Suthakaran Ratnasingam, Ph.D.
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Education

- **Bowling Green State University, Bowling Green, OH, USA**
  PhD in Statistics Aug 2020
  Advisor: Prof. Wei Ning

- **University of Nebraska at Omaha, Omaha, NE, USA**
  MA in Mathematics Dec 2015
  Advisor: Prof. Steven G. From

- **University of Peradeniya, Peradeniya, Sri Lanka**
  Postgraduate Diploma in Applied Statistics July 2013
  BSc (Hons) in Statistics and Operations Research Aug 2010

Research Interests

Change Point Analysis, Sequential Analysis, High-Dimensional Statistics, Extreme Value Analysis, Confidence Distributions, Empirical Likelihood, Bounds & Inequalities.

Professional Experiences

- **Associate Professor** Aug 2025 – Present
  Department of Mathematics
  California State University, San Bernardino, CA, USA

- **Assistant Professor** Aug 2020 – July 2025
  Department of Mathematics
  California State University, San Bernardino, CA, USA

- **Graduate Teaching Associate** Aug 2016 – Aug 2020
  Department of Mathematics and Statistics
  Bowling Green State University, Bowling Green, OH, USA

- **Graduate Teaching Assistant** Aug 2014 – Dec 2015
  Department of Mathematics
  University of Nebraska at Omaha, Omaha, NE, USA

- **Lecturer** March 2014 – Aug 2014
  Department of Mathematics and Computer Science
  The Open University of Sri Lanka, Nawala, Sri Lanka

- **Teaching Assistant** Nov 2012 – March 2014
  Department of Mathematics & Philosophy of Engineering
  The Open University of Sri Lanka, Nawala, Sri Lanka

Awards & Scholarships

- PATHS Undergraduate Spring Research Program Award, CSUSB — Spring 26
- PATHS Undergraduate Summer Research Program Award, CSUSB — Summer 24, 25
- Academic Affairs Research Assigned Time Awards, CSUSB — Spring 24, 25
- Faculty Summer Research Fellowship, CSUSB — Summer 22, 23, 24, 25
- OSR Undergraduate Summer Research Program Award, CSUSB, USA — Summer 2022
- Graduate College Distinguished Dissertation Award, Bowling Green State University — 2020 - 2021
- J Robert and Gretchen Overman Scholarship, Department of Mathematics and Statistics, Bowling Green State University, USA — 2020 - 2021
- UNO Advantage Scholarship, University of Nebraska at Omaha, USA — 2014 - 2015
- Mahapola Higher Education Scholarship for the Performance in G.C.E (A/L), Sri Lanka — 2006 - 2010

Articles in Peer Reviewed Journals

(* - denotes co-first authors, † - denotes undergraduate/graduate students)

[21] Gu, C.* & **Ratnasingam, S.*** (2025) Change Point Detection in SCAD Penalized Panel Models, *Sequential Analysis*, 44(4), 377-403.

[20] From, S. G., & **Ratnasingam, S.** (2025) New Upper and Lower Bounds for the Upper Incomplete Gamma Function, *Results in Applied Mathematics*, 25, 100552.

[19] **Ratnasingam, S.**, & Gamage, R. D. P. (2025) Empirical Likelihood Change Point Detection in Quantile Regression Models, *Computational Statistics*, 40, 999-1020.

[18] Li, M., **Ratnasingam, S.**, Tian, Y., & Ning, W. (2024) Change Point Detection in Length-biased Lognormal Distribution, *Communications in Statistics - Simulation and Computation*, 54(11), 4605-4622.

[17] **Ratnasingam, S.**, Wallace, S.†, Amani, I.†, & Romero, J.† (2024) Nonparametric Confidence Intervals for Generalized Lorenz Curve Using Modified Empirical Likelihood, *Computational Statistics*, 39, 3073-3090.

[16] **Ratnasingam, S.** & Muñoz-Lopez, J.† (2023) Distance Correlation-Based Feature Selection in Random Forest, *Entropy*, 25(9), 1250.

[15] Gu, C.* & **Ratnasingam, S.*** (2023) Real-Time Change Point Detection in Linear Models Using the Ranking Selection Procedure, *Sequential Analysis*, 42(2), 129-149.

[14] Karunanithy, R., **Ratnasingam, S.**, Holland, TE. & Sivakumar, P. (2023) Sensitive Detection of Human Epididymis Protein-4 (HE4) Ovarian Cancer Biomarker through Sandwich Type Immunoassay Method with Laser-Induced Breakdown Spectroscopy, *Bioconjugate Chemistry*, 34(3), 501-509.

