

# Wei Ning, Ph.D.

wning@bgsu.edu | | O: 419-372-7462 | | <https://www.linkedin.com/in/wning/>

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## EDUCATION

- **Syracuse University, Syracuse, NY, USA**  
*PhD in Statistics* Aug 2006  
*Advisor: Prof. Hyune-Ju Kim*
- **Syracuse University, Syracuse, NY USA**  
*MA in Statistics* Aug 2002
- **University of Science and Technology of China, Hefei, P.R.China.**  
*BS in Mathematics* July 1999  
*BA in Statistics and Finance* July 1999

## RESEARCH INTERESTS

Change Point Analysis, Sequential Analysis, High-dimensional Data Analysis, Nonparametric Statistical Methods, Survival Analysis, Causal Inference, Meta Analysis, Time Series Analysis.

## PROFESSIONAL EXPERIENCES

- **Professor of Research Excellence** May 2023 - Present  
*Department of Mathematics and Statistics*  
*Bowling Green State University, Bowling Green, OH*
- **Professor** May 2018 - Present  
*Department of Mathematics and Statistics*  
*Bowling Green State University, Bowling Green, OH*
- **Associate Professor** May 2012 - May 2018  
*Department of Mathematics and Statistics*  
*Bowling Green State University, Bowling Green, OH*
- **Assistant Professor** Aug 2006 - May 2012  
*Department of Mathematics and Statistics*  
*Bowling Green State University, Bowling Green, OH*
- **Visiting Associate Professor** Aug 2013 - Sept 2014  
*Department of Biostatistics*  
*University of Michigan, Ann Arbor, MI*
- **Visiting Associate Professor** Aug 2013 - Sept 2014  
*Department of Statistics*

University of Michigan, Ann Arbor, MI

- **Graduate Teaching Assistant**

Department of Mathematics

Syracuse University, Syracuse, NY

Sept 2000 - May 2006

## RESEARCH GRANTS

- Simons Foundation, Mathematics and Physical Sciences-Collaboration Grants for Mathematicians. PI. *Empirical-Likelihood-Based Sequential Change point Detection Methods for High Dimensional Data*. \$42,000. 9/2020-9/2025.
- 1-year Research Incentive Grant, Bowling Green State University. PI. *A New Change Point Model Approach for Detection of DNA Copy Number Variations in aCGH Data*. \$10,000. 9/2009-9/2010.
- 1-year Research Incentive Grant, Bowling Green State University. PI. *Topics of the Generalized Lambda Distribution Family*. \$10,000. 9/2008-9/2009.
- 1-year Research Incentive Grant, Bowling Green State University. PI. *A New Approach to Study of the Statistical Epistasis between Genes*. \$10,000. 9/2007-9/2008.

## ARTICLES IN PEER REVIEWED JOURNALS

- [80] Wang, J. and **Ning, W.** (2023). Change-point detection of the Kumaraswamy skew-t distribution based on a modified information criterion. *Submitted*.
- [79] Wang, J. and **Ning, W.** (2023). Change point detection in length-biased Weibull distribution for random censored data based on modified information criterion. *Submitted*.
- [78] Njuki, J. and **Ning, W.** (2023). Energy-statistic Based modified information criterion for detecting change in distribution. *Submitted*.
- [77] Ratnasingam, S., Piyadi Gamage, R.D. and **Ning, W.** (2023). Empirical Likelihood Based Nonparametric Methods for One and Two-Sample UStatistics. Under review. *Journal of Statistical Theory and Practice*.
- [76] Li, S., Li, X., Tian, W. and **Ning, W.** (2023). Confidence intervals for heterogeneity in meta-analysis of the rare binary events based on empirical likelihood-type methods. Under review. *Contemporary Clinical Trials*.
- [75] Liu, T., Tian, W and **Ning, W.** (2023). Sequential probability ratio test for zero inflation in counting data. *CIS-Simulation and Computation*. 52(4), 1344-1360.
- [74] Tian, W., Pang, L., Tian, C. and **Ning, W.** (2023). Change point analysis for Kumaraswamy distribution. *Mathematics*. 11(3), 553.
- [73] Wang, P. and **Ning, W.** (2023). Nonparametric Shiryaev-Roberts Change-point Detection Procedures Based on Modified Empirical Likelihood. Revision submitted. *Journal of Applied Statistics*.

