Yeonwoo Rho, Ph.D. **Curriculum Vitæ**

CONTACT INFORMATION

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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 Analysis, p-value Combination, Heavy-tailed Distribution, Econometrics, Resampling Methods, Mixed Frequency Data, Cyber Risk Management.

EMPLOYMENT

- Associate Professor, Michigan Tech, August 2020 – present.
- Assistant Professor, Michigan Tech, August 2014 – August 2020.

CURRENT AND PAST GRANT SUPPORT

- "Informational flow from mechanosensing to signaling for extracellular matrix stiffness sensing," PI: Dr. Sangyoon Joshua Han, Role: Co-PI, NIH-R15, 04/01/2023–03/31/2026, Awarded.
- "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.
- "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 sole responsibility is $152,998.

SELECTED HONORS AND AWARDS

- 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

PUBLICATIONS IN REFEREED JOURNALS AND PROCEEDINGS

* INDICATES PHD, MS, OR UNDERGRADUATE STUDENTS UNDER MY DIRECT SUPERVISION.

†INDICATES THE CORRESPONDING AUTHOR.

- **Yeonwoo Rho**†. Heavy-Tailed p-value Combinations from the Perspective of Extreme Value Theory, Under Review.
- Siyu Wang* and **Yeonwoo Rho**†. Multiple Testing Correction for Mean Tests in Time Series Rolling Window Analysis With an Application of GWAS Methods, Under Review.
- Songhyun Kim, Chae Young Lim, and **Yeonwoo Rho**† (2024). Spatio-Temporal Analysis of Dependent Risk with an Application to Cyberattacks Data. *The Annals of Applied Statistics*, 18(4), 3549–3569.
- Mohanish Chandurkar, Nikhil Mittal, Shaina Royer-Weeden, Steven Lehmann, Etienne Michels, Samuel Haarman, **Yeonwoo Rho**, and Sangyoon Han† (2024). Transient Low Shear Stress Preconditioning Influences Long-term Endothelial Traction and Alignment

under High Shear Flow. *American Journal of Physiology-Heart and Circulatory Physiology*, 326(5), H1180–H1192.

- Xing Ling* and **Yeonwoo Rho**† (2022). Stable Combination Tests. *Statistica Sinica*, 32, 641–644.
- Zhaoxi Liu, Wei Wei, Lingfeng Wang†, Chee-Wooi Ten, and **Yeonwoo Rho** (2021). An Actuarial Framework for Power System Reliability Considering Cybersecurity Threats. *IEEE Transactions on Power Systems*, 36(2), 851–864.
- Koji Yamashita, Chee-Wooi Ten†, **Yeonwoo Rho**, Lingfeng Wang, Wei Wei, and Andrew Ginter (2020). Measuring Systemic Risk of Switching Attacks based on Deployed Technologies in Substations. *IEEE Transactions on Power Systems*, 35(6), 4206–4219.
- Zhiyuan Yang, Anna Y. Liu*, Meghan Campbell*, Chee-Wooi Ten†, **Yeonwoo Rho**, Lingfeng Wang, and Wei Wei (2020). Premium Estimate of Cyber Insurance based on Substation Switching Attack. *IEEE Access*, 8, 78890–78900.
- 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.
- **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.
- 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.
- 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.
- 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.
- **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.
- **Yeonwoo Rho**†and Xiaofeng Shao (2013). Improving the Bandwidth-Free Inference Methods by Prewhitening. *Journal of Statistical Planning and Inference*, 143(11), 1912–1922.

Other Available Working Papers

- **Yeonwoo Rho**, Yun Liu, and Hie Joo Ahn. Revealing Cluster Structures Based on Mixed Sampling Frequencies.

Other Available Manuscripts

- **Yeonwoo Rho**. On the Mixed Data Sampling Models (in Korean). *The Korean Statistical Society News Letter*. April 2020.

Presentations

- *Heavy-tailed p-value combinations from the perspective of extreme value theory,* Department of Statistics, Seoul National University, April 2024.
- *Heavy-tailed p-value combinations from the perspective of extreme value theory,* Department of Mathematics, Tulane University, February 2024.
- *Heavy-tailed p-value combinations from the perspective of extreme value theory,* Department of Management Science, University of Miami, February 2024.
- *Heavy-tailed p-value combinations from the perspective of extreme value theory,* Invited. IMS International Conference on Statistics and Data Science (ICSDS), Florence, Italy, December 2022.
- *Unifying Additive p-value Combination Tests with Regularly Varying Tails,* Korean Statistical Society Spring Meeting, Seoul, Korea, June 2022.
- *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 (online), July 2021.
- *Revealing Clustering Structures with Mixed Sampling Frequencies,* Invited. The 4th International Conference on Econometrics and Statistics, Seoul, Korea (online), June 2021.
- *Revealing Clustering Structures with Mixed Sampling Frequencies,* The 29th Annual Meeting of the Midwest Econometrics Group, Columbus, OH, October 2019
- *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.
- *A Fixed-b Asymptotics of the Dependent Wild Bootstrap for Irregularly Spaced Time Series,* Invited. SNU International Statistics Workshop, Seoul, Korea, January 2018.
- *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.
- *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.
- *A Fixed-b Asymptotics of the Dependent Wild Bootstrap for Irregularly Spaced Time Series,* The Third Kliakhandler Conference, Houghton, MI, August 2017.
- *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.
- *A Fixed-b Asymptotics of the Dependent Wild Bootstrap for Irregularly Spaced Time Series,* Statistics and Applied Math Group Seminar, Houghton, MI, March 2017.
- *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.
- *A Self-Normalized Approach to a Unit Root Testing,* Joint Statistical Meetings, Chicago, IL, July 2016.
- *Bootstrap-Assisted Unit Root Testing With Piecewise Locally Stationary Errors,* Joint Statistical Meetings, Seattle, WA, August 2015.

