MOHAMMED SHAKHATREH

Curriculum Vitae (July 26, 2021)

Department of Mathematics & Statistics
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Education

2008 Ph.D. in Statistics, University of Toronto, Canada
Thesis Title: *Optimality and Asymptotics for Some Bayesian Inferences*
Supervisor: Evans, Mike
1996 M.Sc. in Statistics, Yarmouk University, Jordan
1993 B.Sc. in Statistics, Yarmouk University, Jordan

Employments

Jan.2020 -	Associate Professor, Department of Mathematics & Statistics Jordan University of Science and Technology.
Feb.2012 -Jan. 2020	Assistant Professor, Department of Mathematics & Statistics Jordan University of Science and Technology.
Sep.2009 - Jan.2012	Full-time Lecturer, Department of Statistics, Yarmouk University.
Jan.2009 - May.2009	Lecturer, Department of Statistics, University of Toronto.
Jan.2008 - June.2008	Statistical Consultant,Addiction and Mental Health Center (CAHM).
2006 - Sept.2007	Statistical Consultant, Department of Statistics, University of Toronto

Research Interests

- Bayesian inferences
- Distribution Theory
- Reliability & Survival Analysis
- Applied stochastic modelling

Publications

1. **Shakhatreh, M.K.**, Dey, S., and Devender, K. (2021) "Inverse Lindley power series distributions: A new compounding family and regression model with censored data." *to appear in Journal of Applied Statistics* .
2. **Shakhatreh, M.K.**, Dey, S. and Alodat (2021) " Objective Bayesian analysis of the Shannon entropy of the Weibull distributio." *Applied Mathematical Modelling,* 89, 314-332.

3. **Shakhatreh, M.K.**, A. J. Lemonte, and Gauss M. Cordeiro (2020) "On the generalized extended exponential-Weibull distribution: properties and different methods of estimation." *International Journal of Computer Mathematics,* 97, 1029-1057.

4. Alodat and **Shakhatreh, M.K.** (2020) "Gaussian Process Regression With Skewed Errors." *Journal of Computational and Applied Mathematics,* 370, 15 May 2020

5. Al-Babtain, Abdulhakim A. , **Shakhatreh, M.K.**, Mazen Nassar, and Afify, A.Z. (2020). "A New Modified Kies Family: Properties, Estimation Under Complete and Type-II Censored Samples, and Engineering Applications," *Mathematics* 8, 1345; doi:10.3390/math8081345.

6. Nassar, M., Afify, A.Z., **Shakhatreh, M.K.**, Dey, S. (2020). "On A New Extension of Weibull Distribution: Properties, Estimation and Applications to One and Two Causes of Failures," *Quality and Reliability Engineering International,* 36, 2019-2043.

7. **Shakhatreh, M.K.** and A. Al-masri (2020) "On The Weighted BurrXII Distribution: Theory and Practice," " *Electronic Journal of Applied Statistical Analysis,* 13, 229 - 255.

8. Nassar, M., Afify, A.Z., **Shakhatreh, M.K.** (2020). "Estimation Methods of Alpha Power Exponential Distribution with Applications to Engineering and Medical Data ." *Pakistan Journal of Statistics and Operation Research,* 16(1):149-166

9. **Shakhatreh, M.K.**, A. J. Lemonte, and G. MorenoArenasc(2019) "The log-normal modified Weibull distribution and its reliability implications." *Reliability Engineering and System Safety*, Vol 88, 6-22.

10. **Shakhatreh MK** (2018) " A New Three - Parameter Extension of the Log-Logistic Distribution with Application to Survival Data." *Communications in Statistics - Theory and Methods,*,Vol 47, 5205-5226

11. Rababah, A.M., Khalid B.M.,**Shakhatreh M.K.** (2017) "Quadratic spline interpolation with minimized error." *AIP Conference Proceedings:International Conference of Numerical Analysis and Applied Mathematics.* Volume 1863 (1)

12. Alzghoul MM, **Shakhatreh, M.K.**, Al-Sheyab N (2017) "Unintentional injuries and violence among adults in northern Jordan: a hospital-based retrospective study." *International journal of environmental research and public health,* Volume 14(4), 343.

13. **Shakhatreh et. al** (2016) "The beta generalized linear exponential distribution." *Statistics: A Journal of Theoretical and Applied Statistics,* Volume 50(6), pp. 1346-1362, 2016

14. Evans, M.,**Shakhatreh** (2014) "Consistency of Bayesian estimates for the sum of squared normal means with a normal prior." *Sankhya A,* Volume 76-A, Part 1, pp. 25-47, 2014

15. **Shakhatreh, M. K.** (2012) "A two-parameter of weighted exponential distributions." *Statistics and Probability Letters,*Vol. 82, P. 252- 261

16. Eidous, O.,**Shakhatreh, M.K.** (2012) "Double Kernel Method Using Line Transect Sampling." *Austrian Journal of Statistics,*Vol. 41, P. 95- 103

17. Eidous, O., and **Shakhatreh, M.** (2011) " Asymptotic unbiased estimator using line transect sampling." *Communication in Statistics - Theory and methods.* Vol 40, p. 4353-4363

18. Evans, M., and **Shakhatreh, M.** (2008)" Some optimal properties of Bayesian inferences" *Electronic Journal of Statistics*, Vol. 2, 2008, p.1268-1280.

Masters Thesis

I supervised the following thesis masters at Jordan University of Science & Tech.