[13] **Ratnasingam, S.**, & Ning, W. (2023) Change Point Detection in Linear Failure Rate Distribution Under Random Censorship, *Journal of Statistical Theory and Practice*, 17(1), 1-22.

[12] **Ratnasingam, S.**, & 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.

[11] From, S. G., & **Ratnasingam, S.** (2022) Some Efficient Closed-Form Estimators of the Parameters of the Generalized Pareto Distribution, *Environmental and Ecological Statistics*, 29(4), 827-847.

[10] **Ratnasingam, S.**, Buzaianu, E. & 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.

[9] From, S. G., & **Ratnasingam, S.** (2022) Some New Inequalities for the Beta Function and Certain Ratios of Beta Functions, *Results in Applied Mathematics*, 15, 100302.

[8] Li, M., **Ratnasingam, S.**, & Ning, W. (2022) Empirical-Likelihood-Based Confidence Intervals for Quantile Regression Models with Longitudinal Data, *Journal of Statistical Computation and Simulation*, 92(12), 2536-2553.

[7] **Ratnasingam, S.**, & Ning, W. (2021) Monitoring Sequential Structural Changes in Penalized High-Dimensional Linear Models, *Sequential Analysis*, 40(3), 381-404.

[6] From, S. G., & **Ratnasingam, S.** (2021) Some New Bounds for Moment Generating Functions of Various Life Distributions Using Mean Residual Life Functions, *Journal of Statistical Theory and Practice*, 15(2), 1-14.

[5] **Ratnasingam, S.**, & Ning, W. (2021) Modified Information Criterion for Regular Change Point Models Based on Confidence Distribution, *Environmental and Ecological Statistics*, 28(2), 303-322.

[4] **Ratnasingam, S.**, & Ning, W. (2021) Sequential Change Point Detection for High-Dimensional Data Using Nonconvex Penalized Quantile Regression, *Biometrical Journal*, 63(3), 575-598.

[3] **Ratnasingam, S.**, & Ning, W. (2020) Statistical Inference for the Lomax-Linear Failure Rate Distribution, *Far East Journal of Theoretical Statistics*, 59(1), 35-58.

[2] **Ratnasingam, S.**, & 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.

[1] From, S. G., & **Ratnasingam, S.** (2016), Some New Refinements of the Arithmetic, Geometric and Harmonic Mean Inequalities with Applications, *Applied Mathematical Sciences*, 10(52), 2553-2569.

Articles Under Review / In Progress

[5] **Ratnasingam, S.**, Gu, C. & Hauck, A.† Change Point Detection in Longitudinal Bayesian Quantile Regression. *(In progress)*

[4] From, S. G., & **Ratnasingam, S.** On Tests for a Change Point in Distributions with Monotone Likelihood Ratio. *(In progress)*

[3] From, S. G., & **Ratnasingam, S.** Some New Bounds for the Riemann Zeta and Dirichlet Beta Functions and Other Related Inequalities. *(Submitted)*

[2] **Ratnasingam, S.** Single Change-Point Detection via Energy Distance with Application to Genomic Data. *(Submitted)*

[1] **Ratnasingam, S.**, Butenko, A.† U-Statistics Based Jackknife Empirical Likelihood Tests for the Generalized Lorenz Curves *(arXiv)*.

Conference Proceedings

[2] **Ratnasingam, S.**, Perera, K., Wikramanayake, N. (2014), Rainfall Intensity-DurationFrequency Relationship for Colombo Region in Sri Lanka, *Proceedings of the SAITM Research Symposium on Engineering Advancements*, 101-104pp, 26th April, ISBN 978-955-0638-03-1.

[1] **Ratnasingam, S.**, Perera, K., Wikramanayake, N. (2014), Identify the Best Probability Distribution for Daily Maximum Rainfall in Colombo, Sri Lanka, *Proceedings of the International Conference on Mathematical Modeling*, 89-93pp, 14th March, ISBN 978-955-046-054-0.

