

CONTACT
INFORMATION

Department of Mathematical Sciences
Michigan Tech
1400 Townsend Drive
Houghton, MI 49931-1295

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EDUCATION

- Ph.D. in Statistics, **University of Illinois at Urbana-Champaign**, USA, August 2014.
Thesis adviser: Dr. Xiaofeng Shao
- M.S. in Statistics, **Seoul National University**, Seoul, Korea, February 2009.
- B.S. in Mathematics / B.A. in Economics, **Seoul National University**, Seoul, Korea, August 2006.

MAIN RESEARCH
INTERESTS

- Time Series, Econometrics, Resampling Methods, Mixed Frequency Data, Cyber Risk Management.

EMPLOYMENT

- Assistant Professor, **Michigan Tech**, August 2014 –

CURRENT GRANT
SUPPORT

- “CPS: Medium: Collaborative Research: An Actuarial Framework of Cyber Risk Management for Power Grids,” PI: Dr. Chee-Wooi Ten, Role: co-PI, NSF, 09/01/2017-08/31/2020, Awarded. The portion under my responsibility is \$152,998.
- “Nascent Adhesion-Based Mechano-transmission for Extracellular Matrix Stiffness Sensing, PI: Dr. Sangyoon Joshua Han, Role: Statistical Consultant, NIH-R15, 09/01/2019-08/31/2022, Awarded.

SELECTED

HONORS, AWARDS,
AND FELLOWSHIPS

- Outstanding Faculty Research Award (Junior level), Department of Mathematical Sciences, Michigan Tech, 2018
- ASA Nonparametric Statistics Section Student Paper Award, JSM, 2013
- IMS Travel Award, 2013
- Finalist receiving honorable mention for the Horace W. Norton prize for outstanding thesis in Statistics, 2013
- Graduate College for the Fall 2013 Conference Travel Award, UIUC, 2013
- BK21 Fellowship, Korea Government, 2007-2009
- Hong Sung Dae Scholarship, SNU, 2005
- Scholarship for Superior Academic Performance, SNU, 2002-2005

PUBLICATIONS IN
REFEREEDJOURNALS AND
PROCEEDINGS

9. Koji Yamashita, Chee-Wooi Ten, **Yeonwoo Rho**, Lingfeng Wang, Wei Wei, and Andrew Francis Ginter (2020+). **Measuring Systemic Risk of Switching Attacks Based on Cybersecurity Technologies in Substations**. *IEEE Transactions on Power Systems*, Accepted.
8. Zhiyuan Yang, Yun Liu, Meghan Campbell, Chee-Wooi Ten, **Yeonwoo Rho**, Lingfeng Wang, and Wei Wei (2020+). **Premium Calculation for Insurance Business Based on Cyber Risks in IP-Based Power Substations**. *IEEE Access*. Accepted.
7. Xing Ling, **Yeonwoo Rho**, and Chee-Wooi Ten (2019). **Predicting Global Trend of Cybersecurity on Continental Honeynets Using Vector Autoregression**. *Proceedings of 2019 IEEE PES Innovative Smart Grid Technologies Europe (ISGT-Europe)*, 1–5.

6. **Yeonwoo Rho** and Xiaofeng Shao (2019). **Bootstrap-Assisted Unit Root Testing with Piecewise Locally Stationary Errors**. *Econometric Theory*, 35(1), 142–166. Also available at [arXiv](#).
5. Yun Liu and **Yeonwoo Rho** (2019). **On the Choice of Instruments in Mixed Frequency Specification Tests**. *Communications in Statistics - Theory and Methods*, 48(24), 6098–6118. Also available at [arXiv](#).
4. Xiaoyu Liang, Qiuying Sha, **Yeonwoo Rho**, and Shuanglin Zhang (2018), **HCM: A Hierarchical Clustering Method for Joint Analysis of Multiple Phenotypes**. *Genetic Epidemiology*, 42(4), 344–353.
3. Henriette Groenvik and **Yeonwoo Rho** (2018). **A Self-Normalized Approach to the Specification Test of Mixed Frequency Models**. *Communications in Statistics - Theory and Methods*, 47(8), 1913–1922.
2. **Yeonwoo Rho** and Xiaofeng Shao (2015). **Inference for Time Series Regression Models With Weakly Dependent and Heteroscedastic Errors**. *Journal of Business & Economic Statistics*, 33(3), 444–457.
1. **Yeonwoo Rho** and Xiaofeng Shao (2013). **Improving the Bandwidth-Free Inference Methods by Prewhitening**. *Journal of Statistical Planning and Inference*, 143(11), 1912–1922.

