

# Rui Xie

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## EDUCATION

**University of Georgia**, Department of Statistics, Athens, Georgia, USA

- Ph.D. in Statistics, Aug 2013 – Present
  - Focus: Sampling, Time Series, Spatial Statistics, Big Data, Engineering Statistics.

**Georgia Institute of Technology**, H. Milton School of Industrial and Systems Engineering, Atlanta, Georgia, USA

- M.S. in Statistics, Aug 2011 – May 2013

**Xiamen University**, Xiamen, Fujian, China

- B.S. in Physics, Aug 2007 – Jul 2011
- B.S. in Quantitative Finance

## PUBLICATIONS

### PEER-REVIEWED

- [1] **Rui Xie**, Fangyu Li, Zengyan Wang, and WenZhan Song. Large scale randomized learning guided by physical laws with applications in full waveform inversion. Accepted. *2018 IEEE Global Conference on Signal and Information Processing (GlobalSIP)*.
- [2] Zhang, Xinlian, **Rui Xie**, and Ping Ma. Statistical Leveraging Methods in Big Data. In: Härdle W., Lu HS., Shen X. (eds) *Handbook of Big Data Analytics*. Springer Handbooks of Computational Statistics, Springer, Cham, 2018. 51-74.
- [3] Lu, Yanfei, **Rui Xie**, and Steven Y. Liang. Adaptive online dictionary learning for bearing fault diagnosis. Accepted, *The International Journal of Advanced Manufacturing Technology*.
- [4] Lu, Yanfei, **Rui Xie**, and Steven Y. Liang. Detection of weak fault using sparse empirical wavelet transform for cyclic fault. *The International Journal of Advanced Manufacturing Technology*, (2018)99: 1195-1201.
- [5] Li, Fangyu, **Rui Xie**, Wenzhan Song, Tao Zhao, and Kurt Marfurt. Optimal  $\ell_q$  norm regularization for sparse reflectivity inversion. *2017 SEG International Exposition and Annual Meeting*. Society of Exploration Geophysicists, (2017): 677-681.
- [6] Nural, Mustafa V., Michael E. Cotterell, Hao Peng, **Rui Xie**, Ping Ma, and John A. Miller. Automated predictive big data analytics using ontology based semantics. *International Journal of Big Data*, 2.2 (2015): 43-56.

### UNDER REVIEW OR IN PREPARATION

- [7] **Rui Xie**, T. N. Sriram, Wei Biao Wu, and Ping Ma. Online sequential leveraging sampling method for streaming data. Under review, *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*.
- [8] **Rui Xie**, Mengrui Zhang, Prahatha Venkatraman, Xinlian Zhang, Gaonan Zhang, Robert Carmer, Skylar A. Kantola, Chi Pui Pang, Ping Ma, Mingzhi Zhang, Wenxuan Zhong, and Yuk Fai Leung. Normalization of large-scale behavioural data collected from zebrafish. Under revision, *Scientific Reports*.
- [9] **Rui Xie**, Zengyan Wang, Shuyang Bai, Ping Ma, and Wenxuan Zhong. Online decentralized leveraging sampling for streaming multivariate time series. Under review, *The 22nd International Conference on Artificial Intelligence and Statistics (AISTATS 2019)*.
- [10] Fangyu Li, **Rui Xie**, Ying Hu, WenZhan Song. Resampling-based seismic signal enhancement via randomized local reconstruction. Under revision, *IEEE Geoscience and Remote Sensing Letters*.
- [11] Xin Xing, Di Xiao, **Rui Xie**, and Wenxuan Zhong. Model-based dictionary learning: sparse coding beyond Gaussian independent model. Under review, *The 22nd International Conference on Artificial Intelligence and Statistics (AISTATS 2019)*.
- [12] Lu, Yanfei, **Rui Xie**, and Steven Y. Liang. Extraction of weak fault using combined dual-tree wavelet and improved MCA for rolling bearings. Under revision, *The Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems*.

- [13] Fangyu Li, **Rui Xie**, WenZhan Song, and Hui Chen. Optimal seismic reflectivity inversion: data-driven  $\ell_{p,q}$  norm sparsity regularization. Under revision, *IEEE Geoscience and Remote Sensing Letters*.
- [14] Lu, Yanfei, **Rui Xie**, and Steven Y. Liang. Intelligent online learning diagnostic model for bearing fault detection. Under review, *Mechanical Systems and Signal Processing*.
- [15] **Rui Xie**, Fangyu Li, Zengyan Wang, and WenZhan Song. Sub-sampled Newton method for full-waveform inversion. In preparation.
- [16] Cheng Meng, **Rui Xie**, Xinlian Zhang, Abhyuday Mandal, Wenxuan Zhong, and Ping Ma. Design based subsampling in big data with application to robust linear regression. In preparation.
- [17] **Rui Xie**, Wenxuan Zhong, and Ping Ma. Leverage Sampling for Spatial Data. In preparation.

