

# 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, Distributed and Decentralized Computing, and 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**, Zengyan Wang, Shuyang Bai, Ping Ma, and Wenxuan Zhong. Online decentralized leveraging sampling for streaming multivariate time series. Accepted. *The 22nd International Conference on Artificial Intelligence and Statistics (AISTATS 2019)*.
- [2] **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)*.
- [3] Fangyu Li, **Rui Xie**, WenZhan Song, and Hui Chen. Optimal seismic reflectivity inversion: data-driven  $\ell_p$ -loss- $\ell_q$ -regularization sparse regression. Accepted, *IEEE Geoscience and Remote Sensing Letters*, (2018). PP. 1-5. 10.1109/LGRS.2018.2881102.
- [4] 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.
- [5] Lu, Yanfei, **Rui Xie**, and Steven Y. Liang. Adaptive online dictionary learning for bearing fault diagnosis. *The International Journal of Advanced Manufacturing Technology*, (2018). <https://doi.org/10.1007/s00170-018-2902-0>.
- [6] 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.
- [7] 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.
- [8] 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

- [9] **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)*.
- [10] **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. Minor revision, *PLOS One*.
- [11] 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*.

- [12] 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*.
- [13] 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*.
- [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

- **ASA Computing/Graphics Student Paper Award**, American Statistical Association. Jan 2019
- **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

	<ul style="list-style-type: none"> <li>▪ STAT 2000, Introductory Statistics</li> <li>▪ STAT 4220, Applied Experimental Designs</li> <li>▪ STAT 4110H, Honors Applied Statistics</li> </ul>	<p>Fall 2018 &amp; Spring 2014</p> <p>Fall 2017 &amp; Spring 2016</p> <p>Spring 2016</p>
<b>PROFESSIONAL ACTIVITIES &amp; AFFILIATIONS</b>	<p><b>REVIEW FOR JOURNAL</b></p> <p>Statistica Sinica</p> <p>Statistical Applications in Genetics and Molecular Biology</p> <p>Sankhya B</p> <p><b>REVIEW FOR BOOK CHAPTER</b></p> <p>“Handbook of Research on Applied Cybernetics and Systems Science,” <i>IGI Global</i>, 2017</p> <p><b>ORGANIZATION MEMBERSHIP</b></p> <p>American Statistical Association (ASA)</p> <p>International Chinese Statistical Association (ICSA)</p> <p>Institute of Electrical and Electronics Engineers (IEEE)</p> <p>IEEE Signal Processing Society</p>	<p>2017 – Present</p> <p>2017 – Present</p> <p>2018 – Present</p> <p>2018 – Present</p>
<b>OUTREACH ACTIVITIES</b>	<ul style="list-style-type: none"> <li>▪ Volunteer, Georgia Statistics Day 2018 University of Georgia, Athens, GA, USA</li> <li>▪ Invited Speaker, Lambert High School Suwanee, GA, USA</li> <li>▪ Invited Speaker, The Gwinnett School of Mathematics, Science, and Technology, Lawrenceville, GA, USA</li> <li>▪ Volunteer, Georgia Statistics Day 2015 University of Georgia, Athens, GA, USA</li> </ul>	<p>Oct 2018</p> <p>Feb 2018</p> <p>Nov 2017</p> <p>Oct 2015</p>
<b>SKILLS</b>	<p>R, MATLAB, Python, C, <math>\LaTeX</math>, Julia, Linux bash, Mathematica, Stata, EViews.</p> <p>Distributed computing &amp; Parallel computing.</p>	