PAPERS UNDER
REVIEW

- **Yeonwoo Rho**, Yun Liu, and Hie Joo Ahn. Revealing Clustering Structures with Mixed Sampling Frequencies. Submitted. Available at [Arxiv](#). This manuscript will also appear on *Federal Reserve Working Paper Series* soon.
- Zhaoxi Liu, Wei Wei, Lingfeng Wang, Chee-Wooi Ten, and **Yeonwoo Rho**. An Actuarial Framework for Power System Reliability Considering cybersecurity Threats. Under revision.

PRESENTATIONS

20. *Revealing Clustering Structures with Mixed Sampling Frequencies*, Invited for a contributed topic session by the local organizing committee. Bernoulli-IMS 10th World Congress in Probability and Statistics, Seoul, Korea, July 2021.
19. *Revealing Clustering Structures with Mixed Sampling Frequencies*, Invited. The 4th International Conference on Econometrics and Statistics, Seoul, Korea, June 2021.
18. *Revealing Clustering Structures with Mixed Sampling Frequencies*, The 29th Annual Meeting of the Midwest Econometrics Group, Columbus, OH, October 2019
17. *Panel Nonparametric MIDAS Model: A Clustering Approach*, Invited. The 11th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2018), Pisa, Italy, December 2018.
16. *A Fixed-b Asymptotics of the Dependent Wild Bootstrap for Irregularly Spaced Time Series*, Invited. SNU International Statistics Workshop, Seoul, Korea, January 2018.
15. *A Fixed-b Asymptotics of the Dependent Wild Bootstrap for Irregularly Spaced Time Series*, The 27th Annual Meeting of the Midwest Econometrics Group, College Station, TX, October 2017.
14. *A Fixed-b Asymptotics of the Dependent Wild Bootstrap for Irregularly Spaced Time Series*, 47th Annual Meetings of Illinois Economics Association, Chicago, IL, October 2017.

13. *A Fixed-b Asymptotics of the Dependent Wild Bootstrap for Irregularly Spaced Time Series*, The Third Kliakhandler Conference, Houghton, MI, August 2017.
12. *Bootstrap-Assisted Unit Root Testing With Piecewise Locally Stationary Errors*, Invited. The 1st International Conference on Econometrics and Statistics (EcoSta 2017), Hong Kong, June 2017.
11. *A Fixed-b Asymptotics of the Dependent Wild Bootstrap for Irregularly Spaced Time Series*, Statistics and Applied Math Group Seminar, Houghton, MI, March 2017.
10. *A Self-Normalized Approach to the Specification Test of Mixed Frequency Models*, The 26th Annual Meeting of the Midwest Econometrics Group, Champaign, IL, October 2016.
9. *A Self-Normalized Approach to a Unit Root Testing*, Joint Statistical Meetings, Chicago, IL, July 2016.
8. *Bootstrap-Assisted Unit Root Testing With Piecewise Locally Stationary Errors*, Joint Statistical Meetings, Seattle, WA, August 2015.
7. *Inference for Time Series Regression Models With Weakly Dependent and Heteroscedastic Errors*, 2015 Fifth International IMS-FIPS Workshop, New Brunswick, NJ, June 2015.
6. *Inference for Time Series Regression Models With Weakly Dependent and Heteroscedastic Errors*, Korean Statistical Society Spring Meeting, Cheongju, South Korea, May 2015.
5. *Unit Root Testing with Piecewise Locally Stationary Errors*, Robert Bohrer Memorial Workshop in Statistics, Champaign, IL, November 2013.
4. *Unit Root Testing with Piecewise Locally Stationary Errors*, Midwest Econometrics Group Meetings, Bloomington, IN, October 2013.
3. *Inference for Time Series Regression Models with Nonstationary Heteroscedastic Errors*, Joint Statistical Meetings, Montreal, Canada, August 2013.
2. *Inference for Linear Regression Models with Locally Stationary Errors*, Poster presentation. Midwest Statistics Research Colloquium, Madison, WI, March 2013.
1. *Inference for Linear regression Models with Locally Stationary Errors*, Robert Bohrer Memorial Workshop in Statistics, Champaign, IL, November 2012.

