

# Adão Alexandre (Alex) Trindade: Curriculum Vitae

[Updated: 1 January 2025]

## Address

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## Research Interests

Time series modeling: inference in the tails; asymmetric distributions; multivariate volatility modeling; state-space models and longitudinal data. Saddlepoint-based bootstrap methodology and applications. Asymptotic theory and higher-order approximations.

## Education

- Ph.D. (Statistics), December 2000, Colorado State University, U.S.A.
- M.A. (Mathematics), May 1992, University of Oklahoma, U.S.A.
- B.Sc. (Mathematics), June 1988, University of Southampton, U.K.

## Professional Experience

- *Professor*, Department of Mathematics & Statistics, Texas Tech University, 2014 to present.
- *Adjunct Professor*, Graduate School of Biomedical Sciences, Texas Tech University Health Sciences Center, 2013 to present.
- *Associate Professor*, Department of Mathematics & Statistics, Texas Tech University, 2007–2014.
- *Assistant Professor*, Department of Statistics, University of Florida, 2000–2007.
- *Graduate Research Assistant*, Department of Statistics, Colorado State University, 1999–2000.
- *Graduate Consultant*, The F.A. Graybill Statistical Laboratory, Department of Statistics, Colorado State University, 1997–1998.
- *Graduate Teaching Assistant*, Department of Statistics, Colorado State University, 1996–2000.
- *Graduate Teaching Assistant*, Department of Mathematics & Statistics, University of New Mexico, fall 1995.
- *Consultant*, Decision Consultants Inc., Dallas, Texas, 1993–1995. On assignment as a programmer/analyst with the IBM Corporation.
- *Graduate Teaching Assistant*, Department of Mathematics, University of Oklahoma, 1990–1992.

## Honors and Awards

- *President's Excellence in Teaching Award 2017*. Texas Tech University's highest recognition to individuals for excellence in teaching.
- *Outstanding Mentor of the Year 2016, 2017*. Department of Mathematics & Statistics, Texas Tech University.
- *Graduate Professor of the Year 2011, 2017*. Texas Tech University chapter of the Society for Industrial & Applied Mathematics.

- *IMS Laha Award 2002*. Provided travel funds to present a paper at the IMS annual meeting, Banff, Canada, July 2002.
- *CLAS Research Award 2001*. Research grant in the form of two months summer salary awarded by the College of Liberal Arts & Sciences, University of Florida, Summer 2001.
- *Madison Award 2000*. Recognition of outstanding Graduate Work, Dept. of Statistics, Colorado State University, May 2000.
- *Graybill Award 1998*. Recognition of excellence in Linear Models, Dept. of Statistics, Colorado State University, May 1998.

## Professional Memberships

IMS (Institute of Mathematical Statistics); ASA (American Statistical Association); Statistical Modeling Society (SMS).

## Teaching

- Undergraduate Courses Taught: Introductory Statistics; Introduction to Biostatistics; Regression Analysis; Design of Experiments; Mathematical Statistics; Time Series Analysis; Engineering Statistics.
- Graduate Courses Taught: Applied Statistics (for non-majors); Mathematical Statistics; Time Series Analysis; Spatial Statistics; Regression Analysis; Theory of Linear Models; Stochastic Processes;; Non-parametric Statistics; Advanced Mathematical Statistics.

## Reports, Theses, and Dissertations Supervised

### Masters Reports

- Sadia Afrin, M.S., 2024, Texas Tech University.
- Jannatul Ferdous Ema, M.S., 2023, Texas Tech University.
- Sima Siami-Namini, M.S., 2020, Texas Tech University.
- Zhigang Yu, M.S., 2017, Texas Tech University.
- Xiao Feng, M.S., 2016, Texas Tech University.
- Manjari Dissanayake, M.S., 2016, Texas Tech University.
- Gouthaman Tharmathasan, M.S., 2016, Texas Tech University.
- Meichuang Wu, M.S., 2014, Texas Tech University.
- Haibo Zhang, M.S., 2014, Texas Tech University.
- Adam Mccown, M.S., 2013, Texas Tech University.
- Li Zou, M.S., 2012, Texas Tech University.
- Zhenyi Liu, M.S., 2012, Texas Tech University.
- Divya Keshamoni, M.S., 2012, Texas Tech University.
- Feng Zhang, M.S., 2011, Texas Tech University.
- Phillip Watkins, M.S., 2011, Texas Tech University.
- X. Jiang, M.S., 2011, Texas Tech University.
- X. Zhou, M.S., 2010, Texas Tech University.

- H. Ma, M.S., 2010, Texas Tech University.
- M. Wang, M.S., 2010, Texas Tech University.
- Y. Chen, M.S., 2008, Texas Tech University.
- S. Sun, M.S., 2008, Texas Tech University.
- S. Strauber, M.S., 2005, University of Florida.
- T. Mashtare, M.S., 2004, University of Florida.
- S. Ali, M.S., 2003, University of Florida.

### **Masters Theses**

- Sams Rashid, “Multivariate Regression Analysis for Continuous and Binary Response Variables”, M.S., 2024, Texas Tech University.
- Masoud Norouzi, “Application of Kalman Filter to Droplet Tracking in Microfluid Networks”, M.S., 2019, Texas Tech University.
- Elton See, “Weighted Smoothing Splines: Improving Estimation on the Boundary”, M.S., 2015, Texas Tech University (co-advised with Ram Iyer).
- Yu Hua, “Modeling and Prediction of Wind Power Data”, M.S., 2014, Texas Tech University (co-advised with Ram Iyer).
- Pratheepa Jeganathan, “Saddlepoint-Based Bootstrap Inference for Spatial Dependence in the Lattice Process”, M.S., 2013, Texas Tech University.
- Placida D. A. Dassanayake, “Local Orthogonal Polynomial Expansion for Density Estimation”, M.S., 2012, Texas Tech University (co-advised with Igor Volobouev).
- Cheng Huang, “Housing Market Analysis”, M.S., 2011, Texas Tech University (co-advised with Clyde Martin).
- Li Luo, “Using Linear Approximations to Relate the Distributions of the Highest Order Statistics from Random Samples of Different Sizes”, M.S., 2011, Texas Tech University.
- Mark J. Lira, “On the Solution of Rank Deficient Least Squares Problem”, M.S., 2011, Texas Tech University (co-advised with Ram Iyer).
- Yanxun Xu, “Quantile Versions of Holt-Winters and Seasonal Holt-Winters Forecasting Algorithms”, M.S., 2010, Texas Tech University.
- Lasantha Premarathna, “Approximate and Exact Maximum Likelihood Estimation in the Simple Linear Regression Model With Autoregressive Errors and Generalized Exponential Innovations”, M.S., 2010, Texas Tech University.
- Xiaolin Wang, “An Investigation of Common Estimators of Financial Risk Under Random Sampling”, M.S., 2008, Texas Tech University.
- Hsiao-Hsiang Hsu, “Comparing Estimators of VaR and CVaR Under the Asymmetric Laplace Distribution”, M.Sc., 2005, University of Florida.

### **Doctoral Dissertations**

- Dananjani Madiwala Liyanage, “High-dimensional Inference for Sparse Vector Autoregression Processes and Multi-dimensional Nonparametric Goodness-of-Fit Tests Reduced to One-dimension via Ordering”, Ph.D., 2024, Texas Tech University (co-advised with Igor Volobouev, Physics & Astronomy). Placement: Assistant Professor, Department of Mathematics & Statistics, University of Minnesota Duluth.

