

# Curriculum Vitae

## PERSONAL INFORMATION

**Name:** Emad Elsayed Aly Elmahdy

**Qualification:** Ph.D. in Applied Mathematics

**Date of Birth:** 19/10/1968

**Place of Birth:** Alexandria, Egypt.

**Nationality:** Egyptian

**Marital Status:** Married

**Languages:** Arabic, English



## PERMANENT ADDRESS

### Home:

Address: 67 Abn Monqez St., Victoria, Alex., Egypt.

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### Work:

#### (Present address)

King Saud University,  
Science College, Math. Dept.  
P.O. Box 2455, Riyadh 11451,  
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## TITLE AND EDUCATION

|      |   |
|------|---|
| 2006 | Ph.D. in Applied Mathematics,<br>Faculty of Science, Tanta University, Egypt. |
| 2001 | M.Sc. in Applied Mathematics,<br>Faculty of Science, Tanta University, Egypt. |
| 1993 | Diploma of Higher Studies in Geophysics, Alexandria<br>University, Egypt.     |
| 1990 | B.Sc. in Mathematics,   |

Faculty of Science, Alexandria University, Egypt.

## ACADEMIC APPOINTMENTS

|             |  |
|-------------|--|
| 2018- Now   | Associate Professor, Department of Mathematics,<br>Science College, King Saud University,<br>Riyadh, Saudi Arabia.                           |
| 2014- 2017  | Assistant Professor, Department of Mathematics,<br>Science College, King Saud University,<br>Riyadh, Saudi Arabia.                           |
| 2008- 2014  | Assistant Professor, Department of Mathematics,<br>Teachers College, King Saud University,<br>Riyadh, Saudi Arabia.                          |
| 2003 - 2008 | Lecturer of Applied Mathematics and Statistics, Department of<br>Mathematics, Faculty of Education, King Khalid University,<br>Saudi Arabia. |
| 2002- 2003  | Assistant Lecturer of Applied Mathematics, Department<br>of Mathematics, Faculty of Science, Tanta University,<br>Egypt.                     |

## COURSES TAUGHT

| ACADEMIC<br>YEAR | COURSES   |   | NOTICES   |
|------------------|-----------|---|---|
|                  | Code      | Name  |   |
| 2003-2008        | MATH 101  | Calculus 1                                    | In Faculty of<br>Education,<br>Khalid<br>University, KSA. |
|                  | MATH 121  | Calculus 2                                    |   |
|                  | MATH 221  | Calculus 3                                    |   |
|                  | MATH 171  | Statics                                       |   |
|                  | STAT 101  | Introduction in Probability and<br>Statistics |   |
|                  | STAT 241  | Probability Theory                            |   |
|                  | MATH 212  | Dynamics                                      |   |
|                  | APPL.MATH | Mechanics (Fluid Dynamics- Elasticity Theory) |   |
|                  | MATH 280  | Introduction in Programming                   |   |
|                  | MATH 452  | Numerical Analysis                            |   |
|                  | MATH 461  | Applied Mathematics                           |   |

|                  |          |   |  |
|------------------|----------|---|--|
| <b>2008-2014</b> | MATH 231 | Probability and Statistics (1)                            | <b>In Teachers<br/>College, King<br/>Saud University,<br/>Riyadh, KSA.</b> |
|                  | MATH 232 | Probability and Statistics (2)                            |  |
|                  | MATH 332 | Probability and Statistics (2)                            |  |
|                  | MATH 333 | Statistical Methods                                       |  |
|                  | MATH 362 | Mathematical Methods                                      |  |
|                  | MATH 447 | Linear Algebra  |  |
|                  | MATH 242 | Linear Algebra  |  |
|                  | MATH 142 | Algebra   |  |
|                  | MATH 381 | Mathematical Programming with Maple                       |  |
|                  | MATH 104 | Mathematics for Science (1)                               |  |
|                  | MATH 120 | Analytical Geometry And Algebra                           |  |
|                  | MATH 122 | Plane Geometry and Transformations                        |  |
|                  | MATH 201 | Calculus 1  |  |
|                  | MATH 204 | Advanced Calculus   |  |
|                  | MATH 251 | Mathematical programming                                  |  |
|                  | MATH 353 | Linear programming  |  |
|                  | MATH 454 | Numerical Analysis  |  |
| <b>2014-Now</b>  | MATH 203 | Differential and Integral Calculus                        | <b>In Science<br/>College, King<br/>Saud University,<br/>Riyadh, KSA.</b>  |
|                  | MATH 204 | Ordinary Differential Equations (O.D.Es)                  |  |
|                  | MATH 107 | Vectors and Matrices                                      |  |
|                  | MATH 106 | Integral Calculus   |  |
|                  | MATH 111 | Integral Calculus   |  |
|                  | MATH 425 | An Introduction to P.D.Es                                 |  |
|                  | MATH 244 | Linear Algebra  |  |
|                  | MATH 380 | Stochastic Processes                                      |  |
|                  | ACTU 475 | Credibility Theory and Loss Distributions                 |  |
|                  | MATH 507 | Advanced Operations Research (Eng. Postgraduates Program) |  |