- *Inference for Time Series Regression Models With Weakly Dependent and Heteroscedastic Errors,* 2015 Fifth International IMS-FIPS Workshop, New Brunswick, NJ, June 2015.
- *Inference for Time Series Regression Models With Weakly Dependent and Heteroscedastic Errors,* Korean Statistical Society Spring Meeting, Cheongju, Korea, May 2015.
- *Unit Root Testing with Piecewise Locally Stationary Errors,* Robert Bohrer Memorial Workshop in Statistics, Champaign, IL, November 2013.
- *Unit Root Testing with Piecewise Locally Stationary Errors,* Midwest Econometrics Group Meetings, Bloomington, IN, October 2013.
- *Inference for Time Series Regression Models with Nonstationary Heteroscedastic Errors,* Joint Statistical Meetings, Montreal, Canada, August 2013.
- *Inference for Linear Regression Models with Locally Stationary Errors,* Poster presentation. Midwest Statistics Research Colloquium, Madison, WI, March 2013.
- *Inference for Linear regression Models with Locally Stationary Errors,* Robert Bohrer Memorial Workshop in Statistics, Champaign, IL, November 2012.

Presentations Given by Students

- Yi Xu
  - *Functional change point estimation using random projection with an application to cell adhesion data,* Joint Statistical Meetings, Portland, OR, August 2024.
- Xing Ling
  - *Unifying Additive p-value Combination Tests with Regularly Varying Tails,* Joint Statistical Meetings, Washington D.C., August 2022.
- Koji Yamashita
  - *Predicting Global Trend of Cybersecurity on Continental Honeynets Using Vector Autoregressoin,* 2019 IEEE PES Innovative Smart Grid Technologies Europe (ISGT-Europe), Bucharest, Romania, September 2019.
- Yun (Anna) Liu
  - *Panel Nonparametric MIDAS Model: A Clustering Approach,* The 28th Annual Meeting of the Midwest Econometrics Group, Madison, WI, October 2018.
  - *On the Choice of Instruments in Mixed Frequency Specification Tests,* Joint Statistical Meetings, Vancouver, Canada, August 2018.
  - *On the Choice of Instruments in Mixed Frequency Specification Tests,* 47th Annual Meetings of Illinois Economics Association, Chicago, IL, October 2017.
- Meghan Campbell
  - *A Loss Model for Cyber-Security Insurance in Electrical Grids,* Poster, The 2018 Undergraduate Research Symposium, Houghton, MI, March 2018.

Mentoring

- Yi Xu. PhD in Statistics, in progress.
- Caleb Hiltunen. PhD in Statistics, in progress.
- Kazeem Kareem. Sep 2021 – May 2023.
- Xing Ling. Feb 2018 – Oct 2022.
- Siyu Wang, MS in Statistics, Dec 2022.
- 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

- Songhyun Kim. PhD in Statistics, Seoul National University, Korea, Feb 2024.
- Koji Yamashita. PhD in Electrical Engineering, Dec 2020.
- Hannah Cunningham. MS in Kinesiology, Aug 2020.
- Zhiyuang Yang. PhD in Electrical Engineering, Dec 2018.
- Aref Majdara. PhD in Electrical Engineering, May 2018.
- Xiaoyu Liang. PhD in Statistics, May 2018.
- Jing Han. MS in Economics, Dec 2015
- Shuaimin Kang. MS in Mathematical Sciences, Dec 2015.

Synergistic Activities

- Reviewer (alphabetical order): Communications in Statistics - Theory and Methods, Computational Statistics, 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 Business and Economic Statistics, Journal of Time Series Analysis, Power Engineering Letters, Statistica Sinica, Statistics and Probability Letters, The Econometrics Journal.
- Co-organizer, Bayesian Inference in Statistics and statistical Genetics, Houghton, MI, 2017.
- Statistical consulting at University of Illinois Statistics Office during 2011-2013 as well as unofficially in Michigan Tech.