#### AWARDS & HONORS

- **ICSA Student Paper Award**, International Chinese Statistical Association. Jun 2018
- **Travel Grant**, The 2018 Applied Statistics Symposium. Jun 2018  
International Chinese Statistical Association (ICSA), New Brunswick, NJ, USA
- **Mu Sigma Rho**: The National Statistics Honorary Society. May 2018
- **Travel Grant**, May Institute: Computation and statistics for mass spectrometry and proteomics. Apr 2018  
Northeastern University, Boston, MA, USA
- **Georgia Statistics Day Student Poster Award**. Oct 2017  
Emory University, Atlanta, GA, USA
- **Outstanding Teaching Award**, University of Georgia. May 2017

#### PRESENTATION

- Invited Presentation, ICSA 2018 Applied Statistics Symposium. Jun 2018  
*Online sequential leveraging sampling method for streaming time series data.*  
New Brunswick, NJ, USA
- Poster, The University of Georgia/Clemson University Joint Seminar. Mar 2018  
*Sequential leveraging sampling method for streaming time series data.*  
University of Georgia, Athens, GA, USA
- Poster, Georgia Statistics Day. Oct 2017  
*Sequential leveraging sampling method for streaming data.*  
Emory University, Atlanta, GA, USA
- Invited Presentation, the Center for Cyber-Physical Systems (CCPS), UGA. Mar 2017  
*Large scale randomized learning with applications in full waveform inversion.*  
Athens, GA, USA

#### TEACHING ACTIVITIES

##### GUEST LECTURE

##### Graduate Courses

- CSEE 8300, Principles of Cyber-Physical Systems Fall 2017
- STAT 6280, Multivariate Time Series Analysis Spring 2015

##### Undergraduate Courses

- FYOS 1001, First-Year Odyssey Seminars Fall 2017
- STAT 4280, Applied Time Series Analysis Spring 2016

##### TEACHING ASSISTANT

##### Graduate Courses

- STAT 6430, Design and Analysis of Experiments Spring 2018
- STAT 6315, Statistical Methods for Researchers Fall 2016 & Fall 2013
- STAT 8910, Statistical Seminar Fall 2016
- STAT 6420, Applied Linear Models Fall 2015
- STAT 6280, Multivariate Time Series Analysis Spring 2015
- STAT 6510, Mathematical Statistics Fall 2014
- STAT 6360, Statistical Software Programming Summer 2014

##### Undergraduate Courses

- STAT 2000, Introductory Statistics Fall 2018 & Spring 2014
- STAT 4220, Applied Experimental Designs Fall 2017 & Spring 2016
- STAT 4110H, Honors Applied Statistics Spring 2016

#### PROFESSIONAL ACTIVITIES & AFFILIATIONS

##### REVIEW FOR JOURNAL

Statistica Sinica  
 Statistical Applications in Genetics and Molecular Biology  
 Sankhya B

**REVIEW FOR BOOK CHAPTER**

“Handbook of Research on Applied Cybernetics and Systems Science,” *IGI Global*, 2017

**ORGANIZATION MEMBERSHIP**

American Statistical Association (ASA)	2017 – Present
International Chinese Statistical Association (ICSA)	2017 – Present
Institute of Electrical and Electronics Engineers (IEEE)	2018 – Present
IEEE Signal Processing Society	2018 – Present

**OUTREACH  
 ACTIVITIES**

▪ Volunteer, Georgia Statistics Day 2018 University of Georgia, Athens, GA, USA	Oct 2018
▪ Invited Speaker, Lambert High School Suwanee, GA, USA	Feb 2018
▪ Invited Speaker, The Gwinnett School of Mathematics, Science, and Technology, Lawrenceville, GA, USA	Nov 2017
▪ Volunteer, Georgia Statistics Day 2015 University of Georgia, Athens, GA, USA	Oct 2015

**SKILLS**

R, MATLAB, Python, C,  $\LaTeX$ , Julia, Linux bash, Mathematica, Stata, EViews.  
 Distributed computing & Parallel computing.