonlinear Time Series Analysis', NSF grant DMS-9301193. 1993-1996. Principal Investigator.
- 'Missing observation prediction for tidal analysis', Texas General Water Office. 1996. Co-Investigator.
- 'Protocols and Procedures for Environmental Impact, Mitigation and Recovery Data', Texas General Land Office. Co-Investigator.
- 'Spatial-temporal modeling and prediction of surface ozone level in Harris County, TX,' Texas Natural Resource Conservation Commission. 1994. Co-Investigator.

Awards:

- Elected Member of International Statistical Institute (2011)
- Elected Fellow of Institute of Mathematical Statistics (2006)
- Elected Fellow of American Statistical Association (2002)
- 2001 College of Business Administration Alumni Award for Distinguished Research, University of Illinois at Chicago

Professional Services:

- Editorial Board
 - Joint-Editor, *Journal of Business & Economic Statistics*, 2012-2015
 - Associate Editor, *Journal of Econometrics*, 2012-
 - Associate Editor, *Statistical Science*, 2009-
 - Associate Editor, *Annals of Statistics*, 2007-2012
 - Associate Editor, *Journal of American Statistical Association*. 2001 - 2005, 2009-2012
 - Associate Editor, *Statistica Sinica*. 1998 - 2006
 - Associate Editor, *Computational Statistics*. 1997 - 2003
 - Associate Editor, *Journal of Business & Economic Statistics*. 1997 - 2003

- Society Services
 - Member, Committee on Publications, American Statistical Association, 2008-
 - Treasurer, Institute of Mathematical Statistics, 2007-2010
 - Chair, Committee on IMS Asia-Pacific Rim Conference Series. 2008.
 - Council member, International Society on Business and Industrial Statistics, 2005-2007.
 - Board member, International Chinese Statistical Association, 2002-2004.
 - Chair: Communication Committee, International Chinese Statistical Association. 2002.
 - Member, ASA Scientific Freedom and Human Rights committee (1995-1997)

- Conference Organizer
 - Co-Chair, Organizing committee and local committee, The Fifth IMS Sponsored International Workshop on Finance, Insurance, Probability and Statistics (IMS-FIPS2015), 2015, New Brunswick.
 - Co-Chair, Organizing committee, 2014 International Symposium of Financial Engineering and Risk Management (FERM2014), 2014, Beijing, China.
 - Co-Chair, IMS Program Committee, Joint Statistics Meeting (JSM) 2011, Miami.
 - Co-Chair, Organizing committee, 2010 International Symposium of Financial Engineering and Risk Management (FERM2010), 2010, Taipei, Taiwan.
 - Chair: Organizing committee, 2004 International Symposium on Business Statistics, Beijing, China.
 - Co-Chair: Organizing committee, 2001 ICSA Applied Statistics Symposium, Chicago

- Other Services
 - External Academic Advisor, Master of Arts in Quantitative Analysis for Business, and Bachelor of Business Administration in Business Analysis, College of Business, City University of Hong Kong. 2014-present.
 - External Examiner, Department of Statistics, Chinese University of Hong Kong. 2003-2005, 2013-present
 - Panel Reviewer for National Science Foundation and National Security Agency.
 - Proposal Reviewer for: National Science Foundation, National Security Agency,
 - Refereed more than 150 papers for more than 20 different journals.
 - Book Review for *Journal of American Statistical Association*, *International Journal of Forecasting*

University Services:

- Director, Data Science Program (2015–)
- Director, Financial Statistics and Risk Management Program (2011–)
- Member, Curriculum Committee, Graduate School, (2015–)
- Member, SAS Appointment and Promotion and Committee (2011-2014)

Professional Societies:

- Institute of Mathematical Statistics
- American Statistical Association
- International Statistical Institute
- IEEE Society

US Patent:

- US Patent 6,725,025: 'Interference Cancellation Among Wireless Units Using Gibbs Sampling'

Refereed Journal Publications:

- [1] Chen, R. and Tsay, R.S. (1991) 'On the ergodicity of TAR(1) processes', *The Annals of Applied Probability*, **1**, 613-634.
- [2] Chen, R. and Tsay, R.S. (1993) 'Functional coefficient autoregressive models', *Journal of American Statistical Association*, **88**, 298-308.
- [3] Chen, R. and Tsay, R.S. (1993) 'Nonlinear additive ARX models', *Journal of American Statistical Association*, **88**, 955-967.
- [4] Liu, J.S. and Chen, R. (1995) 'Blind deconvolution via sequential imputation', *Journal of American Statistical Association*, **90**, 567-576.
- [5] Chen, R., Liu, J.S. and Tsay, R.S. (1995) 'Additivity tests for nonlinear autoregressive models', *Biometrika*, **82**, 369-383.
- [6] Chen, R. (1995) 'Threshold variable selection of open-loop threshold AR models', *Journal of Time Series Analysis*, **16**, 461-481
- [7] Chen, R. and Li, T. (1995) 'Blind restoration of linearly degraded discrete signals by Gibbs sampler', *IEEE Transactions on Signal Processing*, **43**, 2410-2413
- [8] Chen, R. (1996) 'A nonparametric multi-step prediction estimator in Markovian structures', *Statistica Sinica*, **6**, 603-615
- [9] Chen, R. and Liu, J.S. (1996) 'Predictive updating methods with applications to Bayesian classification', *Journal of the Royal Statistical Society, Series B*, **58**, 397-415
- [10] Chen, R. and Tsay, R.S. (1996) 'Nonlinear transfer functions', *Journal of Nonparametric Statistics*, **6**, 193-204.
- [11] Cheng, Q., Chen, R. and Li, T. (1996) 'Simultaneous wavelet estimation and deconvolution of reflection Seismic signals via Gibbs sampler', *IEEE Transactions on Geoscience and Remote Sensing*, **34**, 377-384

- [12] Chen, R. (1996) ‘Incorporating extra information in nonparametric smoothing’, *Journal of Multivariate Analysis*, **58**, 133-150
- [13] Carroll, R.J., Chen, R., Li, T-H, Newton, H.J., Schmiediche, H. and Wang, N. (1997) ‘Trends in ozone exposure in Harris County, Texas’, *Journal of American Statistical Association*, (discussion paper), **92**, 392-415
- [14] Härdle, W., Chen, R. and Luetkepohl, H. (1997). ‘A review of nonparametric time series analysis’, *International Statistical Review*, **65**, 49-72
- [15] Linton, O. Chen, R. Wang, N. and Härdle, W. (1997). ‘An analysis of transformation for additive nonparametric regression’, *Journal of American Statistical Association*, **92**, 1512-1521
- [16] Liu, J.S. and Chen, R. (1998) ‘Sequential Monte Carlo methods for dynamic systems’, *Journal of American Statistical Association*, **93**, 1032-1043
- [17] Liu, J.S. Chen, R. and Wong, W.H. (1998) ‘Rejection control and importance sampling’, *Journal of American Statistical Association*, **93**, 1022-1031
- [18] Chen, R. and Fomby, T. (1999) ‘Forecasting with stable seasonal pattern models with an application of Hawaiian tourist data’, *Journal of Business & Economic Statistics*, **17**, 497-504
- [19] Speed, F.M., Smith, W.B., Chen, R., and Speed, F.M. Jr (1999), ‘Analysis of tidal data and datums: Accessible examples of harmonic modeling with autocorrelation and imputation’, *Communications in Statistics, Part A – Theory and Methods*, **28**, 2947-2965
- [20] Chen, R. and Liu, J.S. (2000) ‘Mixture Kalman Filters’, *Journal of the Royal Statistical Society, Series B*, **62**, 493-508
- [21] Chen, R., Wang, X. and Liu, J.S. (2000) ‘Adaptive Joint Detection and Decoding in Flat-Fading Channels via Mixture Kalman Filtering’. *IEEE trans. information theory*, **46**, 2079-2094
- [22] Wang, X. and R. Chen. (2000) ‘Adaptive MAP multiuser detection for synchronous CDMA with Gaussian and non-Gaussian noise’, *IEEE trans. signal processing*, **48**, 2013-2028
- [23] Chen, R. and Liu, L. (2001) ‘Functional coefficient autoregressive models: estimation and tests of hypotheses’, *J. Time Series Analysis*, **22**, 151-174
- [24] Wang, X. and R. Chen. (2001) ‘Blind Turbo equalization in Gaussian and impulsive noises. *IEEE trans. Vehicular Technology*, **50**, 1092-1105
- [25] Liu, L-M, Bhattacharyya, S., Sclove, S.L., Chen, R. and Lattyak, W.J. (2001) ‘Data mining on time series: an illustration using fast-food restaurant franchise data’, *Computational Statistics and Data Analysis*, **37**, 455-476
- [26] Wang, X., Chen, R. and Liu, J.S. (2002) ‘Monte Carlo Bayesian signal processing for wireless communication’, *IEEE trans. VLSI Signal Process*, **30**, 89-105
- [27] Chen, R., Liu, J.S., and Wang, X. (2002) ‘Convergence Properties of the Gibbs Sampler in Some Digital Communications Problems’, *IEEE trans. Signal Process*, **50**, 255-270
- [28] Wang, X., Chen, R. and Guo, D. (2002) ‘Delayed Pilot Sampling for Mixture Kalman Filter with Application in Fading Channels’, *IEEE trans. Signal Process*, **50**, 241-254
- [29] Chen, R. and J.S. Liu. (2002) Discussion of ‘Spatial-Temporal Nonlinear Filtering Based on Hierarchical Statistical Models’ by M. E. Irwin, N. Cressie, and G. Johannesson. *Test*, **11**, 282-284.