- Sajal Chakroborty, “Some new tools for multivariate statistics and machine learning with ideas from potential theory”, Ph.D., 2024, Texas Tech University (co-advised with Ram Iyer). Placement: Post-Doctoral Scholar, Department of Mathematical Sciences, Worcester Polytechnic Institute.
- Jannatul Ferdous Ema, “A Local Macroscopic Conservative (LoMaC) low rank tensor method with the discontinuous Galerkin method for the Vlasov dynamics”, Ph.D., 2024, Texas Tech University (co-advised with Wei Guo).
- Nadeesha Jayaweera, “Confidence Envelopes for Parametric Model Selection Criteria and Post-Model Selection Inference”, Ph.D., 2022, Texas Tech University. Placement: Post-Doctoral Scholar, Department of Mathematical Sciences, Worcester Polytechnic Institute.
- Basitha K. Hewa Wellalage, “Improved Inference for the Signal Significance Using Saddlepoint Approximations and Edgeworth Expansions with Extensions for Dealing with Nuisance Parameters Using Random Field Theory”, Ph.D., 2021, Texas Tech University (co-advised with Igor Volobouev, Physics & Astronomy). Placement: Department of Statistics & Computer Science, University of Kelaniya, Sri Lanka.
- Ahmed Belhad, “New Estimators for Two Forms of the Financial Systemic Risk Measure Commonly Known as Conditional-Value-at-Risk”, Ph.D., 2020, Texas Tech University. Placement: Assistant Professor, School of Mathematics, Science and Engineering, University of the Incarnate Word (San Antonio, Texas).
- Sima Siami-Namini, “Essays on Monetary Policy and Income Inequality”, Ph.D., 2020, Texas Tech University (co-advised with Conrad Lyford, Agricultural & Applied Economics). Placement: ???.
- Chamila Perera, “Coherent Multi-task Feature Selection and Prediction from Pharmacogenomics Databases and The Linearly Decreasing Stress Weibull (LDSWeibull): A New Weibull-like Distribution”, Ph.D., 2019, Texas Tech University (co-advised with Souparno Ghosh). Placement: Postdoctoral Research Associate (Division of Biostatistics), Washington University School of Medicine (St. Louis, Missouri).
- Manjari Dissanayake, “An Empirical Saddlepoint Approximation Method for Smoothing Survival Functions Under Interval-Censoring and Classification of C Elegans using Functional Data Analysis Methods”, Ph.D., 2018, Texas Tech University (co-advised with Jingyong Su). Placement: Allergen (Madison, New Jersey).
- Pratheepa Jeganathan, “Multivariate Extensions of Saddlepoint-Based Bootstrap and An Empirical Saddlepoint Approximation Method for Smoothing Survival Functions Under Right-Censoring”, Ph.D., 2016, Texas Tech University. Placement: Postdoctoral Research Fellow (Statistics), Stanford University (Stanford, California).
- Sachith Abeyesundara, “Regression Splines With Free Knots vs. Penalized Splines: A Comparative Study”, Ph.D., 2015, Texas Tech University (co-advised with Phil Smith). Placement: Assistant Professor, University of Peradeniya (Sri Lanka).
- D. Placida A. Dassanayake, “Local Orthogonal Polynomial Expansion and Empirical Saddlepoint Approximation for Density Estimation”, Ph.D., 2014, Texas Tech University (co-advised with Igor Volobouev). Placement: Instructor, Bow Valley College (Calgary, Canada).
- R. Indika P. Wickramasinghe, “Extensions of Saddlepoint-Based Bootstrap Inference with Application to the Moving Average Model of Order One”, Ph.D., 2012, Texas Tech University. Placement: Assistant Professor, Department of Mathematical Sciences, Eastern New Mexico University (Portales, New Mexico).
- Arlene H. Naranjo, “State-Space Models with Exogenous Variables and Missing Data”, Ph.D., 2007, University of Florida (co-advised with George Casella). Placement: Research Assistant Professor, Department of Epidemiology and Health Policy Research, University of Florida (Gainesville, Florida).

- Yun Zhu, “Application of Asymmetric Laplace Laws in Financial Risk Measures and Time Series Analysis”, Ph.D., 2007, University of Florida. Placement: Senior Credit Modeler, Consumer Analytics & Modeling Unit, CitiGroup (O’ Fallon, Missouri).

## **Presentations**

### **Invited Conference Presentations**

- “High-Dimensional Inference for Sparse Vector Autoregressions”, talk, *Conference of Texas Statisticians*, Houston, Texas, U.S.A., May 10, 2024.
- “High-order Asymptotic Expansions for Likelihood-based Statistics With Application to Testing for Signal Presence in Particle Physics Experiments”, talk, *Conference of Texas Statisticians* (virtual), September 18, 2020.
- “An Empirical Saddlepoint Approximation Based Method for Smoothing Survival Functions Under Right Censoring”, talk (Topic Contributed Session 106, Risk Analysis Section), *Joint Statistical Meetings*, Baltimore, Maryland, July 31, 2017.
- “Risk and Financial Models for Population Health” (remote presentation), *Cloud & Autonomic Computing Center Semi-Annual IAB Meeting*, Dallas, Texas, October 8, 2014.
- “Two recent research problems with biomedical applications”, talk, *Graduate Student & Faculty Retreat*, Graduate School of Biomedical Sciences, *Texas Tech University Health Sciences Center*, Lubbock, Texas, September 13, 2013.
- “Regression Modeling of Alloy Mechanical Properties: An Aid for the Discovery of Steels with Optimal Composition and Processing Parameters”, talk, *SACNAS Annual Conference*, Dallas, Texas, October 16, 2009.
- “Approximating the Distributions of Estimators of Financial Risk Under a Generalized Laplace Law”, talk, *International Conference on Financial Engineering*, University of Florida, Gainesville, March 24, 2006.
- “Controlling Risk via Asymmetric Residual Error Tail Constraints With an Application to Financial Returns”, talk, *International Conference on Risk Management and Quantitative Approaches in Finance*, University of Florida, Gainesville, April 8, 2005.
- “Burg Algorithms for Modeling Multivariate Subset Autoregressive Processes”, poster, *Graybill Conference on Linear Models*, Colorado State University, Fort Collins, June 13, 2001.

### **Contributed Conference Presentations**

- “The Effective Number of Parameters in Kernel Density Estimation”, talk, *International Symposium on Nonparametric Statistics*, Braga, Portugal, June 26, 2024.
- “Confidence Envelopes for Model Selection Criteria and Post-Model Selection Inference”, talk, *WNAR* (virtual), June 14, 2022.
- “High-order Asymptotic Expansions for Likelihood-based Statistics With Application to Testing for Signal Presence in Particle Physics Experiments”, talk, *Bernoulli-IMS One World Symposium* (virtual), August 24–28, 2020.
- “Improved Inference for Signal Discovery Under Exceptionally Low False Positive Error Rates”, talk, *4th International Conference on Big Data and Information Analytics*, Houston, Texas, U.S.A., December 19, 2018.
- “An Empirical Saddlepoint Approximation Based Method For Smoothing Survival Functions Under Right Censoring”, talk, *World Congress in Probability and Statistics*, Toronto, Canada, July 14, 2016.

- "Local Orthogonal Polynomial Expansion for Density Estimation", talk, *European Meeting of Statisticians*, Amsterdam, The Netherlands, July 9, 2015.
- "Saddlepoint-Based Bootstrap Inference in Dependent Data Settings", talk, *3rd Stochastic Modeling Techniques and Data Analysis International Conference*, Lisbon, Portugal, June 11, 2014.
- "Extensions of Saddlepoint-Based Bootstrap Inference With Application to the First Order Moving Average Model", talk, *Joint Statistical Meetings*, Montreal, Canada, August 6, 2013.
- "Saddlepoint-Based Bootstrap Inference in Parametric and Semiparametric Models", poster, *27th International Workshop on Statistical Modeling*, Charles University, Prague, Czech Republic, July 17, 2012.
- "Fast and Accurate Inference for the Smoothing Parameter in Semiparametric Models", talk, *4th Erich L. Lehmann Symposium*, Rice University, Houston, Texas, May 9, 2011.
- "The Hodrick-Prescott Filter: A Special Case of Penalized Spline Smoothing", talk, *Joint Statistical Meetings*, Vancouver, Canada, August 2, 2010.
- "Time Series Models With Asymmetric Laplace Innovations", talk, *Econometrics, Time Series Analysis and Systems Theory: A Conference in Honor of Manfred Deistler*, Vienna, Austria, June 20, 2009.
- "Time Series Models With Asymmetric Laplace Innovations", poster, *Joint Statistical Meetings*, Denver, Colorado, August 5, 2008.
- "Regression Modeling of Alloy Mechanical Properties: An Aid for the Discovery of Steels with Optimal Composition and Processing Parameters", talk, *12th Annual Spring Research Conference on Statistics in Industry and Technology*, Park City, Utah, June 2, 2005.
- "Practical small sample inference for order one subset autoregressive models via saddlepoint approximations", talk, *6th World Congress of the Bernoulli Society for Mathematical Statistics & Probability and 67th Annual Meeting of the Institute of Mathematical Statistics*, Barcelona, Spain, July 29, 2004.
- "Combining Analytical Model and Experimental Test Data for Optimal Determination of Failure Load Tolerance Limits", poster, *4th International Conference on Mathematical Methods in Reliability: Methodology and Practice*, Santa Fe, New Mexico, June 23, 2004.
- "Modified Burg Algorithms for Multivariate Subset Autoregression", talk, *65th Annual Meeting of the Institute of Mathematical Statistics*, Banff, Canada, July 29, 2002.
- "Burg Algorithms for Modeling Multivariate Subset Autoregressive Processes", poster, *New Researchers Conference*, Georgia Tech University, Atlanta, August 1, 2001.