- [72] Wang, P. and **Ning, W.** (2022). Nonparametric CUSUM Change-point Detection Procedures Based on Modified Empirical Likelihood. Under review. *Journal of Statistical Computation and Simulation*.
- [71] Li, T., Tian, W. and **Ning, W.** (2022). Jackknife empirical likelihood for the mean of a zero-and-one inflated population. *Communications in Statistics-Theory and Methods*. In press.
- [70] Sharghi, S., Stoll, K. and **Ning, W.** (2022). Statistical inferences for missing data/causal inferences based on modified empirical likelihood. Under review.
- [69] Ratnasingam, S. and **Ning, W.** (2023). Change Point Detection in Linear Failure Rate Distribution Under Random Censorship. *Journal of Statistical Theory and Practice*. 17(1), 1-21.
- [68] Wang, P. and **Ning, W.** (2022). Sequential Change Point Detection for Skew Normal Distribution. *Sequential Analysis*. 41(3), 387-415.
- [67] Li, T., Tian, W. and **Ning, W.** (2022). Jackknife empirical likelihood for the mean of a zero-and-one inflated population. *Communications in Statistics-Theory and Methods*. In press.
- [66] Li, M., Tian, Y.B. and **Ning, W.** (2022). Modified information criterion for detecting changes in skew slash distribution. In press. *ROSE*.
- [65] Li, M, Ratnasingam, S. and **Ning, W.** (2022). Empirical-likelihood-Based Confidence Intervals for Quantile Regression Models with Longitudinal Data. *Journal of Statistical and Computation*. 92(12), 2536-2553.
- [64] Ratnasingam, S. and **Ning, W.** (2023). Confidence Intervals of Mean Residual Life function in Length-biased Sampling Based on Modified Empirical Likelihood. *Journal of Biopharmaceutical Statistics*. 33(1), 114-129.
- [63] Ratnasingam, S., Buzaianu, E and **Ning, W.** (2022). Modified Information Criterion for Testing Changes in Generalized Lambda Distribution Model Based on Confidence Distribution. *Communications for Statistical Applications and Methods*. 29(3), 301-317.
- [62] Stewart, P., **Ning, W.** (2021). Empirical-likelihood-based hypothesis tests for the means of two zero-inflated populations. In press. *CIS-Simulation and Computation*.
- [61] Ratnasingam, S. <sup>†</sup>, **Ning, W.** (2021). Monitoring Sequential Structural Changes in Penalized High-Dimensional Linear Models. *Sequential Analysis*. 40(3), 381-404.
- [60] Li, X., Tian, W. and **Ning, W.** (2021). Sequential Probability Ratio Test for the Skew Slash Distribution. *International Journal of Intelligent Technologies & Applied Statistics*. 14(1).
- [59] Ratnasingam, S. <sup>†</sup>, **Ning, W.** (2021). Change Point Detection in Three Parameter Weibull Distribution Based on Modified Information Criterion. *Environmental and Ecological Statistics*. 28(2), 303-322.
- [58] Ratnasingam, S. <sup>†</sup> and **Ning, W.** (2021). Sequential Change Point Detection for High-Dimensional Data using Non-convex Penalized Quantile Regression. *Biometrical Journal*. 63(3), 575-598.
- [57] Piyadi Gamage, R.D.<sup>†</sup>, **Ning, W.** (2021). Empirical Likelihood for Change Point Detection in Autoregressive Models. *Journal of the Korean Statistical Society*. 50(1),69-97.

- [56] **Ning, W.** and Wu, Y. (2021). Estimation of Common Change Point and Isolation of Changed Panels after Sequential Detection. *Journal of Statistical Theory and Practice*. 15(1).
- [55] Stewart, P.<sup>†</sup>, **Ning, W.** (2020). Confidence Intervals for Data Containing Many Zeros and Ones Based on Empirical-Likelihood-Type Methods. *Journal of Statistical Computation and Simulation*. 90(18), 3376-3399.
- [54] Ratnasingam, S. <sup>†</sup>,**Ning, W.** (2020). The Lomax-Linear Failure Rate Distribution. *Far East Journal of Theoretical Statistics*. 59(1), 35-58.
- [53] Wang, T., Tian, W. and **Ning, W.** (2020). Likelihood ratio test change-point detection in the skew slash distribution. In press. *CIS-Simulation and Computation*.
- [52] Stewart, P.<sup>†</sup>, **Ning, W.** (2020). Confidence Intervals for Data Containing Many Zero Observations Based on Empirical-Likelihood-Type Methods. *Computational Statistics*. 35, 2019–2042
- [51] Ratnasingam, S. <sup>†</sup>,**Ning, W.** (2020). Confidence Distributions for Skew Normal Change-point Model Based on Modified Information Criterion. *Journal of Statistical Theory and Practice*. 14(3), 1-21.
- [50] Piyadi Gamage, R.D. and **Ning, W.** (2020). Inference for Short-memory Time Series Models Based on Modified Empirical Likelihood. *Australian & New Zealand Journal of Statistics*. 62(3), 322-339.
- [49] Piyadi Gamage, R.D. and **Ning, W.** (2020). Inference for Long-memory Time Series Models Based on Modified Empirical Likelihood. *Austrian Journal of Statistics*. 49(5), 68-79.
- [48] Opperman, L. <sup>†</sup>,**Ning, W.** (2020). Goodness-of-Fit Test for Skew Normality Based on Energy Statistics. *Random Operators and Stochastic Equations*. 28(3), 227-236
- [47] Opperman, L. <sup>†</sup>,**Ning, W.** (2020). Sequential Probability Ratio Test for the Skew Normal Distribution. In press. *CIS-Simulation and Computation*.
- [46] Cai, X.<sup>†</sup>, Tian, Y.B. and **Ning, W.**(2019). Change-point Analysis of the Failure Mechanisms Based on Accelerated Life Tests. *Reliability Engineering & System Safety*. 188, 515-522.
- [45] Chen, Y.J. and **Ning, W.** (2019). Modified Information Criterion in Detecting Change Points in Exponential-Logarithmic Distribution. *Communications in Statistics-Simulation and Computation*. 48(7), 1996-2003.
- [44] Basalamah, D.<sup>†</sup>, Said, K.K., **Ning, W.** and Tian, Y.B. (2018). Modified Information Criterion for Linear Regression Change-point Model with Its Applications. In press. *Communications in Statistics-Simulation and Computation*.
- [43] Alghamdi, A.<sup>†</sup>, **Ning, W.** and Gupta, A.K. (2018) Statistical Inference for the Transformed Rayleigh Lomax Distribution with Progressive Type-II Right Censorship. *Electronic Journal of Applied Statistical Analysis*. 12(1), 209-222.
- [42] Alghamdi, A.<sup>†</sup>, **Ning, W.** and Gupta, A.K. (2018). An Information Approach for the Change Point Problem of the Rayleigh Lomax Distribution. *International Journal of Intelligent Technologies and Applied Statistics*. 11(4), 233-254.
- [41] Basalamah, D.<sup>†</sup>, **Ning, W.** and Gupta, A.K. (2018). The Beta Skew-t Distribution and Its Properties. *Journal of Statistical Theory and Practice*. 12(4), 837-860.