- [30] Liang, J, Zhang, J. and Chen, R. (2002) 'Statistical geometry of packing defects of lattice chain polymer for enumeration and sequential Monte Carlo method', *Journal of Chemical Physics*, **117**, 3511-3521
- [31] Guo, D. Wang, X. and Chen, R. (2003) 'Nonparametric Adaptive Detection in Fading Channels Based on Sequential Monte Carlo and Bayesian Model Averaging', *Annals of Institute of Statistical Mathematics*, **55**, 423-436.
- [32] Zhang, J., R. Chen, C. Tang and J. Liang (2003) 'Origin of scaling behavior of protein packing density: A sequential Monte Carlo study of compact long chain polymer', *Journal of Chemical Physics*, **118**, 6102-6109
- [33] Chen, R., Yang, L. and Hafner, C. (2004) 'Nonparametric multi-step prediction in time series', *Journal of the Royal Statistical Society, Series B.* **66**, 669-686.
- [34] Guo, D., Wang, X., and Chen, R.(2004) 'Wavelet-based Sequential Monte Carlo Blind Receivers in Fading Channels with Unknown Channel Statistics', *IEEE Transactions on Signal Processing.* **52**, 227-239
- [35] Zhang, J., Chen, Y., Chen, R., and Liang, J. (2004) 'Importance of chirality and reduced flexibility of protein side chains: A study with square and tetrahedral lattice models', *Journal of Chemical Physics*, **121**, 592-603
- [36] Hjellvik, V., Chen, R., and Tjøstheim, D. (2004) 'Nonparametric estimation and testing in panels of intercorrelated time series', *Journal of Time Series Analysis* **25**, 831-872
- [37] Guo, D., Wang, X. and Chen, R. (2004) 'Multilevel Mixture Kalman Filter', *EURASIP Journal on Applied Signal Processing, Special issue on Particle Filtering*, **15**, 2255-2266.
- [38] Guo, D., Wang, X. and Chen, R. (2005) 'New Sequential Monte Carlo Methods for Nonlinear Dynamic Systems', *Statistics and Computing.* **15**, 135-147
- [39] Lin, M., Zhang, J., Cheng, Q. and Chen, R. (2005) 'Independent particle filters', *Journal of American Statistical Association*, **100**, 1412-1421.
- [40] Liu, J.M, Liu, L-M and Chen, R. (2006) 'Modeling hourly electricity loads using a semiparametric time series approach', *Journal of Forecasting*, **25**, 537-559.
- [41] Zhang, J., Chen, R. and Liang, J. (2006) 'Empirical potential function for simplified protein models: combining contact and local sequence structure descriptors', *PROTEINS: Structure, Function, and Bioinformatics*, **63**, 949-960.
- [42] Zhang, J., Lin, M., Chen, R., Liang, J. and Jun S. Liu (2007) Monte Carlo sampling of Near-Native structures of proteins with applications', *PROTEINS: Structure, Function, and Bioinformatics*, **66**, 61-68.
- [43] Wu, S, and Chen, R. (2007) 'Threshold variable selection and threshold variable driven switching autoregressive models', *Statistica Sinica*, **17**, 241-264.
- [44] Zhang, J.L., Lin, M, Liu, J.S. and Chen. R. (2007) 'Lookahead and piloting strategies for variable selection', *Statistica Sinica*, **17**, 985-1005.
- [45] Chen, C.T., Chen, R. and Bassett, G.W. (2007) 'Fundamental Indexation via Smoothed Cap Weights', *J. Finance and Banking*, **31**, 3486-3502.
- [46] Lin, M., Chen, R. and Liang, J. (2008) 'Statistical geometry of lattice chain polymers with voids of defined shapes: Sampling with strong constraints', *J. Chemical Physics*, **128(084903)**, 1-12
- [47] Zhang, J., Lin, M., Chen, R., Wang, W. and Liang, J. (2008) 'Discrete State Model and Accurate Estimation of Loop Entropy of RNA Secondary Structures', *J. Chemical Physics*, **128(125107)**, 1-10