### Invited Colloquia

- "The Hodrick-Prescott Filter: A Special Case of Penalized Spline Smoothing", Dept. of Quantitative Economics, *Universidad Complutense de Madrid*, Madrid, Spain, June 26, 2012.
- "Fast and Accurate Inference for the Smoothing Parameter in Semiparametric Models", Dept. of Mathematics, Division of Statistics and Applications, *Technical University of Lisbon* (Instituto Superior Técnico), Lisbon, Portugal, May 18, 2010.
- "Fast and Accurate Inference for the Smoothing Parameter in Semiparametric Models", Dept. of Biostatistics, Bloomberg School of Public Health, *Johns Hopkins University*, Baltimore, Maryland, March 17, 2010.
- "Modeling and Approximating the Distributions of Estimators of Financial Risk Under an Asymmetric Laplace Law", Dept. of Mathematics & Statistics, *University of Nevada*, Reno, February 7, 2008.
- "An Application of Quantile Regression to the Discovery of Optimal Alloys", Dept. of Mathematics & Statistics, *Texas Tech University*, Lubbock, March 28, 2007.

- “Approximating the Distributions of Estimators of Financial Risk Under an Asymmetric Laplace Law”, Dept. of Mathematics & Statistics, *Texas Tech University*, Lubbock, February 15, 2007.
- “Approximating the Distributions of Estimators of Financial Risk Under an Asymmetric Laplace Law”, Dept. of Mathematics & Statistics, *University of Missouri Kansas City*, Kansas City, February 9, 2007.
- “Approximating the Distributions of Estimators of Financial Risk Under an Asymmetric Laplace Law”, Dept. of Mathematics & Statistics, *San Diego State University*, San Diego (California), February 5, 2007.
- ”Assessing the Performance of Burg Algorithms in Fitting Multivariate Subset Autoregressions”, UF/FSU Statistics Seminar Series, *Florida State University*, Tallahassee, September 28, 2001.
- “Burg-type Algorithms for Subset Multivariate Autoregressive Processes”, *Oklahoma State University*, February 28, 2000.
- “Burg-type Algorithms for Subset Multivariate Autoregressive Processes”, *University of Florida*, February 24, 2000.

### Departmental Seminars

- “High-Dimensional Inference for Sparse Vector Autoregressions”, Dept. of Mathematics & Statistics, *Texas Tech University*, Lubbock, October 16, 2024.
- “Improved Inference for Signal Discovery Under Exceptionally Low False Positive Error Rates”, Dept. of Mathematics & Statistics, *Texas Tech University*, Lubbock, 16 October 2017.
- “Tail Mean Estimation is More Efficient than Tail Median: Evidence from the Exponential Power Distribution”, Dept. of Mathematics & Statistics, *Texas Tech University*, Lubbock, March 26, 2014 (joint with R.W. Barnard).
- “Saddlepoint-Based Bootstrap & State-Space Models: Extensions & Challenges”, Dept. of Mathematics & Statistics, *Texas Tech University*, Lubbock, September 24, 2013.
- “Who Really Won the 2009 International Mathematical Olympiad? Evidence of the Need to Adjust Test Scores for Population Size Effects”, Dept. of Mathematics & Statistics, *Texas Tech University*, Lubbock, February 14, 2011.
- “Saddlepoint-Based Bootstrap Inference for Quadratic Estimating Equations: Accurate Approximate Inference in Parametric and Semiparametric Models”, Dept. of Mathematics & Statistics, *Texas Tech University*, Lubbock, September 23, 2010.
- “Computationally Intensive Confidence Intervals for the Smoothing Parameter in Penalized Spline Regression Models”, Computational Science Seminar, *Texas Tech University*, Lubbock, April 7, 2009.
- “Time Series Models With Asymmetric Laplace Innovations”, Dept. of Mathematics & Statistics, *Texas Tech University*, Lubbock, February 4, 2009.
- “Financial Prediction With Constrained Tail Risk”, Dept. of Mathematics & Statistics, *Texas Tech University*, Lubbock, October 3, 2007.
- ”Saddlepoint-Based Bootstrap Inference for Nonlinear Regression Models”, Dept. of Statistics, *University of Florida*, September 28, 2006.
- ”Measures of Financial Risk: Connections With Quantile Regression and an Application to the Discovery of Optimal Alloys”, Dept. of Statistics, *University of Florida*, October 13, 2005.
- ”Multivariate Frailty Models with an Autoregressive Structure on the Transformed Hazards”, Dept. of Biostatistics, *University of Florida*, October 6, 2004.

- "Practical Small-Sample Inference for Order One Subset Autoregressive Models via Saddlepoint Approximations", Dept. of Statistics, *University of Florida*, November 6, 2003.

## Other

- "Lightning Presentation", TTUHSC & TTU Collaborative Meeting, Lubbock, Texas, May 15, 2019.
- "Applied Analysis of Time-Dependent Data", U. of Florida Week of Short Courses, Orlando, Florida, March 10–12, 2003.

## Publications

### Books

- Casals, J., Garcia-Hiernaux, A., Jerez, M., Sotoca, S., and **Trindade, A.A.** (2016). *State-Space Methods for Time Series Analysis: Theory, Applications, and Software*. CRC Press: Boca Raton.

### Refereed Journal Articles

52. Usala, S.J., Vineyard, D.D., Kastis. M., Trindade, A.A., Gill, H.S. (2024), "Comparison of Day-Specific Serum LH, Estradiol, and Progesterone with MiraTM Monitor Urinary LH, Estrone-3-glucuronide, and Pregnanediol-3-glucuronide Levels in Ovulatory Cycles", *Medicina*, 60(8), 1207 (12 pp.). [doi:10.3390/medicina60081207].
51. Alzahabi, A., Trindade, A.A., and Kamel, A. (2024). "Optimizing estimated ultimate recovery in horizontal wells through data-driven analytics", *Geoenergy Science and Engineering*, 239, 212901 (12 pp.). [doi.org/10.1016/j.geoen.2024.212901].
50. Jayaweera, N., and **Trindade, A.A.** (2024), "How Certain are You of Your Minimum AIC or BIC Values?", *Sankhya*, 86-A(Part 2), 880–919.
49. Williams, E., Naandi, A., Nam, V., Allen, L., **Trindade, A.A.**, Kosiewicz, M. and Jonsson, C. (2023), "Modeling the Immune Response for Pathogenic and Nonpathogenic Orthohantavirus Infections in Human Lung Microvasculature Endothelial Cells", *Viruses*, 15, 1806 (18 pp.).
48. Volobouev, I. and **Trindade, A.A.** (2023), "High-Order Asymptotic Approximations for Improved Inference Under Exceptionally Low False Positive Error Rates", *Test*, 32, 1276—1306.
47. Alzahabi, A., **Trindade, A.A.**, Kamel, A. (2023), "Horizontal Well Completions Using Data Analytics", *Results in Engineering*, 18, 101143 (12 pp.).
46. Belhad, A., Lauria, D. and **Trindade, A.A.** (2022), "Nonparametric Estimation of Systemic Risk Via Conditional Value-at-Risk", *The Journal of Risk*, 25(1), 1–21.
45. Usula, S.J., Alliende, M.E. and **Trindade, A.A.** (2022), "Algorithms with Area Under the Curve for Daily Urinary Estrone-3-Glucuronide and Pregnanediol-3-Glucuronide to Signal the Transition to the Luteal Phase", *Medicina*, 58(10), 119 (10 pp.). [doi:10.3390/medicina 58010119].
44. Alzahabi, A., **Trindade, A.A.**, Kamel, A., Harouaka, A., Baustian, W. and Campbell, C. (2021), "Optimal Drawdown for Woodford and Mayes in the Anadarko Basin Using Data Analytics", *SPE Production & Operations*, 36(03), 572—582.
43. Usula, S.J., Alliende, M.E. and **Trindade, A.A.** (2021), "The Fertility Indicator Equation Using Serum Progesterone and Urinary Pregnanediol-3-Glucuronide for Assessment of Ovulatory to Luteal Phase Transition", *Medicina*, 57(02), 134 (10 pp.). [doi:10.3390/medicina57020134].
42. Usula, S.J. and **Trindade, A.A.** (2020), "A Novel Fertility Indicator Equation Using Estradiol Levels for Assessment of Phase of the Menstrual Cycle", *Medicina*, 56(11), 555 (10 pp.). [doi:10.3390/medicina56110555].
41. Dissanayake, M. and **Trindade, A.A.** (2020), "An Empirical Saddlepoint Approximation Method for Producing Smooth Survival and Hazard Functions Under Interval-Censoring", *Statistics in Medicine*, 39(21), 2755–2766.