- [40] Said, K.K.<sup>†</sup>, **Ning, W.** and Tian, Y.B. (2017). Modified Information Criterion for Testing Changes in Skew Normal Model. *Brazilian Journal of Probability and Statistics*. 33(2), 280-300.
- [39] Said, K.K.<sup>†</sup>, **Ning, W.** and Tian, Y.B. (2017). Detecting Changes in Linear Regression Model with Skew Normal Errors. *Random Operators and Stochastic Equations*. 26(1), 1-10.
- [38] Said, K.K.<sup>†</sup>, Basalamah, D.<sup>†</sup>, **Ning, W.** and Gupta, A.K. (2017). The Kumaraswamy Skew-t Distribution and Its Related Properties. *Communications in Statistics-Simulation and Computation*. 47(8), 2409-2423.
- [37] Piyadi Gamage, R.D.<sup>†</sup>, **Ning, W.** and Gupta, A.K. (2017). Adjusted Empirical Likelihood for Long-memory Time Series Models. *Journal of Statistical Theory and Practice*. 11(1), 220-233.
- [36] Piyadi Gamage, R.D.<sup>†</sup>, **Ning, W.** and Gupta, A.K. (2017). Adjusted Empirical Likelihood for Time Series Models. *Sankhya B*. 79(2), 336-360.
- [35] Cai, X.<sup>†</sup>, Tian, Y.B. and **Ning, W.** (2017). Modified Information Approach for Detecting Two Change Points in Piecewise Linear Failure Rate Function. *Statistics & Probability Letters*. 125, 130-140.
- [34] Chen, Y.J.<sup>†</sup> and **Ning, W.** (2017). Tests for Smooth-Abrupt Changes with Applications. *Electronic Journal of Applied Statistical Analysis*. 10(1), 194-205.
- [33] Said, K.K.<sup>†</sup>, **Ning, W.** and Tian, Y.B. (2017). Likelihood Procedure for Testing Changes for Skew Normal Model With Application to Stock Returns. *Communications in Statistics-Simulation and Computation*. 46(9), 6790-6802.
- [32] Chen, Y.J.<sup>†</sup>, **Ning, W.** and Gupta, A.K. (2016). Empirical Likelihood Based Detection Procedure for Change Point in Mean Residual Life Functions Under Random Censorship. *Pharmaceutical Statistics*. 15, 246-254.
- [31] Cai, X.<sup>†</sup>, Said, K.K.<sup>†</sup> and **Ning, W.** (2016). Change-point Analysis with Bathtub Shape for the Exponential Distribution *Journal of Applied Statistics*. 43(15), 2740-2750.
- [30] Chen, Y.J.<sup>†</sup>, **Ning, W.** and Gupta, A.K. (2017). Jackknife Empirical Likelihood Test for Equality of Two Mean Residual Functions. *Communications in Statistics-Theory and Methods*. 46(7), 3111-3122. Accepted in 2015.
- [29] **Ning, W.** (2015). Probabilistic Representations of Matrix Variate Skew Normal Models. *Random Operators and Stochastic Equations*. 23(1), 21-29.
- [28] **Ning, W.**, Yeh, A. B., Wu, X.Q. and Wang, B.X. (2015). Distribution-Free Phase I Control Charts for Individual Observations Based on Empirical Likelihood Ratio. *Quality and Reliability Engineering International*, 31(1), 37-55.
- [27] Ngunken, G.<sup>†</sup> and **Ning, W.** (2015). Changepoint Detection Model based on Skew-Normal distributions for aCGH Data. *Journal of Computations & Modelling*, 5(2), 75-87.
- [26] Chen, Y.J.<sup>†</sup>, **Ning, W.** and Gupta, A.K. (2014). Jackknife Empirical Likelihood Methods on Testing for Equality of Variances of Two Samples. *Journal of Applied Statistics*, 42(1), 144-160.
- [25] Hasan, A.<sup>†</sup>, **Ning, W.** and Gupta, A.K. (2014). An Information Based Approach to Detecting the Change Point Under the non-central Skew t Model. *Sequential Analysis*, 33, 458-474.