PRESENTATIONS
GIVEN BY
STUDENTS

- Koji Yamashita
 1. *Predicting Global Trend of Cybersecurity on Continental Honeynets Using Vector Autoregression*, 2019 IEEE PES Innovative Smart Grid Technologies Europe (ISGT-Europe), Bucharest, Romania, September 2019.
- Yun (Anna) Liu
 3. *Panel Nonparametric MIDAS Model: A Clustering Approach*, The 28th Annual Meeting of the Midwest Econometrics Group, Madison, WI, October 2018.
 2. *On the Choice of Instruments in Mixed Frequency Specification Tests*, Joint Statistical Meetings, Vancouver, Canada, August 2018.
 1. *On the Choice of Instruments in Mixed Frequency Specification Tests*, 47th Annual Meetings of Illinois Economics Association, Chicago, IL, October 2017.

- Meghan Campbell
 1. *A Loss Model for Cyber-Security Insurance in Electrical Grids*, Poster, The 2018 Undergraduate Research Symposium, Houghton, MI, March 2018.

MENTORING

- Xing Ling. PhD in Statistics, in progress.
- Siyu Wang, MS in Statistics, in progress.
- Yun (Anna) Liu. PhD in Statistics, Aug 2019.
MS in Mathematical Sciences, Dec 2015.
- Meghan Campbell. BS in Mathematical Sciences with concentration in Actuarial Sciences, May 2018.
- Teresa Woods. MS in Mathematical Sciences, Co-advised with Dr. Shari Stockero, May 2017.
- Henriette Groenvik, MS in Mathematical Sciences, May 2016.

THESIS COMMITTEE

- Hannah Cunningham. MS in Kinesiology, in progress.
- Koji Yamashita. PhD in Electrical Engineering, in progress.
- Zhiyuang Yang (Dec 2018). PhD in Electrical Engineering.
- Aref Majdara (May 2018). PhD in Electrical Engineering.
- Xiaoyu Liang (May 2018). PhD in Statistics.
- Jing Han (Dec 2015). MS in Economics.
- Shuaimin Kang (May 2015). MS in Mathematical Sciences.

TEACHING EXPERIENCE

- Online Course Development
 - Certified for completing “Managing Your Online Classrooms” by Magna Publications (Dec 30, 2019).
 - MA5781 Time Series Analysis, MTU (2019 Summer)
 - MA5980 Statistical Data Mining, MTU (2020 Summer)
- Instructor
 - MA5980 Statistical Data Mining, MTU (2020 Spring)
 - MA4780/5781 Time Series Analysis, MTU (2016, 2017, 2018, 2019, 2020 Spring)
 - MA5741 Multivariate Statistics, MTU (2015, 2019 Spring)
 - MA5731 Linear Models, MTU (2016, 2019 Fall)
 - MA3710 Engineering Statistics, MTU (2014 Fall / 2015 Spring / 2015 Fall / 2016 Fall / 2017 Fall / 2018 Fall)
 - STAT200 Statistical Analysis, UIUC (2013 Fall / 2012 Fall / 2011 Spring)
- Guest Lecturer
 - UN5550 Introduction to Data Science, Guest Lectures for Introductory Statistics, MTU (2015, 2016 Fall)

DEPARTMENTAL
SERVICE

- Wrote and graded qualifying exams and comprehensive exams.
- Served on recruitment committee (2014–2015, 2017–2018, 2019–2020)
- Served on undergraduate committee (2015–2016)
- Served on graduate committee (2016–2017)

UNIVERSITY
SERVICE

- Reviewed the REF-SEED grant applications (2016)

CONSULTING
EXPERIENCE

- Illinois Statistics Office, Department of Statistics, University of Illinois at Urbana-Champaign, Summer 2011-Spring 2013

REFEREE FOR
JOURNALS

- Communications in Statistics - Theory and Methods
- Computational Statistics and Data Analysis
- Econometric Theory
- Electronic Journal of Statistics
- Journal of Korean Statistical Society
- Journal of Multivariate Statistics
- Journal of Nonparametric Statistics
- Journal of Statistical Planning and Inference
- Journal of the American Statistical Association
- Journal of Time Series Analysis
- Statistics and Probability Letters
- The Econometrics Journal

REFERENCE

Available Upon Request.