

Buddika Peiris, PhD

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EDUCATION

- **PhD** (August 2014)
Major: Mathematical Statistics.
Southern Illinois University, Carbondale, USA.
Dissertation: Order Restricted Inference in Regression.
Research Advisor: Prof. Bhaskar Bhattacharya.
GPA: 4.00/4.00.
- **M.S** (August 2010)
Major: Mathematical Statistics.
Southern Illinois University, Carbondale, USA
Thesis: Order Restricted Inferences and Meta-Analysis in Linear Regression.
Research Advisor: Prof. Bhaskar Bhattacharya
GPA: 4.00/4.00.
- **B.S** (May 2005)
Major: Mathematics.
University of Sri Jayewardenepura, Sri Lanka.
Honors (equivalent to 4.0 GPA).
Minor: Statistics.

EMPLOYMENT

- **Assistant Teaching Professor.**
Worcester Polytechnic Institute, Worcester, MA.
August 2016 – Current.
- **Post-Doctoral Scholar.**
Worcester Polytechnic Institute, Worcester, MA.
August 2014 – August 2016.
Research Advisor: Prof. Balgorbin Nandram.
- **Graduate Teaching Assistant.**
Southern Illinois University, Carbondale, IL.
August 2008 - August 2014.
- **Graduate Teaching Assistant.**
Department of Statistics (Faculty of Art), University of Sri Jayewardenepura, Sri Lanka.
May 2007 – August 2008.
- **Graduate Teaching Assistant.**
Department of Mathematics University of Sri Jayewardenepura, Sri Lanka.
May 2005 – May 2007.

PUBLICATIONS

- **Peiris, T.B.** and Bhattacharya, B., “Order Restricted Inferences in Regression”, *Journal of Multivariate Analysis*, V 151 C, P.133-150, October 2016, [DOI:10.1016/j.jmva.2016.07.008].
- Wang, S., Kim, S and **Peiris, T.B.**, “An Improved Meta-Analysis Cylindrical-Type Time Series Data with Applications to Forecasting Problem in Environmental Study”, *Journal of Applied Statistics*, January 2017, [DOI: 10.1080/02664763.2017.1280451].
- **Peiris, T.B.** and Kim, S., “Restricted Inference in Circular-Linear and Linear-Circular Regression” , *Sri Lankan Journal of Applied Statistics*, V 17-1 p. 39-49 June 2016, [DOI: 10.4038/sljastats.v17i1.7844].
- Nandram, B. and **Peiris, T. B.**, “Bayesian Analysis of a ROC Curve for Categorical Data Using a Skew-Binormal Model”, *Statistics and Its Interface*, V 11-2, P. 369-384, January 2018, [DOI: <http://dx.doi.org/10.4310/SII.2018.v11.n2.a13>].
- Shazeeb, M. S., Howes, S., Kandasamy, S., **Peiris, T. B.**, Sotak, C. H., Pins, G. D., “Developing Quantitative MRI Parameters to Characterize host Response and Tissue Ingrowth into Collagen Scaffolds”, *NMR in Biomedicine* (accepted).

PAPERS UNDER REVIEW AND IN PREPARATION

- Kim, S. and **Peiris, T.B.**, “Meta Analysis of Regression: An Overview and a New Approach with Application to Cylindrical Time Series Arising from Environmental Sciences”, *Environmental and Ecological Statistics* (under review).
- Messier, R. J., Narayanan, R.P.N., **Peiris, T. B.**, Sakulich, A. R., Emmert, M. H., “Fingerprinting” Ordinary Portland Cement: Quantitative and Rapid Elemental Analysis for Forensic Sourcing”, *Analytical Chemistry* (under review).
- **Peiris, T.B.**, Chen, X., and Tao, J., “Constrained Prediction Intervals and Diagnostic Tests in Multiple Regression” (in preparation).
- Cummings, E. M., Feng, Y., Messier, R. J., **Peiris, T. B.**, Roberts, S. C., “Early Stress Activation via Methyl Jasmonate and Loblolly Pine Somatic Embryo Yield” (in preparation).
- Libsch A, B. and **Peiris, T. B.**, “Predicting Average Annual Value of Free Agent Contracts in Major League Baseball” (in preparation).