- [24] Ngunkun, G.<sup>†</sup> and **Ning, W.** (2014). Information Approach for the Change Point Detection in the Skew Normal Distribution and Its Applications. *Sequential Analysis*, 33, 475-490.
- [23] Wu, X.Q., Zhang, S.G. and **Ning, W.** (2014). Empirical Likelihood Ratio Based Test for Change Point Detection in Linear Regression Model. *Acta Mathematicae Applicatae Sinica (English series)*. Accepted.
- [22] **Ning, W.** (2014). Empirical Likelihood Ratio Based Goodness-of-Fit Test for Generalized Lambda Distribution. *European Journal of Pure and Applied Mathematics*, 7 (1), 22-36.
- [21] Su, S., Hasan, A.<sup>†</sup> and **Ning, W.** (2013). The RS Generalized lambda based calibration model. *International Journal of Statistics and Probability*, 2(1), 101-107.
- [20] Zhao, H., Chen, H. and **Ning, W.** (2013). Changepoint Analysis by Modified Empirical Likelihood Method in Two-Phrase Linear Regression Models. *Open Journal of Applied Sciences*. 3(1B), 1-6.
- [19] Gupta, A.K., Aziz, M.A. and **Ning, W.** (2013). On Some Properties of the Unified Skew Normal Distribution. *Journal of Statistical Theory and Practice*, 7, 480-495.
- [18] **Ning, W.** and Ngunkeng, G. (2013). An Empirical Likelihood Ratio Based Goodness-of-Fit Test for the Skew Normality. *Statistical Methods and Applications*, 22, 209-226.
- [17] Zhang, H.H., Jing, H.F., **Ning, W.** and Gupta, A.K. (2013). Edgeworth Expansion of the Moment-based Test for Homogeneity in the Mixture NEF-QVF family. *Communications in Statistics-Simulation and Computation*, 42(10), 2281-2294.
- [16] Li, H.<sup>†</sup> and **Ning, W.** (2012). Multiple Comparisons with a Control Under Heteroscedasticity. *Journal of Applied Statistics*, 39(2), 2275-2283.
- [15] **Ning, W.** (2012). Empirical bayes method on changepoints estimation of tumor growth profiles in xenograft experiments. *Journal of Applied Statistical Science*. 19(2), 105-115.
- [14] Yan, C.J., Zhang, S.G. and **Ning, W.** (2012). Estimations of the Improper Linear Regression Models with Complex-valued Data. *Journal of The Graduate University of Chinese Academy of Sciences*, 29(2), 146-153.
- [13] **Ning, W.** (2012). The Empirical Likelihood Ratio Test for a Mean Change Point Model with a Linear Trend Followed by an Abrupt Change. *Journal of Applied Statistics*. 39(5), 947-961.
- [12] **Ning, W.** and Gupta, A.K. (2012). Matrix Variate Extended Skew Normal Distributions. *Random Operators and Stochastic Equations*. 20(4), 299-310.
- [11] **Ning, W.**, Pailden, P. and Gupta, A.K. (2011). The Empirical Likelihood Ratio Test for the Epidemic Change Point Model. *Journal of Data Science*. 10, 107-127.
- [10] **Ning, W.**, Gao, Y. C, and Dudewicz, E. J. *Chapter 8: Fitting Mixture Distributions Using A Mixture of Generalized Lambda Distributions with Computer Code*. Book chapter of Handbook of Fitting Statistical Distributions with R (Ed. by Duedewicz, E.J. and Karian, Z.A.). Publishing date: October 1, 2010. Boca Raton, FL: CRC Press.
- [9] Zhang, S.G., Liao, Y. and **Ning, W.** (2010). Asymptotic Properties of Quasi-Maximum Likelihood Estimates in Generalized Linear Models. *Communication in Statistics-Theory and Methods*. 40, 4417-4430.

- [8] **Ning, W.** and Zhao, L. (2010). A Moment-based Test for the Mixture Distributions With Small Sample Sizes and Its Application. *Far East Journal of Theoretical Statistics*. **33**(1), 23-39.
- [7] **Ning, W.**, Gupta, A. K., (2009) Change Point Analysis For Generalized Lambda Distributions. *Communications in Statistics-Simulation and Computation*. **38**, 1789-1802.
- [6] **Ning, W.**, Zhang, S. G. and Yu, C. (2009). A Moment-Based Test for the Homogeneity in Mixture Natural Exponential Family with Quadratic Variance Functions. *Statistics and Probability Letters*. **79**(6), 828-834.
- [5] **Ning, W.**, Gupta, A. K., Yu., C. and Zhang, S. G., (2009). A Moment-Based Test for Homogeneity in Finite Mixture Models. *Communication in Statistics–Theory and Methods*. **38**, 1371-1382.
- [4] **Ning, W.**, Gao, Y. C, and Dudewicz, E. J., (2008). Fitting Mixture Distributions Using Generalized Lambda Distributions and Comparisons with Normal Mixtures. *American Journal of Mathematical and Management Science*. Vol. 28, NOS. 1&2, 81-99.
- [3] **Ning, W.** and Kim, H. J., (2008). Residual Pattern Based Test for Interaction in Two-way ANOVA. *Biometrical Journal*, **50**(3), 431-445.
- [2] **Ning, W.**, (2008). Detecting an Unconditionally Identifiable Pattern in Two-way ANOVA. *Advances and Applications in Statistics*. **9**(2), 247-260.
- [1] **Ning, W.**, (2007). A Moment-based Test of Genetic Linkage Under Heterogeneity. *JP Journal of Biostatistics*, **1**(3), 267 - 281.