- A new mixed class of size-biased Burr XII distribution, 2016
- A compound family of the extended generalized linear exponential distribution and power series distribution, 2016
- Modified generalized linear exponential distribution, 2016
- A compound class of log-logistic and Poisson distributions with application to right censored data , 2014
- A mixed Burr XII and zero-truncated Poisson Distribution: model, properties and application , 2014
- The generalized size- biased weighted exponential distribution , 2014
- The beta generalized linear exponential distribution, 2014

Selected Talks

2007 "Some Results Concerning Bayesian inferences ", *Special Statistics Seminar, Department of Mathematics and Statistics, Queens University at Kingston, Ontario, Canada*

2007 "Consistency of Bayesian Estimates for the Sum of Squared Normal Means with a Normal Prior ", *Southern Ontario Statistics Graduate Student Seminar Day, Field of Institute, Toronto*

Members of committees

- Curriculum committee
- Social Committee
- Research Committee
- Graduate studies Committee

Teaching Experience

Currently I am teaching the following courses at Jordan University of Science & Technology:

MATH 793 - Graduate Course in Probability

MATH 330 - Mathematical Statistics

MATH 235 - Probability & Statistics for Engineering

- At Jordan University of Science & Tech.

  a) Graduate Courses

  MATH 793 - Advanced topics in Statistics: Stochastic Calculus
  - MATH 731 - Advanced course in probability - I
  - MATH 732 - Mathematical Statistics

  b) Under Graduate Courses

  MATH 230 - Probability Theory
  MATH 330 - Mathematical Statistics I
  MATH 331 - Statistical Methods I
  MATH 235 - Probability & Statistics for Engineering
  MATH 233 - Probability for computer Science
  MATH 131 - Elements of Statistics
  MATH 99 - PreCalculus
  MATH 495 - Topics in Statistics and Probability: Multivariate Statistics

- At Yarmouk University

  I taught the following courses

  a) Graduate Courses:
  - STAT 611 - Graduate course in probability - I
  - STAT 632 - Mathematical Statistics - II

  b) Undergraduate Courses:

  STAT 101 - Introduction to Statistics I
  STAT 111 - Introduction to Probability I
  STAT 211 - Introduction to Probability II
  STAT 234 - Introduction to Mathematical Statistics I
  STAT 463 - Multivariate Statistics

- At University of Toronto

  I taught the following courses at the University of Toronto

  STA437HS - Applied Multivariate statistics (4^{th} year undergraduate level), Winter, 2009:

  STA218HS - Statistics for Management and Economics (2nd Year undergraduate level), Winter 2009

  STA250HS - Statistical Concept, summer,2002

Workshops

- Irbid, Jordan, Jordan, 2021, University of Science and Tech., *"Building and populating a website using MS sharepoint"*
- Irbid, Jordan, Jordan, 2021, University of Science and Tech., *"Basics of Distance Education"*
- Irbid, Jordan, Jordan, 2017, University of Science and Tech., *"Development of Curriculum and Study plans"*
- Irbid, Jordan, Jordan, 2016, University of Science and Tech., *" Modern University Instructional Methods"*
- Vancouver, Canada, 2008, University of British Colombia, *"Summer school on Bayesian modeling and computation"*
- Toronto, Canada, 2007, SAS Canada, *"Workshop on longitudinal data analysis in business- and bio- Statistics"*
- Nicosia, Cyprus,1998, The UK Institute of Actuaries, *"Summer school in actuarial science"*

Statistical Consulting Experience

Jan/2008 - June/2008 Statistical Consultant,Addiction and Mental Health Center (CAHM). I worked as statistical consultant for the CAMH. I was involved in performing various complex statistical analysis in a study for evaluating the clinical and cost effectiveness of dialectical behavior therapy (DBT) for people who have borderline personality disorder. I have provided the following statistical consultations:

- Provided statistical analysis for count data (self-harm, emergency visits, psych admission days and psych emergency visits) by using generalized estimating equations (GEE), which is an extended to the generalized linear models to analyze longitudinal data. I have used PROC GENMOD procedures on SAS to do so.
- Provided statistical analysis for selecting the best model for the data.
- Created plots to demonstrate linear growth curve analysis.
- Provided statistical survival analyzes.
- Provided them with the most recently literature for fitting and selecting the best model by using SAS MACROS

2006 - Sept.2007 Statistical Consultant, Department of Statistics, University of Toronto

I was involved in the following projects:

- A comparison of public health violations between restaurant chains (analysis used as basis of CBC news show)

- Analysis of the effect of three doses on various nutritional outcomes (within subject design).
- Met and assisted nursing students with experimental design and data analysis.
- Assisted professor of criminology with crime trend data by using time series data analysis.
- Analysis of data looking at the effect of parasitism on flower choice by pollinators using log-linear and principle component methods

1996 - 1999 Statistical Consultant, Social Security Corporations(SSC). Amman, Jordan
I was a core member of the fourth actuarial study conducted for (SSC)

- Prepared and analyzed data and information needed for the demographic studies through forecasting and projections techniques
- Prepared and analyzed of data and information to the investment department
- Used statistical tools such as regression analysis, analysis of variance, principle component and factor analysis, time series methodology

Technical Skills

- Advanced user of R (S-Plus)
- Familiar with SAS, Mintab, SPSS
- Good knowledge of Winbugs and Mathematica

Selected Awards

2001 - 2007 Fellowship University of Toronto, Toronto,ON
2002 - 2003 Ontario Graduate Scholarship (OGS) Toronto, ON
2003 - 2004 Ontario Graduate Scholarship (OGS) Toronto, ON

Other Professional Activity

I have refereed papers for the following journals:

IEEE Transactions on Information Theory

Journal of Computational and Applied Mathematics

Reliability Engineering and System Safety

Computers & Industrial Engineering

Communications in Statistics - Simulation and Computation

Probability in the Engineering and Informational Sciences

Jordan Journal of Mathematics and Statistics