- [48] Lin, M., Lu, H., Chen, R. and Liang, J. (2009) 'Generating properly weighted ensemble of conformations of proteins from sparse or indirect distance constraints', *J. Chemical Physics*, **129**(094101), 1-13.
- [49] Feng, X., Chen, R. and Bassett, G.W. (2009) 'Quantile Momentum', *Statistics and Its Interface*, **1**, 243-254.
- [50] Cai, A.M., Tsay, R.S. and Chen, R. (2009) 'Variable selection in linear regression with many predictors', *J. Computational and Graphical Statistics*, **18**, 573-591
- [51] Zhang, J., Dundas, J., Lin, M., Chen, R., Wang, W. and Liang, J. (2009) 'Prediction of geometrically feasible three dimensional structures of Pseudoknotted RNA through free energy', *RNA*, **15**, 2248-2263.
- [52] Liu, J.M., Chen, R. and Yao, Q. (2010) 'Nonparametric transfer function models', *J. Econometrics*, **157** 151-164.
- [53] Lin, M., Chen, R. and Mykland, P. (2010) 'On generating Monte Carlo samples of continuous diffusion bridges', *Journal of American Statistical Association*, **105**, 820-838.
- [54] Chen, R., Lin, M. and Guo, R. (2010) 'Self-Selection in Decision to Withdraw IPOs', *Journal of American Statistical Association*, **105**, 1297-1309.
- [55] Kang, Z., Zhang, L. and Chen, R. (2010) 'Forecasting return volatility in the presence of microstructure noise', *Statistics and Its Interface*, **3**, 145-158.
- [56] Chen, R., Liang, H. and Wang, J. (2011) 'Determination of linear components in additive models', *Journal of Nonparametric Statistics*, **23**, 367-383.
- [57] Lin, M., Zhang, J., Lu, H-M, Chen, R. and Liang J. (2011) 'Constrained proper sampling of conformations of transition state ensemble during protein folding'. *Journal of Chemical Physics*, **134**(075103) 1-13.
- [58] Chen, S., Chen, R., Ardell, G. and Lin, B. (2011) 'End-of-day stock trading volume prediction with a two-component hierarchical model', *Journal of Trading*, **summer**, 1-8.
- [59] Wang, J., Hua, L. and Chen, R. (2012) 'A state-space model approach for modeling HIV infection dynamics', *Journal of Time Series Analysis*, **33**, 841-849.
- [60] Chen, S., Min, W. and Chen, R. (2013) 'Model identification for time series with dependent innovations', *Statistica Sinica*, **23**, 873-899.
- [61] Lin, M., Chen, R. and Liu, J.S. (2013) 'Lookahead strategies for sequential Monte Carlo', *Statistical Science*, **28**, 69-94.
- [62] Cheng, J., Xie, M., Chen, R. and Roberts, F. (2013) 'A latent source model to detect multiple spatial clusters with application in a mobile sensor network for surveillance of nuclear materials', *Journal of American Statistical Association*, **108**, 902-913.
- [63] Li, W., Tan, Z., and Chen, R. (2013) 'Two-stage importance sampling with mixture proposals', *Journal of American Statistical Association*, **108**, 1350-1360.
- [64] Liu, X., Cai, Z. and Chen, R. (2015) 'Functional Coefficient Seasonal Time Series Model with an Application of Hawaii Tourism Data', *Computational Statistics*, **33**, 719-744.
- [65] Zheng, T., Xiao, H. and Chen, R. (2015) 'Generalized ARMA Models with Martingale Difference Errors', *Journal of Econometrics*, **189**, 492-506
- [66] Li, W., Tan, Z., and Chen, R. (2016) 'Efficient Sequential Monte Carlo with Multiple Proposals and Control Variates', *Journal of American Statistical Association*, **111**, 298-313
- [67] Liu, X. and Chen, R. (2016+) 'Regime-switching factor models for high-dimensional time series', *Statistica Sinica*, in press

- [68] Liu, X., Xiao, H. and Chen, R. (2016+), 'Convolutions autoregressive models for functional time series', *J. Econometrics*, in press
- [69] Lin, M., Suess, E., Shumway, R. and Chen, R. (2016+), 'Bayesian deconvolution of signals observed on arrays', *J. Time Series Analysis*, in press.