## STUDENTS SUPERVISED

- Dissertations

1. **Hong Li**, Ph.D. in statistics, 8/2007-9/2009. BGSU.

*Dissertation: Multiple Comparison Under Unequal Variances And Its Application To Dose Response Studies.*

Current position: Professor, Department of Mathematics, Cameron University, Oklahoma.

2. **Grace Ngunkeng**, Ph.D. in statistics, 8/2010-8/2013. BGSU.

*Dissertation: Statistical Analysis of the Skew Normal Distribution and Its Applications.*

Current Position: Associate Professor, Department of Mathematics, Kent State University, OH.

Past Position: Assistant Professor, School of Mathematics and Computer Science, Lake Superior State University, MI.

3. **Abeer Hasan**, Ph.D. in statistics, 8/2010-8/2013. Co-advised. BGSU.

*Dissertation: A Study of Skew  $t$  Distribution with Applications.*

**Current Position:** Associate Professor, Department of Mathematics and Statistics, North Carolina Agricultural and Technical State University, NC.

**Past Position:** Associate Professor, Department of Mathematics, Humboldt State University, CA.

4. **Ying-ju Chen**, Ph.D. in statistics, 8/2012-8/2015. Co-advised. BGSU.

**Dissertation:** *Jackknife Empirical Likelihood and Change Point Problems.*

**Current Position:** Associate Professor, Department of Mathematics, University of Dayton, OH.

**Past Position:** Visiting Assistant Professor, Department of Information & Analytics, Farmer School of Business, Miami University, OH.

5. **Ramadha Dilhani Piyadi Gamage**, Ph.D. in statistics, 8/2014-8/2017. Co-advised. BGSU.

**Dissertation:** *Empirical Likelihood for Change Point Detection and Estimation in Time Series Models.*

**Current Position:** Associate Professor, Department of Mathematics, Western Washington University, WA.

6. **Doaa A Basalamah**, Ph.D. in statistics, 8/2014-8/2017. Co-advised. BGSU.

**Dissertation:** *Statistical Inference for a New Class of Skew-t Distribution and Its Related Properties.*

**Current Position:** Assistant Professor, Mathematical Science Department, Umm Al Qura University, Mecca, Saudi Arabia.

7. **Xia Cai**, Ph.D. in statistics, 8/2014-8/2017. Co-advised. Beijing Institute of Technology, China.

**Dissertation:** *A Study on Change-point Problem Based on Reliability Characteristic Quantities.*

**Current Position:** Associate Professor, School of Science, Hebei University of Science and Technology, Shijia Zhuang, China.

8. **Khamis Said**, Ph.D. in statistics, 8/2014-8/2017. Co-advised. Beijing Institute of Technology, China.

**Dissertation:** *Change Point Analysis in Skew Normal Model with Applications.*

**Current Position:** Instructor, Department of Mathematics, Karume institute of Science and Technology, Zanzibar, Tanzania.

9. **Amani Alghamdi**, Ph.D. in statistics, 1/2015-5/2018. BGSU. **Dissertation:** *Study of Generalized Lomax Distribution and Change Point Problem.*

**Current Position:** Assistant Professor, Department of Statistics, Science College, King Abdulaziz University, Saudi Arabia.

10. **Logan Opperman**, Ph.D. in statistics, 8/2017-8/2019. BGSU.

**Dissertation:** *Sequential Inference and Nonparametric Goodness-of-Fit Tests for Certain Types of Skewed Distributions.*



**Current Position:** Teaching Assistant Professor, Department of Statistics, North Carolina State University, NC.

11. **Patrick Stewart**, Ph.D. in statistics, 1/2018-5/2020. BGSU.

**Dissertation:** *Statistical Inferences on Inflated Data Based on Modified Empirical Likelihood.*

**Current Position:** Assistant Professor, Department of Mathematics, Millersville University, PA.

12. **Suthakaran Ratnasingam**, Ph.D. in statistics, 8/2018-5/2020. BGSU.

**Dissertation:** *Sequential Change-point Detection in Linear Regression and Linear Quantile Regression Models Under High Dimensionality.* **2020 BGSU Graduate College Distinguished Dissertation.**

**Current Position:** Assistant Professor, Department of Mathematics, California State University, San Bernardino, CA.

13. **Sima Sharghi**, Ph.D. in statistics, 1/2018-8/2021. BGSU.

**Dissertation:** *Statistical Inferences for Missing Data/Causal Inference Based on Modified Empirical Likelihood.*

**Current Position:** Postdoc, Department of Biostatistics and Computational Biology, University of Rochester Medical Center.

14. **Joseph Njuki**, Ph.D. in statistics, 1/2020-5/2022. BGSU.

**Dissertation:** *Energy-Statistics-Based Nonparametric Methods for Change Point Analysis.*

**Current Position:** Assistant Professor, Department of Mathematics, Coastal Carolina University, SC.

15. **Peiyao Wang**, Ph.D. in statistics, 8/2020-5/2022. BGSU.