40. **Trindade, A.A.** and Usula, S.J. (2020), “Cervical-Vaginal Mucin in Fertility Assessment: CA125 as a Predictor of the Fertile Phase of the Normal Menstrual Cycle”, *Medicina*, 56(6), 304 (9 pp.) [doi:10.3390/medicina56060304].
39. **Trindade, A.A.**, Shirvani, A. and Ma, X. (2020), “A Socioeconomic Well-Being Index”, *Applied Economics and Finance*, 7(4), 48–62.
38. Alzahabi, A., **Trindade, A.A.**, Kamel, A. and Harouaka, A. (2020), “Optimizing Initial Oil Production of Horizontal Wolfcamp Wells Utilizing Data Analytics”, *Journal of Petroleum Exploration and Production Technology*, 10(6), 2357–2371.
37. Siامي-Namini, S., Lyford, C. and **Trindade, A.A.** (2020), “The Effects of Monetary Policy Shocks on Income Inequality Across U.S. States”, *Economic Papers*, 39(3), 204–221.
36. Barnard, R.W., Perera, C., Surles, J. and **Trindade, A.A.** (2019), “The Linearly Decreasing Stress Weibull (LDSWeibull): A New Weibull-like Distribution”, *Journal of Statistical Distributions and Applications*, 6(11), 1–21.
35. Jeganathan, P., Randrianampy, N.V., Paige, R.L. and **Trindade, A.A.** (2019), “An Empirical Saddlepoint Approximation Based Method for Smoothing Survival Functions Under Right Censoring”, *The Canadian Journal of Statistics*, 47(2), 238–261.
34. Siامي-Namini, S., Hudson, D., **Trindade, A.A.** and Lyford, C. (2019), “Commodity Price Volatility and U.S. Monetary Policy: Commodity Price Overshooting Revisited”, *Agribusiness*, 35(2), 200–218.
33. Kroll, T., **Trindade, A.A.**, Asikis, A., Salas, M., Lau, M., Saenz, C., Head, M., Prematilake, C. and Perry, C. (2018), “The DUT Task: A Novel Experimental Paradigm to Investigate the Variability of Eye Movements in Whole-text Reading for Meaning”, *Journal of Research Design & Statistics in Linguistics & Communication Science*, 4.2, 124–143.
32. Volobouev, I. and **Trindade, A.A.** (2018), “Improved Inference for the Signal Significance”, *Journal of Instrumentation*, 13 P12011, 1–25.
31. Barnard, R.W., Pearce, K. and **Trindade, A.A.** (2018), “When is Tail Mean Estimation More Efficient than Tail Median: Answers and Implications for Quantitative Risk Management”, *Annals of Operations Research*, 262(1), 47–65.
30. Dassanayake, D.P.A., Volobouev, I. and **Trindade, A.A.** (2017), “Local Orthogonal Polynomial Expansion for Density Estimation”, *Journal of Nonparametric Statistics*, 29(4), 806–830.
29. Alzahabi, A., El-Bambi, A., **Trindade, A.A.**, and Soliman, M. (2017), “Estimation of Dew Point Pressure from Down-Hole Fluid Analyzer Data”, *Journal of Petroleum Exploration and Production Technology*, 7(4), 1173–1183.
28. Liu, Z., Smith, P., Park, T., **Trindade, A.A.** and Hui, Q. (2017), “Automated Contaminant Source Localization in Spatio-Temporal Fields: A Response Surface and Experimental Design Approach”, *IEEE Transactions on Systems, Man and Cybernetics: Systems*, 47(3), 569–583.
27. Lira, M., Iyer, R., **Trindade, A.A.**, and Howle, V. (2016), “QR versus Cholesky: A Probabilistic Analysis”, *International Journal of Numerical Analysis and Modeling*, 13(1), 114–121.
26. Jeganathan, P., Paige, R.L. and **Trindade, A.A.** (2015), “Saddlepoint-Based Bootstrap Inference for Spatial Dependence in the Lattice Process”, *Spatial Statistics*, 12, 1–14.
25. Barnard, R.W., **Trindade, A.A.**, and Wickramasinghe, R.I.P. (2014), “Some Results for Autoregressive Moving Average Models Under Exponential Power Distributions”, *ProbStat Forum*, 7(October), 65–77.
24. Paige, R.L., **Trindade, A.A.**, and Wickramasinghe, R.I.P. (2014), “Extensions of Saddlepoint-Based Bootstrap Inference”, *Annals of the Institute of Statistical Mathematics*, 66(5), 961–981.

23. Naranjo, A., **Trindade, A.A.**, and Casella, G. (2013), “Extending the State-Space Model to Accommodate Missing Values in Responses and Covariates”, *Journal of the American Statistical Association*, 108(501), 202–216.
22. Paige, R.L. and **Trindade, A.A.** (2013), “Fast and Accurate Inference for the Smoothing Parameter in Semiparametric Models”, *Australian & New Zealand Journal of Statistics*, 55(1), 25–41.
21. Chadha, P. and **Trindade, A.A.** (2013), “Phylogenetic Analysis of pbp Genes in Treponemes”, *Infection Ecology and Epidemiology*, 3, 18636–<http://dx.doi.org/10.3402/iee.v3i0.18636> (4 pages).
20. Chadha, P. and **Trindade, A.A.** (2012), “Phylogenetic Analysis of Genetic Diversity of Hemolysins in Leptospira”, *Journal of Proteomics & Bioinformatics*, 5(7), 152–154.
19. **Trindade, A.A.** and Xu, Y. (2011), “Quantile Versions of Holt-Winters Forecasting Algorithms”, *Journal of Statistics: Advances in Theory and Applications*, 5(1), 15–35.
18. Barnard, R.W. and **Trindade, A.A.** (2010), “An Improved Asymptotic Approximation for the First Moment of Order Statistics From a Generalized Exponential Distribution”, *Far East Journal of Theoretical Statistics*, 33(1), 1–11.
17. **Trindade, A.A.**, Zhu, Y., and Andrews, B. (2010), “Time Series Models With Asymmetric Laplace Innovations”, *Journal of Statistical Computation and Simulation*, 80(12), 1317–1333.
16. Paige, R.L. and **Trindade, A.A.** (2010), “The Hodrick-Prescott Filter: A Special Case of Penalized Spline Smoothing”, *Electronic Journal of Statistics*, 4, 856–874.
15. Paige, R.L., **Trindade, A.A.**, and Fernando, H. (2009), “Saddlepoint-Based Bootstrap Inference for Quadratic Estimating Equations”, *Scandinavian Journal of Statistics*, 36(1), 98–111.
14. Paige, R.L. and **Trindade, A.A.** (2008), “Practical Small Sample Inference for Single Lag Subset Autoregressive Models”, *Journal of Statistical Planning and Inference*, 138(7), 1934–1949.
13. **Trindade, A.A.**, Uryasev, S., Shapiro, A., and Zrazhevsky, G. (2007), “Financial Prediction with Constrained Tail Risk”, *Journal of Banking and Finance*, 31, 3524–3538.
12. Pichardo, J.C., **Trindade, A.A.**, Brindle, J.M., and Bolch, W.E. (2007), “Method for Estimating Skeletal Spongiosa Volume and Active Marrow Mass in the Adult Male and Adult Female”, *The Journal of Nuclear Medicine*, 48(11), 1880–1888.
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10. Golodnikov, A., Macheret, Y., **Trindade, A.A.**, Uryasev, S., and Zrazhevsky, G. (2007), “Optimization of Composition and Processing Parameters for the Development of Steel Alloys: A Statistical Model-Based Approach”, *Journal of Industrial and Management Optimization*, 3(3), 489–501.
9. **Trindade, A.A.** and Zhu, Y. (2007), “Approximating the Distributions of Estimators of Financial Risk Under an Asymmetric Laplace Law,” *Computational Statistics and Data Analysis*, 51(7), 3433–3447.
8. Brindle, J.M., **Trindade, A.A.**, Pichardo, J.C., Shah, A.P., Jokisch, D.W., Patton, P.W., and Bolch, W.E. (2006), “A Linear Regression Model for Predicting Patient-Specific Total Skeletal Spongiosa Volume for Use in Molecular Radiotherapy Dosimetry”, *The Journal of Nuclear Medicine*, 47(11), 1875–1883.
7. Brindle, J.M., **Trindade, A.A.**, Pichardo, J.C., Myers, S.L., Shah, A.P., and Bolch, W.E. (2006), “CT Volumetry of the Skeletal Tissues”, *Medical Physics*, 33(10), 3796–3803.
6. **Trindade, A.A.**, and Uryasev, S. (2006), “Improved Tolerance Limits by Combining Analytical and Experimental Data: An Information Integration Methodology”, *Journal of Data Science*, 4(3), 371–386.