COURSES TAUGHT

- At Worcester Polytechnic Institute:
 1. Advanced Mathematical Statistics (PhD Independent Study).
(First 7 chapters of Mathematical Statistics – Jun Shao were covered).
 2. Probability and Mathematical Statistics -1 (Graduate).
 3. Design and Analysis of Experiments (Graduate).
 4. Design and Analysis of Observational Studies and Sampling (Graduate).
 5. Analysis of Lifetime Data (Graduate).
 6. Regression Analysis (Graduate).
 7. Mathematical Statistics.

8. Probability for Applications.
9. Applied Statistics in Science and Engineering I.
10. Applied Statistics in Science and Engineering II.
11. Discrete Mathematics.
12. Calculus – 1.

▪ At Southern Illinois University:

1. Intermediate Algebra.
2. College Algebra.
3. Business Calculus.
4. Trigonometry.
5. Finite Mathematics.

▪ At University of Sri Jayewardenepura :

1. Recitation classes for Mathematics majors (Calculus, Linear Algebra, Abstract Algebra, Classical Mechanics, Optimization).
2. Introduction to Computer Science and Mathematical Software.
3. Basic Mathematics for non Math- majors.

STUDENT ADVISING

- Wang Shuo: (MS), Graduated in May 2015.
Thesis: An Improved Meta-Analysis Cylindrical-Type Time Series Data with Applications to Forecasting Problem in Environmental Study.
- Xinyu Chen: (MS), Graduated in May 2017.
Thesis: Constrained Prediction Intervals in Multiple Regression.
- Jinxin Tao: (MS), Graduated in May 2017.
Thesis: Comparison between confidence intervals of multiple linear regression models with and without restrictions.
- Yutong Feng: (MS), Graduated in May 2017.
Project Title: Analyzing Experiments with missing data.
- Jinglun Wei: (MS), Graduated in May 2018.
Thesis: Multiple Logistic Regression with Missing Data.
- Di Wu: (MS), Graduated in May 2018.
Project Title: Comparing Statistical specification methods using data from born transplant cement industry.
- Anton Libsch: (MS), Graduated in May 2018.
Thesis: An Improved Regression Model to Predict Salaries of Major League Baseball Players.
- Afnan Almazmomi: (MS), Graduated in May 2018.
Thesis: Properties of Likelihood Inference for Order Restricted Models.
- Li Zhang: (MS), Graduated in May 2018.
Thesis: Order Restricted Inference for means with Missing Values.
- Xueer Jing: (MS), Graduated in May 2018.
Industrial Project at OFS A Furukawa Company.
- Jichuan Wang: (MS), Graduated in May 2018.
Project Title: Normal Correlation Models to Analyze Bivariate data.

- Charles Alberts: (MS), Expected to graduate in December 2018.
Project Title: Comparison of Methods for Predicting Academic Performance of Probation Students.
- Zhengyu Li: (MS), Expected to graduate in May 2019.
Project Title: Statistical Methods for Image Analysis.
- Yang Liu and Zhongnan: (MS), Expected to graduate in May 2019.
Project Title: Analysis of Lifetimes of Leukemia Patients.
- Robert Rosen: Major Qualifying Project (MQP).
Project Title: Blood Testing for THC Levels.

REFEREE ACTIVITIES

- Book Chapter : Bayesian Inference of a Finite Population Mean Under Length-Biased Sampling (**Division of Forestry Statistics, Indian Council of Forestry Research and Education**, October 2018)
- Semiparametric Bayesian Analysis of Transformation Spatial Mixed Models for Large Datasets (**Statistics and Its Inference**, October 2018).
- Semivarying coefficient least squares support vector regression analyzing high-dimensional gene-environmental data (**Journal of Applied Statistics**, January 2017).
- Report on Hierarchical Full Bayesian Robust Principal Component (**Statistics and Its Interface**, March 2016).
- Iterative Posterior Regularized NMF based Speech enhancement with speech and noise bases update (**Statistics and Its Interface**, December 2015).
- Estimation of the parameters of life for distributions having power hazard function based on progressively Type-II censored data (**Statistical Methodology**, February 2015).
- An exponential-squared estimator in the autoregressive (AR) model with heavy-tailed errors by (**Statistics and Its Interface**, October 2014).