**Dissertation:** *Sequential Change Point Analysis for skew Normal Distributions and Empirical-Likelihood-Based CUSUM and SR Procedures.*

**Current Position:** Postdoc, Division of Biostatistics, School of Public Health, University of Minnesota, MN.

16. **Bradley Craig**, Ph.D. in statistics, 1/2020-8/2023. BGSU.

**Dissertation:** *Sequential Inference and Goodness of Fit Testing Using Energy Statistics for the Power Normal and Modified Power Normal Distributions.*

17. **Mei Li**, Ph.D. in statistics, 8/2019-6/2023. Co-advised. Beijing Institute of Technology.

**Dissertation:** *A study on change-point test for based on several lifetime and degradation models.*

• Master Thesis

1. **Tao Jiang**, 8/2013-8/2015.

Thesis: *Information approach for change point detection of Weibull models with applications*

2. **Matthew Kovach**, 8/2017-9/2018.  
Thesis: *Causal inference of human resource key performance indicators.*
3. **Richard Copper**, 9/2019-7/2020.  
Thesis: *Change point analysis for lognormal distribution based on Schwarcz information criterion.*
4. **Austin Hadamuscin**, 1/2021-5/2022.  
Thesis: *Information Approach to change point analysis and its application to fiscally standardized cities*
5. **Deep Sagar Karki**, 5/2021-5/2022.  
Thesis: *Modified information criterion for change point detection with its application to linear regression models.*
6. **Ryan Jarrell**, 8/2022-8/2023.  
Thesis: *Change point analysis for the log skew slash distribution.*

## TEACHING EXPERIENCE

### 1. Undergraduate Courses

- **BGSU: Fall 2006 - Summer 2021**

Course Number	Course Title	Terms
MATH 2220	Discrete Mathematics, online course	3
STAT 2110	Elementary Statistical Methods	1
MATH 1150	Introduction to Statistics I	4
MATH 1350	Calculus and Analytic Geometry	1
MATH 2220	Discrete Mathematics	4
MATH 2470	Fundamental Statistics	1
MATH 2470	Fundamental Statistics-remote	1
MATH 3220	Discrete Mathematics	3
MATH 3320	Elementary Linear Algebra	4
MATH 3410	Principles of Probability and Statistics	2

- **Syracuse University: Fall 2000 - Spring 2006**(recitations)

Course number	Course Title	Terms
MAT 211-212	Elementary Prob. and Stat. I & II	8
MAT 285	Calculus	6

### 2. Undergraduate-Graduate Courses

- **BGSU: Fall 2006 - Summer 2021**

Course Number	Course Title	Terms
MATH 4470/5470	Exploratory Data Analysis, online course	6
MATH 4320/5320	Linear Algebra and Its Applications	1
MATH 4410/5410	Probability and Statistics I	3
MATH 4420/5420	Probability and Statistics II	4
STAT 4410/5410	Applied Nonparametric Statistics	1
STAT 4160/5160	Time Series Analysis	1

### 3. Graduate Courses (MATH 6820 is a topic statistics course)

- **BGSU: Fall 2006 - Summer 2021**

Course Number	Course Title	Terms
MSA 5160	Time Series Analysis and Forecast	2
MSA 5470	Exploratory Data Analysis	2
MSA 6450	Advanced Data Analysis (online)	1
MATH 5470	Exploratory Data Analysis	2
MATH 6410	Probability Theory I	5
MATH 6420	Probability Theory II	5
MATH 6410	Probability Theory I-remote	1
MATH 6420	Probability Theory II-remote	1
MATH 6460	Nonparametric Statistical Inference	4
MATH 6500	Statistical Consulting	1
MATH 6720	Biostatistical Methods	1
MATH 6820	Empirical Likelihood Analysis	1
MATH 6820	Changepoint Analysis and Its Applications	1
MATH 6820	Causal Inference	1
MATH 7400	Multidimensional Analysis	1
MATH 7450	Advanced Mathematical Statistics I	2
MATH 7460	Advanced Mathematical Statistics II	2
MATH 6450	Advanced Data Analysis	2

### CURRICULUM DEVELOPMENT

- Graduate Topic Courses, BGSU.
  - ◊ MATH 6820 Topics in Statistics-Sequential analysis (Summer 2017; 9 students)
  - ◊ MATH 6820 Topics in Statistics-Casual inference (Fall 2016; 29 students)
  - ◊ MATH 6820 Topics in Statistics-Changepoint analysis and its applications (Summer 2014; 8 students)
  - ◊ MATH 6820 Topics in Statistics-Empirical likelihood analysis (Summer 2010; 18 students)
  - ◊ MATH 6500 Topics in Statistics-Statistical Consulting (Summer 2009; 12 students)
- Reading Courses, BGSU.
  - ◊ MATH 6700 Advanced Readings in Statistics-Empirical Likelihood (Spring 2018)
  - ◊ MATH 6700 Advanced Readings in Statistics-Casual Inference and Its Applications (Spring 2018)
  - ◊ MATH 6700 Advanced Readings in Statistics-Sequential change-point analysis (Fall 2015 & 2016; Spring 2016)
  - ◊ MATH 6700 Advanced Readings in Statistics-Nonparametric methods for change-point analysis (Fall 2015)
  - ◊ MATH 6700 Advanced Readings in Statistics-Asymptotic minimax theory and sequential change-point analysis (Fall 2015)
  - ◊ MATH 6700 Advanced Readings in Statistics-Change-point analysis for incomplete data (Fall 2015)
  - ◊ MATH 6700 Advanced Readings in Statistics-Skew normal distribution and its related family (Fall 2014)
  - ◊ MATH 6700 Advanced Readings in Statistics-Sequential Analysis (Fall 2014)