5. Golodnikov, A., Macheret, Y., **Trindade, A.A.**, Uryasev, S., and Zrazhevsky, G. (2005), “Statistical Modeling of Composition and Processing Parameters for Alloy Development”, *Modelling and Simulation in Materials Science and Engineering*, 13, 633–644.
4. Brockwell, P.J., Dahlhaus, R., and **Trindade, A.A.** (2005), “Modified Burg Algorithms for Multivariate Subset Autoregression,” *Statistica Sinica*, 15(1), 197–213.
3. Brockwell, P.J., Davis, R.A., and **Trindade, A.A.** (2004), “Asymptotic Properties of Some Subset Vector Autoregressive Process Estimators,” *Journal of Multivariate Analysis*, 90(2), 327–347.
2. **Trindade, A.A.** (2003), “Implementing Modified Burg Algorithms in Multivariate Subset Autoregressive Modeling”, *Journal of Statistical Software*, 8(5), 1–68.
1. Breidt, F.J., Davis, R.A., and **Trindade, A.A.** (2001), “Least Absolute Deviation Estimation for All-Pass Time Series Models”, *The Annals of Statistics*, 29(4), 919–946.

### Book Chapters and Conference Proceedings

- Alzahabi, A., **Trindade, A.A.**, Kamel, A., Harouaka, A. and Campbell, C., “Data Determine The Optimal Drawdown For Woodford & Mayes In The Anadarko Basin”, *Proceedings of the SPE Annual Technical Conference and Exhibition*, Denver, Colorado (U.S.A.), 5-7 October 2020, SPE-201660 paper.
- Alzahabi, A., Kamel, A., Harouaka, A. and **Trindade, A.A.**, “A Model for Estimating Optimal Spacing of the Wolfcamp in the Delaware Basin”, *Proceedings of the Unconventional Resources Technology Conference*, Austin, Texas (U.S.A.), 20-22 July 2020, URTEC 2645 paper.
- Alzahabi, A., Kamel, A., **Trindade, A.A.** and Baustian, W., “Optimal Spacing for the Wolfcamp in the Delaware Basin using Data Analytics: A Case-Study”, *Proceedings of the 54th U.S. Rock Mechanics/Geomechanics Symposium* (virtual), 28-31 June 2020, ARMA 20-A-1317 paper.
- Alzahabi, A., Kamel, A., **Trindade, A.A.** and Baustian, W., “Data Analytics Quickly Predict Number of Fracture Stages in Horizontal Wells”, *Proceedings of the 53rd U.S. Rock Mechanics/Geomechanics Symposium*, New York, New York (U.S.A.), 23-26 June 2019, ARMA-19-475 paper.
- Alzahabi, A., **Trindade, A.A.**, Kamel, A. and Baustian, W., “Predicting Fracture Clusters, Cluster Spacing and Perforations of Horizontal Wells Using Data Analytics”, *Proceedings of the 53rd U.S. Rock Mechanics/Geomechanics Symposium*, New York, New York (U.S.A.), 23-26 June 2019, ARMA-19-23 paper.
- Alzahabi, A., Soliman, M., Thakur, G., **Trindade, A.A.** and Stegent, N., “Horizontal Completion Fracturing Techniques Using Data Analytics: Selection and Prediction”, *Proceedings of the 51st U.S. Rock Mechanics/Geomechanics Symposium*, San Francisco, California (U.S.A.), 25-28 June 2017, ARMA 2017-0013 paper.
- Liu, Z., Smith, P., Park, T., **Trindade, A.A.** and Hui, Q. (2014), “Novel Response Surface Methodologies with Design of Experiment for Source Localization in Unknown Spatial-Temporal Fields”, In: *Proceedings of the 53rd IEEE Conference on Decision and Control*, Los Angeles, California (U.S.A.), 15-17 December 2014, 5724–5729.
- De Oliveira, V. and **Trindade, A.A.** (2014), “Spatial Statistics”, In: *Encyclopedia of Social Network Analysis and Mining*, R. Alhajj and J. Rokne (Eds.), New York: Springer, 1976–1990.
- Paige, R.L. and **Trindade, A.A.** (2012), “Saddlepoint-Based Bootstrap Inference in Parametric and Semiparametric Models”, In: *Proceedings of the 27th International Workshop on Statistical Modelling*, A. Komarek and S. Nagy (Eds.), Prague, Czech Republic, Vol. II, 679–684.
- Golodnikov, A., Macheret, Y., **Trindade, A.A.**, Uryasev, S. and Zrazhevsky, G. (2007), “Estimating the Probability Distributions of Alloy Impact Toughness: a Constrained Quantile Regression Approach”, In: *Cooperative Systems: Control and Optimization*, D. Grundel *et al* (Eds.), Springer Berlin: Lecture Notes in Economics and Mathematical Systems, Vol. 588, 269–283.

- **Trindade, A.A.**, and Uryasev, S. (2006), "Combining Model and Test Data for Optimal Determination of Percentiles and Allowables: CVaR Regression Approach - Part II", In: *Robust Optimization-Directed Design*, A.J. Kurdila *et al* (Eds.), Springer Netherlands: Nonconvex Optimization and Its Applications, Vol. 81, 209–246.
- **Trindade, A.A.**, and Uryasev, S. (2006), "Combining Model and Test Data for Optimal Determination of Percentiles and Allowables: CVaR Regression Approach - Part I", In: *Robust Optimization-Directed Design*, A.J. Kurdila *et al* (Eds.), Springer Netherlands: Nonconvex Optimization and Its Applications, Vol. 81, 179–207.

### Non-Refereed Publications and Reports

- "Linear Models and the Relevant Distributions and Matrix Algebra", by D. Harville. *Journal of the American Statistical Association* book review, 2019, 114(528), 1928–1929.
- "Assessing Product Reliability in the Presence of Censoring - Part II: Examples with Minitab", Technical Report prepared for Encision Inc., August 2005, 13 pages.
- "Assessing Product Reliability in the Presence of Censoring - Part I: Concepts and Methods", Technical Report prepared for Encision Inc., July 2005, 13 pages.
- Uryasev, S., **Trindade, A.A.**, and Uryasev, S., "A Detailed Study of the CVaR Regression Method for Determination of A-Basis and B-Basis Allowables", Technical Report prepared for The Boeing Company, February 2004, 51 pages.
- Uryasev, S., **Trindade, A.A.**, and Uryasev, S., "Combining Model Analysis and Test Data for Optimal Determination of A-Basis and B-Basis Allowables", Technical Report prepared for The Boeing Company, November 2003, 44 pages.
- "Time-Series Forecasting", by C. Chatfield. *Journal of the American Statistical Association* book review, 2002, 97, 920–920.

### Patents

- *Inventors*: Alzahabi, A., Soliman, M., Thakur, G., and **Trindade, A.A.**, "Horizontal Completion Fracturing Techniques Using Data Analytics: Selection and Prediction", *U.S. Patent Pending*, 2017.