AWARDS AND HONORS

- Michael H. Kutner Junior Faculty Poster Travel Award, 2017 Southern Regional Council on Statistics.
- Michael H. Kutner Junior Faculty Poster Travel Award, 2016 Southern Regional Council on Statistics.
- International Indian Statistical Association Travel Award (from American Statistical Association) 2014.
- Department nomination for Dissertation Research Award, 2013– 2014.
- Department nomination for Doctoral Fellowship, 2013– 2014.
- Passed Doctoral Qualifying Exam with the highest marks 2011.

PRESENTATIONS

- **Analysis of ROC Curves** on May 14, 2018 at Langenhop Lecture and SIU Mathematics Conference, Southern Illinois University, Carbondale, IL, (Invited).
- **Skew-Binormal Model for Analyzing Analyzing ROC curves** on June 14, 2017 at Joint Meeting of the Spring Research Conference and the Quality and Productivity Research Conference, University of Connecticut, Storrs, CT (Invited)
- **Constrain Inference in Linear Regression** on April 22, 2017 at the 31st New England Statistical Symposium, University of Connecticut, Storrs, CT (Invited)
- **Order Restricted Inference in Multiple Regression** on March 04, 2016 at University of Tennessee Chattanooga at the Statistical Seminar (Invited).
- **Introduction to Order Restricted Inference** on July 28, 2015 at Seminar Series of Department of Electrical and Computer Engineering, University of Massachusetts, Dartmouth (Invited).
- **Order Restricted Inference and Modified Regression Models** on December 28, 2014 at the Institute of Applied Statistics Sri Lankan International Conference at Colombo, Sri Lanka (Invited).
- **Order Restricted Inference in Linear Regression** on July 13, 2014 at the International Indian Statistical Association Conference at Riverside, California (Contributed).
- **Constrained Prediction Intervals in Regression** on June 06, 2017 at SRCOS Summer Research Conference at Jekyll Island, Georgia (Poster, Invited).
- **ROC Curve Analysis for Categorical Data Using a Skew-Binormal Model** on June 06, 2016 at SRCOS Summer Research Conference at Bentonville, Arkansas (Poster, Invited).
- **Restricted Inference in Regression** on July 08, 2015 at SRCOS Summer Research Conference at Carolina Beach, North Carolina (Poster, Invited).
- **Constrain Inference in Linear Regression** on April 25, 2015 at the 29th New England Statistical Symposium (Poster, Contributed).

OTHER

- Coordinator of Applied Statistics Master's Program from 2016 August to current (Worcester Polytechnic Institute)
- Invited session chair of session at Langenhop Lecture and SIU Mathematics Conference, Southern Illinois University, Carbondale, IL-2018.
- Passed Actuarial Science Exam P (Society of Actuaries) -2010.
- Member of the PhD preliminary Exam committee, Spring 2015, Fall 2015, Spring 2016, Spring 2017, Fall 2017, Spring 2018 (Worcester Polytechnic Institute)
- Presented in weekly Statistics Seminar, Fall 2014 (Worcester Polytechnic Institute) (First two chapters of Unimodality, Convexity and Applications - S Dharmadhikari and Joag-Dev were covered).

COMPUTER SKILLS

- Numerical computation for scientific investigations using *FORTRAN*.
- Statistical Software: *R*, *SPSS*, *MINITAB*, *ARC* and *SAS*.
- Mathematical software: *MAPLE* and *MATLAB*.
- Type setting software: *LATEX*, *PCTEX* and *AMS-TeX*.
- Web enhance instructional packages: *MathXL*, *Blackboard*, *MyLabPlus* and *WebWork*.
- Classroom software: *PDF annotator*, *SMART Notebook*.
- *MS* Office Word, Excel, PowerPoint.

REFERENCES

You may request the following professionals for further information.

- Prof. Bhaskar Bhattacharya
Department of Mathematics
Southern Illinois University
Carbondale, IL, 62901-4408
Tel: 618.453.6503
Email: bhaskar@siu.edu
- Prof. Balgobin Nandram
Department of Mathematical Sciences
Worcester Polytechnic Institute
Worcester MA 01609.
Tel: 508 831 5539
Email: balnan@wpi.edu
- Prof. David Olive
Department of Mathematics
Southern Illinois University
Carbondale, IL, 62901-4408
Tel: 618.453.6566
Email: dolive@siu.edu
- Prof. Joseph D Petrucci
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