Students Supervised

- Graduate Students:
  - MA Thesis
    [4] *Angela Van Sant (Expected Fall 2025)*
    [3] *Alexis Wallace (Spring 2024)*
    Title: Information Based Approach for Detecting Change Points in Inverse Gaussian Models with Applications.
    [2] *Jose Muñoz-Lopez (Spring 2023)*
    Title: Distance Correlation Based Feature Selection in Random Forest.
    [1] *Anton Butenko (Spring 2023)*
    Title: Jackknife Empirical Likelihood Tests for Equality of Generalized Lorenz Curves.
- Undergraduate Students:
  - Honors Thesis (Undergraduate)
    [1] *Andreas Hauck (Spring 2025)*
    Title: Change Point Detection in Longitudinal Bayesian Quantile Regression.
  - Cal-Bridge student mentor - *Timothy Perez*
  - U-Rise student mentor - *Timothy Perez* (AY 2024 - 2025)
  - Independent Study
    * *Students: Alfonso Perez (Spring 2022), Jordan Davis (Fall 2022)*
  - NSF Funded Research for Students at Minority Serving Institutions - The Data Mine AY 2022 - 2023
    * *Students: Fabian Torres, Keylin Serrano, Jade Romero, & Quincy Autry*
  - Riverside Community College (RCC)/CSUSB STEM Connect Research Experience -
    [2] Summer 2025
    * A Comparative Study of Regression Methods for PM2.5 Prediction in Beijing
    Students: Rachel Ortega, Joseph Santana, Isabel Sosa, Joshlyn Bui
    [1] Summer 2024
    * Project title: Predicting Student Performance: A Comparative Analysis of Statistical Models
    Students: Briseida Cordero Garcia & Briseida Sanchez Acosta
    * Project title: Computing Exoplanets' Missing Values
    Students: Syed Moiz, Emma Wuysang, David Sosa & Julian Vara
  - Undergraduate Summer Research Program - CSUSB
    [3] Summer 2025
    * Project Title: Variable Selection in Penalized Regression Models Using Distance Correlation
    Students: Jose Ramirez, Julian Vara, & Garrett Gruber
    [2] Summer 2024
    * Project Title: Variance Change Points in Gaussian Model Using Modified Information Criterion
    Students: Sarah Chuang, Andreas Hauck, & Timothy Perez
    [1] Summer 2022
    * Project Title: Nonparametric Confidence Intervals for Generalized Lorenz Curve Using Modified Empirical Likelihood

Students: Imran Amani, Jade Romero & Spencer Wallace

R Packages

- IneqBetaFun

  This R package provides several new upper and lower bounds for the Beta function and the quotient of Beta functions proposed in *From and Ratnasingam (2022)*.

- EfficientClosedGPD

  This R package provides some efficient closed-form estimators of the parameters of the Generalized Pareto Distribution proposed in *From and Ratnasingam (2022)*.

Seminar & Conference Presentations

- *Contributed:* Change Point Detection in SCAD-penalized Dynamic Panel Models - Joint Statistical Meetings in Portland, OR Aug 3 – 8, 2024
- *Contributed:* Jackknife Empirical Likelihood Tests for Equality of Generalized Lorenz Curves - Annual Meeting WNAR/IBS/Graybill in Fort Collins, CO June 9 – 12, 2024
- *Invited:* Sequential Change Point Analysis in High-Dimensional Linear Models - Department of Mathematics, Millersville University, PA March 23, 2023
- *Contributed:* Monitoring Sequential Structural Changes in Penalized High-Dimensional Linear Models - Joint Statistical Meetings in Washington, DC Aug 6 - 11, 2022
- *Contributed:* Real-Time Change Point Detection in High-Dimensional Linear Models - Annual Meeting WNAR / IMS / JR (online) June 10 - 11, 2022
- Sequential Change Point Detection for High-Dimensional Data using Non-convex Penalized Quantile Regression - Colloquium, Department of Mathematics, CSUSB Oct 09, 2020
- Confidence Distribution - Statistics Seminar, Department of Mathematics & Statistics, Bowling Green State University Sep 19, 2018

Conferences & Workshops

- 2024 WNAR/IMS/Graybill Annual Meeting, Fort Collins, Colorado June 09 - 12, 2024
- 2022 Joint Statistical Meetings in Washington, DC August 6 - 11, 2022
- WNAR/IMS/JR Annual Meeting (online) June 10 - 11, 2022
- OCLB ASA Application of Statistical Inference through Data Science Techniques Nov 06, 2020
- 25^{th} Distinguished Statistician Colloquium Oct 14, 2020
- Integrating Big Data into Surveillance Models to Inform Decision Making for COVID-19 Oct 23, 2020
- Advocating for Student of Color: There's More You Can Do Sep 25, 2020
- OCLB ASA 2020 Q3 Quarterly Social - Research Showcase Sep 14, 2020
- CourseKata Summer Workshop, CSUSB June 22 - July 24
- Teaching Statistics with Simulation-Based Inference Workshop April 03, 2020