## Grant Funding Activity

### Proposals Funded Externally

- Co-Principal Investigator*, "Collaborative Research: Modeling Immune Dynamics of RNA Viruses In Reservoir and Nonreservoir Species", National Science Foundation, Mathematical Biology Program (DMS-1517719), September 2015 - August 2019. Total awarded: \$349,803. Collaborative effort with lead PI L.J. Allen (Texas Tech Univ.), and Co-PIs C. Jonsson & M. Kosiewicz (University of Louisville Research Foundation Inc.).
- Co-Principal Investigator*, "Risk and Financial Models for Population Health", Covenant Health (sponsoring organization), Cloud and Autonomic Computing Center at Texas Tech University (awarding organization), lead P.I. Ravi Vadapalli, Co-PI Jennifer Farris (Industrial Engineering), September 2014-August 2015. Total awarded: \$105,000.
- Principal Investigator*, "Saddlepoint-Based Bootstrap Inference for Quadratic Estimating Equations", National Security Agency (H98230-08-1-0071), Young Investigator's Grant Program, April 2008 - April 2010. Total awarded: \$29,992. Collaborative effort with R.L. Paige (Texas Tech University).
- Co-Principal Investigator*, "Winter Workshop on Frontiers of Theoretical Statistics", National Science Foundation (DMS-0536938), A. Khuri P.I., October 2005-September 2006. Total awarded: \$10,000 on 11/16/2005 (used to cover conference costs).

*Co-Principal Investigator*, "NSF Conference in the Mathematical Sciences on Functional Data Analysis", National Science Foundation (DMS-0229028), G. Casella P.I., October 2002-September 2003. Total awarded: \$13,500 on 07/31/2002 (used to cover conference costs).

## Proposals Funded Internally

*Co-Principal Investigator*, "Statistical modeling of eye movement variability and complexity in whole-text reading", TTUHSC School of Health Professions Research Support Grant Program, Tobias A. Kroll P.I. (Dept. of Speech, Language, and Hearing Sciences, Texas Tech Univ. Health Sciences Center), February 2017 - February 2018. Total awarded: \$9,380.

*Principal Investigator*, "Saddlepoint approximations to the distributions of Yule-Walker and Burg coefficient estimators of subset autoregressive models with subset size one", College of Liberal Arts & Sciences Research Award, University of Florida, Summer 2001. Total awarded: \$9,660. (Proposal was one of 35 awards made out of 62 proposals submitted.)

## Proposals Submitted

*Principal Investigator*, "The potential energy metric and delayed regularization: new paradigms in multidimensional inference", National Science Foundation, Statistics Program, September 2025 - August 2028. Total: \$650,966. Collaborative effort with Co-PIs Igor Volobouev & Ram Iyer (Texas Tech Univ.).

*Consultant*, "A novel algorithm and immunoassay to more accurately predict and track the menstrual cycle and fertile window in women", DHHS - National Institutes of Health, Harvinder Gill P.I. (Dept. of Chemical Engineering, Texas Tech Univ.), 9/1/2023 - 8/31/2028. Total requested: \$3,761,027.

*Principal Investigator*, "Orthogonal Decompositions: Density Estimation, Goodness-of-Fit, and Inverse Problems", National Science Foundation, Statistics Program, September 2022 - August 2025. Total: \$364,170. Collaborative effort with Co-PI Igor Volobouev (Texas Tech Univ.).

*Consultant*, "Defining glycan and glycopeptide isomeric signatures of Alzheimer's Disease by MS and advanced QM/MM modeling", DHHS - National Institutes of Health, Yehia Mechref P.I. (Dept. of Chemistry & Biochemistry, Texas Tech Univ.), 9/1/2021 - 8/31/2025. Total requested: \$1,624,912.

*Consultant*, "Defining the elution orders of Glycan and Glycopeptide isomers by advanced QM/MM modeling", NIH - National Center for Complementary and Alternative Medicine, Yehia Mechref P.I. (Dept. of Chemistry & Biochemistry, Texas Tech Univ.), 9/1/2021 - 8/31/2025. Total requested: \$1,640,860.

*Co-Principal Investigator*, "Sequential normal scores: a new procedure for surveillance of time series data", Food and Drug Administration, William J. Conover P.I. (Dept. of Mathematics & Statistics, Texas Tech Univ.), 9/1/2019 - 8/31/2022. Total requested: \$1,298,193.

*Principal Investigator*, "Prediction of reading task group membership from spatio-temporal eye gaze patterns", Presidents' Collaborative Research Initiative, Texas Tech University Institutions seed grant program, Tobias A. Kroll Co-PI (Dept. of Speech, Language, and Hearing Sciences, TTUHSC), September 2017 - August 2018. Total requested: \$12,389.

*Co-Principal Investigator*, "NRT-DESE: Cyber Defense of Critical Infrastructure Systems", National Science Foundation, Vittal S. Rao P.I. (Dept. of Electrical & Computer Engineering, Texas Tech Univ.), September 2014 - August 2019. Total requested: \$3,000,000.

*Principal Investigator*, "Collaborative Research: Facilitating Second Order Inference via Saddlepoint Methods", National Science Foundation, Statistics Program (DMS), June 2014 - May 2017. Total requested: \$241,409. Collaborative effort with R.L. Paige (Missouri University of Science and Technology).

*Principal Investigator*, "Collaborative Research: Facilitating Second Order Inference via Saddlepoint Methods", National Security Agency, Standard Grant Program, June 2015 - May 2016. Total requested: \$29,249. Collaborative effort with R.L. Paige (Missouri University of Science and Technology).

*Principal Investigator*, “Collaborative Research: Innovative Improvements in Small-Sample Inference via Saddlepoint Methods”, National Science Foundation, Statistics Program (DMS), June 2013 - May 2016. Total requested: \$234,089. Collaborative effort with R.L. Paige (Missouri University of Science and Technology).

*Principal Investigator*, “Collaborative Research: Innovative Improvements in Small-Sample Inference via Saddlepoint Methods”, National Security Agency, Standard Grant Program, June 2014 - May 2016. Total requested: \$53,596. Collaborative effort with R.L. Paige (Missouri University of Science and Technology).

*Principal Investigator*, “12th Annual Red-Raider Mini-Symposium: Computational and Theoretical Challenges in Interdisciplinary Predictive Modeling Over Random Fields”, Oak Ridge Associated Universities (ORAU), June 2012-June 2013. Total requested: \$3,000.

*Principal Investigator*, “12th Annual Red-Raider Mini-Symposium: Computational and Theoretical Challenges in Interdisciplinary Predictive Modeling Over Random Fields”, National Science Foundation, June 2012-June 2013. Total requested: \$16,000.

*Co-Investigator*, “Biophysical and biochemical abnormalities in the cervicalvaginal secretions of women with PCOS and type 2 diabetes”, American Diabetes Association, January 2012-December 2015. Collaborative effort with lead P.I. G. McKenna, Ph.D. (Materials Science, Texas Tech U.), and S. Usala, M.D., Ph.D. (Amarillo Medical Specialists). Total requested: \$600,000.

*Principal Investigator*, “Collaborative Research: Risk Analysis and Safeguarded Optimization with General Deviation and Error Measures”, National Science Foundation, Operations Research Program (CMMI), June 2011-May 2014. Collaborative effort with lead P.I. S. Uryasev (U. of Florida), R.T. Rockafellar (U. of Washington), and M. Zabaranin (Stevens Institute of Technology). Total requested: \$177,880.

*Principal Investigator*, “Collaborative Research: Saddlepoint-Based Bootstrap Inference: Fast and Accurate Inference Under Estimating Equations With Tractable Moment Generating Functions”, National Security Agency, Standard Grant Program, June 2012 - May 2014. Total requested: \$63,387. Collaborative effort with R.L. Paige (Missouri University of Science and Technology).

*Principal Investigator*, “Collaborative Research: Saddlepoint-Based Bootstrap Inference: Fast and Accurate Inference Under Estimating Equations With Tractable Moment Generating Functions”, National Science Foundation, Statistics & Probability Program (DMS), June 2011 - May 2014. Total requested: \$237,304. Collaborative effort with R.L. Paige (Missouri University of Science and Technology).