- ◇ MATH 6700 Advanced Readings in Statistics-Meta analysis in medical research II (Summer 2012)
- ◇ MATH 6700 Advanced Readings in Statistics-Meta analysis in medical research I (Spring 2012)
- ◇ MATH 6700 Advanced Readings in Statistics-Empirical likelihood method in time series analysis (Fall 2011)
- ◇ MATH 6700 Advanced Readings in Statistics-Generalized lambda distribution and data fitting (Summer 2011)
- ◇ MATH 6700 Advanced Readings in Statistics-Empirical likelihood method of Change point analysis (Spring 2011)
- ◇ MATH 6700 Advanced Readings in Statistics-Change point analysis (Spring 2009)
- ◇ MATH 6700 Advanced Readings in Statistics-Statistics in genetics (Fall 2008)

### **INVITED TALKS**

1. Confidence Distributions for Skew Normal Change Point Model Based on Modified Information Criterion. *Journal of Statistical Theory and Practice webinars seminar*, August 24, 2023.
2. Confidence intervals of mean residual life function in length-biased sampling based on modified empirical likelihood. *School of Mathematics and Statistics, Beijing Institute of Technology*, July 26, 2023. (virtually)
3. Confidence intervals of mean residual life function in length-biased sampling based on modified empirical likelihood. *Department of Applied Mathematics, School of Science, Xi'an University of Technology*, July 11, 2023. (virtually)
4. Monitoring sequential structural changes in penalized high-dimensional linear models. *International Chinese Statistical Association China Conference, Chengdu, China*, June 29-July 4, 2023.
5. Monitoring sequential structural changes in penalized high-dimensional linear models. *Department of Mathematics, College of Big Data and Internet, Shenzhen Technology University*, June 15, 2023. (virtually)
6. Confidence intervals of mean residual life function in length-biased sampling based on modified empirical likelihood. *Department of Mathematics, School of Science, Hebei University of Science and Technology*, May 10, 2023. (virtually)
7. Monitoring Sequential Structural Changes in Penalized High-Dimensional Linear Models. *International Conference on Advances in Interdisciplinary Statistics and Combinatorics, Greensboro, NC*. October 7-9, 2022.
8. Confidence Intervals of Mean Residual Life Function in Length-Biased Sampling Based on Modified Empirical Likelihood. *5th International Conference on Econometrics and Statistics, Ryukoku University, Kyoto, Japan*. June 4-6, 2022. (Virtually)
9. Monitoring sequential structural changes in penalized high-dimensional linear models. *Department of Statistics, University of Akron*. October 6, 2021.
10. Matrix variate extended skew normal distributions. *Spring Research Conference, Oakland University, MI*. May 20-22, 2020.
11. *School of Mathematics and Statistics, Beijing Institute of Technology University, Beijing, China*.

- (a) Empirical Likelihood for Change Point Detection in Autoregressive Models.. June 25, 2019.
- (b) Sequential Change Point Detection Procedure for High-Dimensional Data via SCAD Penalty. July 2, 2019.
- 12. Empirical Likelihood for Change Point Detection in Autoregressive Models. *ICSA 2019 Applied Statistics Symposium, Raleigh, NC.* June 9-12, 2019.
- 13. Empirical Likelihood Based Detection Procedure for Change Point in Mean Residual Life Functions under random censorship. *Department of Biostatistics and Epidemiology, University of Pennsylvania, Philadelphia.* October 6, 2015.
- 14. Empirical Likelihood Based Detection Procedure for Change Point in Mean Residual Life Functions under random censorship. *Fifth International Workshop in Sequential Methodologies, Columbia University, NYC.* June 22-24, 2015.
- 15. Change-point Analysis Workshop (including six serial lectures). *Invited. School of Mathematics and Statistics, Beijing Institute of Technology University, Beijing, China.* May 5-May 16, 2014.
- 16. Information Approach for the Change Point Detection in the Skew Normal Distribution and Its Applications. *Fourth International Workshop in Sequential Methodologies, University of Georgia, Athens, Georgia.* July 18-21, 2013.
- 17. Empirical likelihood ratio test for the mean change-points with linear trend followed by abrupt change. *IMS-China International Conference on Statistics and Probability. Chengdu, P. R. China.* June 30-July 4, 2013.
- 18. A New Approach of Non-central Skew  $t$  Distribution and Its Applications. *Department of Statistics, Nankai University, Tianjing, China.* June 21, 2013.
- 19. *School of Mathematics and Statistics, Beijing Institute of Technology University, Beijing, China.*
  - (a) Empirical Likelihood Ratio Test for the Mean Change-Points with Linear Trend Followed by Abrupt Change. June 18, 2013.
  - (b) Information Approach for the Change Point Detection in the Skew Normal Distribution and Its Applications. June 19, 2013.
- 20. Empirical Likelihood Method for the Mean Change Point Model. *Invited colloquium talk, Department of Mathematics and Statistics, Oakland University, Rochester, MI.* November, 2012.
- 21. An Empirical Likelihood Ratio Based Goodness-of-Fit Test for Skew Normality. *Invited colloquium talk, Department of Mathematical Sciences, Indiana University-Purdue University at Indianapolis.* November, 2011.
- 22. The Empirical Likelihood Ratio Test for the Mean Change Points with the Linear Trend Followed by Abrupt Change. *Third International Workshop in Sequential Methodologies, Stanford, CA. June 14-16, 2011.*
- 23. A Moment-based Test for the Mixture Distributions With Small Sample Sizes and Its Application. *The Fourth International Conference on Neural, Parallel & Scientific Computations, Atlanta, GA. August 11-14, 2010.*
- 24. *Graduate University of Chinese Academy of Science, Beijing, China.*
  - (a) A Generalized Lambda Distribution (GLD) Change Point Model For the Detection of DNA Copy Number Variations in Array CGH Data. June 23, 2009.
  - (b) A Moment-based Test for the Homogeneity in Mixture Natural Exponential Family with Quadratic Variance Functions. June 24, 2009.