Classes Taught

- California State University - San Bernardino, CA, USA
  - Math 1601 - Modeling with Calculus

Summer 24
  - Math 2265 - Statistics with Applications
    Fall 20, Spring 21 (2 sections), Fall 21 (2 sections), Spring 22 (2 sections), Summer 22, Fall 22, Spring 23, Summer 23, Fall 23 (2 sections), Summer 25, Winter 26
  - Math 2310 - Applied Linear Algebra
    Spring 24
  - Math 3320 - Mathematical Interest Theory
    Spring 25, Spring 26
  - Math 3460 - Probability Theory
    Fall 20 (2 sections), Spring 25
  - Math 3465 - Computational Statistics
    Fall 22
  - Math 3953 - Directed Study
    Fall 22, Spring 23, Fall 23, Spring 24
  - Math 4320 - Introduction to Actuarial Modeling
    Spring 23, Fall 24
  - Math 4360 - Linear Statistical Models
    Fall 21, Fall 23, Fall 24, Fall 25
  - Math 5565 - Mathematical Statistics
    Spring 22, Spring 23, Spring 24, Spring 25, Spring 26
  - Math 5953 - Independent Study
    Spring 22, Fall 22, Fall 23, Spring 24
  - Math 6953 - Graduate Independent Study
    Fall 22, Fall 23
- Bowling Green State University, OH, USA
  - Math 1150 - Introduction to Statistics (several sections, both face-to-face & online)
- University of Nebraska at Omaha, NE, USA
  - Several lower-division undergraduate courses
- The Open University of Sri Lanka, Nawala, Sri Lanka
  - Upper- and lower-division undergraduate courses

Professional development

- Canvas Summer Institute, CSUSB — Summer 2022
- Best Practices in Cosynchronous Teaching, CSUSB — Spring 2022
- Essentials of Teaching with Canvas, CSUSB — Spring 2022
- FCE Certificate in High Impact Practices (HIPs) - Teaching & Learning Track, CSUSB — Spring 2021
- FCE Certificate in Large Lectures in Distance Learning, CSUSB — July 27 - Aug 7, 2020
- ISSUES-X Summer Institute, CSUSB — July 13 -17, 2020

Services

- Faculty Judge for the 2024 Outstanding Thesis/Project Award Selection — AY 23-24
- Juror for the 13th Annual "Meeting of the Minds" Student Research Symposium — Spring 2024
- Faculty Judge for the 2023 Outstanding Thesis/Project Award Selection — AY 22-23

- Served on the Math Department Statistics Faculty Search Committee AY 22-23
- Judge for the science and engineering projects of students in the junior division (grades 6-8) and senior division (grades 9-12) at the San Bernardino, Inyo, and Mono Science and Engineering Fair (SIMSEF) 2023, 2024
- Volunteered on the Data Analytics Working Group at CSUSB. Spring 2022, Fall 2022
- Needs Assessment Study for Math Department's New Undergraduate Statistics Minor and Major Programs. Fall 2021
- Served on the Statistics Minor/Major Program Committee in the Mathematics Department, CSUSB. Spring 2021 - Fall 2021
- Served on the Data Analytics Certificate Committee - College of Natural Sciences, CSUSB. Spring 2021 - Fall 2021
- Science Olympiad - Bowling Green State University, OH, USA March 09, 2019
- Participated Seven Day Service - University of Nebraska at Omaha, NE, USA Fall 2014
- Worked as a volunteer at UNO's Global Study Conference Fall 2014
- Representative of the Staff - Student Consultative Committee in the Faculty of Science, University of Peradeniya 2007 - 2008

Reviewer for the Journals

- *Entropy*
- *Journal of Applied Statistics*
- *Mathematics - MDPI*
- *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*
- *Journal of Mathematical Inequalities*
- *Journal of Statistical Computation and Simulation*

Professional Affiliations

- Mathematical Association of America 2014 - Present
- American Mathematical Society 2014 - Present
- Statistics Without Borders 2019 - Present

Technical Skills

- Operating Platforms: Windows & Linux.
- Statistical Software: R, Python, SAS, JMP, Minitab, SPSS, Matlab.
- Application: LaTeX, GitHub.