*Principal Investigator*, “Collaborative Research: Saddlepoint-Based Bootstrap Inference for Multivariate Quadratic Estimating Equations”, National Security Agency, Standard Grant Program, June 2011 - May 2013. Total requested: \$49,134. Collaborative effort with R.L. Paige (Missouri University of Science and Technology).

*Principal Investigator*, “Collaborative Research: Saddlepoint-Based Bootstrap Inference for Multivariate Quadratic Estimating Equations”, National Science Foundation, Statistics & Probability Program (DMS), June 2010 - May 2013. Total requested: \$204,936. Collaborative effort with R.L. Paige (Missouri University of Science and Technology).

*Co-Principal Investigator*, “Linking Public Sustainability to Public Investment Expenditure”, Center for Retirement Research at Boston College, M.C. Farmer P.I. (Dept. of Agricultural & Applied Economics, Texas Tech Univ.), Summer 2009. Collaborative effort with E.J. Belasco (Dept. of Agricultural & Applied Economics, Texas Tech Univ.). Total requested: \$43,197.

*Subcontractor*, “Combining Different Sources of Information for Estimating Percentiles of Probability Distributions: An Information Integration Methodology”, Office of Naval Research, Information Fusion and Decision Science Program, April 2009-April 2012. Collaborative effort with lead P.I. S. Uryasev (U. of Florida), and M. Zabaranin (Stevens Inst. of Technology). Total requested: \$49,953.

*Principal Investigator*, "Collaborative Research: Risk and Deviation Measures in Safeguarded Optimization and Estimation", National Science Foundation, Operations Research Program (CMMI), June 2009-May 2012. Collaborative effort with lead P.I. S. Uryasev (U. of Florida), R.T. Rockafellar (U. of Washington), and M. Zabarankin (Stevens Institute of Technology). Total requested: \$242,464. (Resubmission.)

*Principal Investigator*, "Collaborative Research: Deviation Measures in Risk Analysis and Optimization", National Science Foundation, Operations Research Program (CMMI), June 2008-May 2011. Collaborative effort with lead P.I. S. Uryasev (U. of Florida), R.T. Rockafellar (U. of Washington), and M. Zabarankin (Stevens Institute of Technology). Total requested: \$218,419. (Resubmission.)

*Co-Principal Investigator*, "FRG: Collaborative Research: General Deviation Measures: New Directions in Statistics From an Optimization Perspective", National Science Foundation, Focused Research Groups in the Mathematical Sciences Program (DMS), S. Uryasev P.I., May 2007-April 2010. Collaborative effort with R.T. Rockafellar (U. of Washington) and M. Zabarankin (Stevens Institute of Technology).

*Principal Investigator*, "Exploiting Pseudo Parameter Orthogonality for Improving Small Sample Inference", National Security Agency, Young Investigator's Grant Program, Summer 2007 and Summer 2008. Total requested: \$30,000. Collaborative effort with R.L. Paige (Texas Tech University).

*Principal Investigator*, "Collaborative Research: Pseudo Parameter Orthogonality for Small Sample Inference", National Science Foundation, Statistics & Probability Program (DMS), May 2006-April 2008. Total requested: \$205,460. Collaborative effort with R.L. Paige at Texas Tech University. (Resubmission.)

*Co-Principal Investigator*, "Materials World Network: Predicting Properties of Composite Materials by Statistically Integrating Information", National Science Foundation, World Materials Network Program (DMR), May 2006-April 2008. Total requested: \$385,488. Collaborative effort with lead P.I. S. Uryasev (University of Florida).

*Principal Investigator*, "Collaborative Research: Pseudo Parameter Orthogonality for Small Sample Inference", National Science Foundation, Statistics & Probability Program (DMS), May 2005-April 2007. Total requested: \$176,849. Collaborative effort with R.L. Paige at Texas Tech University. (Resubmission.)

*Principal Investigator*, "Collaborative Research: Pseudo Parameter Orthogonality for Small Sample Inference", National Science Foundation, Statistics & Probability Program (DMS), May 2004-April 2006. Total requested: \$161,555. Collaborative effort with R.L. Paige at Texas Tech University.

*Co-Principal Investigator*, "Statistical investigation of a new class of asymmetric measures of deviation", National Science Foundation, Statistics & Probability Program (DMS), G. Casella P.I., May 2003-May 2005. Total requested: \$408,400. (Resubmission.)

*Principal Investigator*, "Some Problems in Multivariate Subset Autoregression", National Science Foundation, Statistics & Probability Program (DMS), June 2002-May 2005, Total requested: \$83,314. Solo effort, no collaborators.

*Co-Principal Investigator*, "Conditional Value-at-Risk: Applications in Statistics", National Science Foundation, Focused Research Groups in the Mathematical Sciences Program (DMS), S. Uryasev P.I., January 2002-December 2004, Total requested: \$600,000.

## Paid Consultancies

- *Scott Laboratories, Inc., 2022*. Provided a set of 50 slides explaining the concepts and principles of actuarial life models.
- *Harvinder S. Gill, PhD, 2013* (Dept. of Chemical Engineering, Texas Tech University). Provided statistical consultation on the NIH funded project "Nanoengineered virus-mimics as 'lego-templates' for design of a universal influenza A vaccine".

- *Encision, Inc., 2005* (Boulder, Colorado). Contracted for a reliability study on medical devices. This work resulted in 2 unpublished reports.
- *American Optimal Decisions, 2004–2005* (Gainesville, Florida). Subcontracted for a materials science research project funded by the Institute for Defence Analysis that aimed to develop new steels. This work resulted in 3 papers with Uryasev and Macheret as senior authors.
- *American Optimal Decisions, 2003–2004* (Gainesville, Florida). Subcontracted as primary statistical consultant on a reliability project with The Boeing Company funded by DARPA. This work resulted in 2 unpublished reports and 3 papers with Uryasev as senior author.

## Departmental Service

- *Doctoral Committee Member:*
  - 2024: Fahad Mostafa; Himali Seneviratne Kalanchige.
  - 2023: Md Sakhawat Hossain; Chathuri Perera.
  - 2022: Abishaki Kundu (Industrial & Systems Engineering); Yuan Hu; Ruwani Herath.
  - 2021: Abootaleb Shirvani; Dong Xu.
  - 2018: Quan Hoang; Purna Gamage.
  - 2017: Yu Hua (deceased); Joshua Mayer.
  - 2015: Li Luo.
  - 2014: Hemalika Abeysundara; Scott Smith; Cong Cui; Danush Wijekularathna.
  - 2012: George Gaines; Siming Li.
  - 2011: Eliza Wang.
- *Masters Committee Member:*
  - 2024: Andras Horvath; Maleka Pujari.
  - 2022: Sajal Chakroborty; Md Saiful Saif.
  - 2021: Cole Long.
  - 2019: Pooya Aavani.
  - 2017: Huiyan Shao; Farzana Nasrin, Quinn Pearce; Annabel Meade; Yiling Qian.
  - 2016: Sara Biesiadny, Lewis Owens.
  - 2015: Jonathan Adams, Purna Gamage.
  - 2014: Josh Guenther.
  - 2013: Jianjun Zheng, Benoit Ahanda.
  - 2011: Jiaquan Zhou, Yu Zhang, Jing Yang, Xiaolei Zhang, Jennifer Tang.
  - 2010: Sachith Abeysundara, Hemalika Abeysundara.
  - 2009: Li Yu, Haifeng Wu, Ning Wang, Uzair Muhammad.
- *Junior Faculty Assessment/Mentoring:*
  - Postdoctoral Mentor, Dr. Davide Lauria, 2018–2020.
  - Mentor, Dr. Dan Cheng, 2016–2018.
  - Mentor, Dr. Leif Ellingson, 2011–2016.
  - *3rd-Year Review Committee*, Angela Peace, Spring 2018 (Member).
  - *3rd-Year Review Committee*, Souparno Ghosh, Spring 2015 (Chair).
- Associate Chair, *Undergraduate Studies*, 2017–2019.