25. The Change point Problems of The Generalized Lambda Distributions. *Department of Mathematics, University of Mississippi, February, 2008.*

### **PROFESSIONAL DEVELOPMENT**

- [13] Serve as a session chair in the 2023 International Chinese Statistical Association conference, Chengdu, China, June 29-July 4, 2023.
- [12] Wrote a recommendation letter for Dr. Lan Gao for the promotion to full professor, Department of Mathematics, The University of Tennessee at Chattanooga, 2023.
- [11] Wrote a recommendation letter for Dr. Ngoc Nguyen for the promotion to full professor, Department of Mathematics, Western Kentucky University, 2022.
- [10] Wrote a recommendation letter for Dr. Yonggang Lu for the promotion to associate professor, Business school, University of Maine, 2022.
- [9] Wrote a recommendation letter for Dr. Xuwen Zhu for the promotion to associate professor, Department of Information Systems, Statistics, and Management Science, the Culverhouse College of Business, The University of Alabama, 2021.
- [8] Wrote a recommendation letter for Dr. Nao Mimoto for the promotion to associate professor, Department of Statistics, The University of Akron, 2017.
- [7] Wrote a recommendation letter for Dr. Ngoc Nguyen for the promotion to associate professor, Department of Mathematics, Western Kentucky University, 2015.
- [6] Wrote a recommendation letter for Dr. Yonggang Lu for the promotion to associate professor, College of Business and Public Policy, University of Alaska Anchorage, 2013.
- [5] NSF proposal reviewer. "Development of Nonparametric Univariate and Multivariate CUSUM Control Charts using Sequential Normal Scores for Detecting Structural Changes in Economic Series". November, 2019.
- [4] Served as a group member for Bowling Green State University, Ohio Council of Teachers of Mathematics(OCTM) Mathematics Tournament. February 2014-2016.
- [3] Served as the site director for Bowling Green State University, Ohio Council of Teachers of Mathematics(OCTM) Mathematics Tournament. February 2011-2014.
- [2] Serve as the chair of the nonparametric session in the Joint Statistical Meetings. Miami beach, FL, July 30-August 4, 2011.
- [1] Serve as a session chair in the 8th Annual Hawaii International conference on Statistics, Mathematics, and Related fields. Honolulu, Hawaii. January, 2009.

### **REVIEWER FOR THE JOURNALS**

- *Entropy*
- *Journal of Applied Statistics*
- *Journal of Adolescent Health*
- *Mathematics - MDPI*
- *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*
- *Test*
- *Symmetry*
- *PLOS ONE*
- *Biometrics*
- *Statistics*

- *Environmetrics*
- *Science China Mathematics*
- *The Computer Journal*
- *Journal of Statistical Computation and Simulation*
- *American Journal of Mathematical and Management Science*
- *Electronic Journal of Statistics*
- *Communications in Statistics-Theory and Methods*
- *Communications in Statistics-Simulation and Computation*
- *Statistics and Its Interface*
- *Journal of Applied Probability and Statistics*
- *Applied Mathematics and Computation*
- *Journal of Statistical Theory and Practice*
- *IET Radar, Sonar & Navigation*
- *The American Statistician*
- *Journal of Nonparametric Statistics*
- *International Journal of Probability and Statistics*
- *International Journal of Biostatistics*
- *Statistics Research Letters*
- *Sequential Analysis*
- *Statistics in Medicine*
- *Statistical Methodology*
- *Statistics & Probability Letters*
- *Sankhya B*
- *Random Operators and Stochastic Equations*
- *Quality Technology & Quantitative Management*
- *Annals of the Brazilian Academy of Sciences*
- *Advances and Applications in Statistics*
- *Computational Statistics and Data Analysis*
- *Bulletin of the Malaysian Mathematical Sciences Society*
- *Scientific Reports*

## **TECHNICAL SKILLS**

- Operating Platforms: Windows.
- Statistical Software
  - Beginner: Python, SAS
  - Advanced: R, Minitab, SPSS
- Application: L<sup>A</sup>T<sub>E</sub>X, GitHub.