- Chair, *Hiring Committee*, AY 2015–2016.
- Chair, *Travel Committee*, Spring 2013.
- Co-Organizer, *2021 Conference of Texas Statisticians*, October 2021.
- Co-Organizer, *12th Annual Red Raider Mini-Symposium*, “Computational and Theoretical Challenges in Interdisciplinary Predictive Modeling Over Random Fields”, 26 October 2012.
- Member, *Distinguished Lecture Committee*, 2012–2017.
- Member, *Executive Committee*, 2011–2013, 2015–2017, 2023–2025.
- Member, *M&S Strategic Planning Committee*, 2011–2012.
- Member, *Hiring Committee*, 2011, 2012, 2013, 2016.
- Member, *Graduate Committee*, 2008–2010, 2013–2015, 2021–2023.
- Member, *Textbook Committee*, MATH 3342, Spring 2009.
- Chair, *Actuarial Science Minor Development Committee*, AY 2008–2009.
- Organizer of the *Statistics Seminar* (MATH 5104), 2007–2013.
- Presentation to Graduate Students: “Overview of My Research Interests”, Dept. of Mathematics & Statistics, SIAM Mini-Symposium, *Texas Tech University*, Lubbock (2007-10-25, 2008-10-15).
- Graduate teaching assistant evaluations conducted: 2 students in 2008; 3 students in 2009; 4 students in 2010; 4 students in 2011; 4 students in 2012; 2 students in 2016; 2 students in 2018.
- Judge, *SIAM Graduate Student Research Day*: 2008, 2010, 2019.
- Undergraduate Research Involvement:
  - Mao Dai, Honors Thesis, Spring 2016 (*Reader*).
- Supervision of Honors Credit:
  - E. Powell, MATH 4343, Spring 2010.
  - K. Shipley, MATH 4342, Fall 2008.

### Departmental Service at the University of Florida

- Advisor, *Quantitative Finance co-PhD* (Statistics), 2002–2007.
- Computing Committee (2006–2007).
- Short Courses Committee (Chair, 2005).
- Department of Statistics Annual Symposium (Organizing Committee, 2002–2006).
- Departmental Colloquium (Chair, 2001–2003).
- Redesign of Department Webpage Committee (Co-Chair, 2001–2003).
- Investigation of Web-Based Technologies Committee (2001).

### College & University Service

- *Doctoral Committee Member*:
  - Ahmed Alzahabi (Petroleum Engineering, 2016).

- Mizanur Rahman (Chemical Engineering, 2016). Served as Dean’s Representative.
- Jialin Liu (Computer Science, 2015). Served as Dean’s Representative.
- Preeti Chadha (Biology, 2012).
- Qizhi Wang (Agricultural & Applied Economics, 2012).
- Bahtiyar Babanazarov (Agricultural & Applied Economics, 2012).
- Shyam Adhikari (Agricultural & Applied Economics, 2011).
- Miaomiao Wang (Agricultural & Applied Economics, 2009).
- *Masters Committee Member:*
  - Chen Chen (Plant & Soil Science, 2009).
- Advisor, *Actuarial Science Minor*, since Spring 2009.
- Member, *Chair Search Committee (Department of Mathematics & Statistics)*, 2015–2016.
- Member, *Hiring Committee*, Department of Environmental Toxicology, Spring 2015.
- Service under *OP 74.08*, 2014–2015.

#### **Graduate Committees Served on at the University of Florida**

- M. Giurcanu, Ph.D., 2007, University of Florida.
- T. Barkley, Ph.D., 2007, Business Administration, University of Florida.
- J. Xu, Ph.D., 2007, Electrical and Computer Engineering, University of Florida.
- K. Park, Ph.D., 2007, Electrical and Computer Engineering, University of Florida.
- B. Kim, Ph.D., 2006, University of Florida.
- E. Schmacker, Ph.D., 2006, Health Services Research, University of Florida.
- J. Choi, Ph.D., 2006, Civil Engineering, University of Florida.
- J. Brindle, Ph.D., 2006, Nuclear Engineering Sciences, University of Florida.
- S. Jung, M.S., 2006, University of Florida.
- S. Vazquez, M.S., 2006, University of Florida.
- S. Busbee, M.S., 2006, University of Florida.
- S. Lahiri, M.S., 2005, University of Florida.
- Y. Cui, Ph.D., 2005, University of Florida.
- M. Capanu, Ph.D., 2005, University of Florida.
- P. Rumcheva, Ph.D., 2005, University of Florida.
- J. Suarez, Ph.D., 2004, Civil Engineering, University of Florida.
- D. Marchev, Ph.D., 2004, University of Florida.
- L. Qiu, M.S., 2004, University of Florida.
- H. Zhu, M.S., 2004, University of Florida.
- M. Thomas, M.S., 2004, University of Florida.

- M. Huang, M.S., 2004, University of Florida.
- T. Beechner, M.S., 2004, University of Florida.
- R. Miranda, M.S., 2004, University of Florida.
- D. Freeman, M.S., 2004, Forest Resources and Conservation, University of Florida.
- D. Khey, M.S., 2003, Sociology, University of Florida.
- G. Papageorgiou, M.S., 2003, University of Florida.
- R. Kadel, M.S., 2003, University of Florida.

## Professional Service

### Conference Session Chair

- *European Meeting of Statisticians*, “Nonparametrics 3” contributed session, Amsterdam, The Netherlands, July 9, 2015.
- *4th Erich L. Lehmann Symposium*, contributed session, Rice University, Houston, Texas, May 9, 2011.
- *Econometrics, Time Series Analysis and Systems Theory: A Conference in Honor of Manfred Deistler*, contributed session C2a, Vienna, Austria, June 20, 2009.
- *65th Annual Meeting of the Institute of Mathematical Statistics*, contributed session 64, Banff, Canada, July 29, 2002.

### Journal Refereeing

Statistical Modelling; IEEE Transactions on Engineering Management; IEEE Transactions on Signal Processing; Annals of Statistics; Journal of the American Statistical Association; Journal of Banking and Finance; Journal of Nonparametric Statistics; Journal of Multivariate Analysis; International Journal of Mathematics and Mathematical Sciences; Bioinformatics; Journal of Risk; The American Statistician; Journal of Probability and Statistical Science; Journal of Statistical Computation and Simulation; Communications in Statistics; Journal of Systems Science and Complexity; IEEE Control Systems Magazine; Journal of Stochastic Analysis and Applications; Brazilian Journal of Probability and Statistics; Hacettepe Journal of Mathematics and Statistics; Biometrics; Studies in Nonlinear Dynamics & Econometrics; European Journal of Operational Research; Mathematics and Computers in Simulation; Canadian Journal of Statistics; Statistics, Optimization & Information Computing; Computational Statistics & Data Analysis; Statistica; Statistics; Statistics in Medicine; The Annals of Applied Statistics; Journal of Business Cycle Research; Journal of Probability and Statistics; Data-Enabled Discovery and Applications; Journal of Time Series Analysis; Journal of the Operational Research Society; Econometrics; Molecular Biology and Evolution; Risk Analysis; Symmetry; Entropy; Journal of Biopharmaceutical Statistics; Scientific Reports; Mathematics.

### Book Reviewing

- “Testing Statistical Hypotheses”, 3rd ed., by Lehmann & Romano (2019).
- “Time Series: A First Course with Bootstrap Starter”, by McElroy & Politis (2017).
- “Linear Models and the Relevant Distributions and Matrix Algebra: A Unified Approach”, by Harville (2017).
- “Nonlinear Time Series Analysis”, by Tsay and Chen (2015).
- “Statistical Methods for Financial Engineering”, by Remillard (2012).
- “Statistics for Engineering” by Metcalfe and Greenfield (2011).
- “Time Series Forecasting” by C. Chatfield (2001).

### **Tenure & Promotion Assessment Cases**

- *Dr. Ahmed Alzahabi*, Dept. of Mathematics and Statistics, University of Texas Permian Basin, (2024).
- *Dr. Tao Lu*, Dept. of Mathematics and Statistics, University of Nevada Reno, (2018).
- *Dr. Claudio Fuentes*, Dept. of Statistics, Oregon State University, (2016).
- *Dr. Harshini Fernando*, Dept. of Mathematics/Statistics/Physics, Purdue University North Central, (2010).

### **External Reviews/Grant Panels**

- *AIBS and the Nebraska-EPSCoR program*, reviewer for FIRST AWARD/NSF CAREER competition, University of Nebraska-Lincoln, (2023).

### **Community Service**

- Presentation to K-12 Students: “So You Want to be a Statistician?”, Dept. of Mathematics & Statistics, Emmy Noether High School Day, *Texas Tech University*, Lubbock (2008-05-08, 2009-05-06, 2010-05-12).