## **SCIENTIFIC ACTIVITIES**

### **Fellowships - Membership - Supervisor**

- (1) A reviewer in Elsevier & Springer Journals
- (2) A reviewer of Mathematical Sciences Program (40400),  
Umm Al-Qura University, KSA.
- (3) A member in IEEE society.
- (4) A member in American Association for Science and Technology (AASCIT).
- (5) A chair of Quality and Development Committee, Math. Dept., Science College,  
Riyadh, KSA, 2018-2022.
- (6) A chair of Alumni Committee, Math. Dept., Science College, Riyadh, KSA, 2014-  
2018.
- (7) A member in Applied Math. Committee, Math. Dept., Science College, Riyadh,  
KSA, 2014-2023.
- (8) A chair of Preparation of Textbooks Committee for students, Math. Dept.,  
Science College, Riyadh, KSA, 2014-2021.
- (9) A chair of Self Evaluation Committee, Math. Dept., Teachers College, Riyadh,  
KSA, 2011-2012.
- (10) A member in Websites Committee concerned in Developing  
Electronic Websites for Staff. Teachers College, Riyadh, KSA, 2010-2011.
- (11) A member in Quality and Development Committee, Math. Dept. Teachers  
College, Riyadh, KSA, 2010-2014.

## **CONFERENCES AND WORKSHOPS**

- (1) Training Course Program “Operations Research”, VU Amsterdam, Netherlands, 2019.
- (2) Training Course Program “Advanced Topics in Survival Analysis”, University of  
Reading, United Kingdom, 2012.
- (3) Training Course Program “Multivariate Analysis”, University of Reading, United  
Kingdom, 2012.
- (4) I have participated and presented a paper titled by “Modelling Reliability Data with  
Finite Weibull or Lognormal Mixture Distributions” in the 3<sup>rd</sup> Int. Conference on Pure  
and Applied Sciences 2-6 Feb., 2017, Dubai.
- (5) The Third Excellence Conference on Science and Mathematics Education (ECSME),  
KSU, 13-14 March, 2019.
- (6) Advanced English Language Course, Amid-East, American Center, Alexandria, 2019.
- (7) Conference on Mathematical Sciences and Applications, Science College, Riyadh,

- K.S.A, 11-12 April 2018.
- (8) Conference of “The Mathematical Modeling with Matlab”, London, United Kingdom, 17 July 2012.
  - (9) Seminar of “Mathematics of Networks” University of Warwick, United Kingdom, 20 July 2012.
  - (10) Conference of “Mathematics and its Applications”, Al-Imam University, Riyadh, K.S.A, 23-24 March 2011.
  - (11) Conference of “Finite Element Modeling using Comsol Multiphysics”, Al-Imam University, Riyadh, K.S.A, 9 March 2015.
  - (12) Conference of “Scientific Publishing” Held in King Saud University, Riyadh, K.S.A, 11-13 October, 2015.
  - (13) The Training Teaching Program Workshop Held in King Saud University, Riyadh, K.S.A, October, 2008.
  - (14) The Training Computer workshop in Building and Developing Electronic Websites for Staff, Held in Teachers College, Riyadh, K.S.A, February, 2009.
  - (15) The Preparatory Week of University Teaching Program, Held in King Saud University, Riyadh, K.S.A, October, 2010.
  - (16) ISI Program Workshop Held in Research Center, Teachers College, Riyadh, K.S.A, 2011.
  - (17) Alwakan Self-development Skills Workshop Held in Teachers College, Riyadh, K.S.A, 2011.
  - (18) Self-Evaluation Workshops Held in Teachers College, Riyadh, K.S.A, 2011.
  - (19) Toefl Program 2001, Amid-East, Cairo.
  - (20) Advanced listening and Speaking English Language Course, American Center, Alexandria, 1997.
  - (21) Toefl Program, Alexandria. University, 1996.
  - (22) Special Program in Computer Training for Graduate Students at Tanta University, 2001.
  - (23) Special Program in Computer Training for Graduate Students at Tanta University, 2004.
  - (24) Participating in Training Programs For Teachers College Graduates Held in Teachers College, Riyadh, K.S.A, 2010.
  - (25) Outcome-Based Education “OBE” Program Workshops Held in King Saud University, Riyadh, K.S.A, 2011.
  - (26) The Training workshop in Learning Management System Held in Teachers College, Riyadh, K.S.A, January, 2012.
  - (27) The Training workshop in SPSS for Statistical Analysis Held in King Saud University, Riyadh, K.S.A, 2013.
  - (28) The Scholarship of Teaching Learning and Curriculum Practice in Higher Education, Deanship of Skills Development, King Saud University, Riyadh, 2 Feb., 2015.
  - (29) Educational Technology Innovation for Higher Education in 21<sup>st</sup> Century, Deanship of Skills Development, King Saud University, Riyadh, 4 Feb., 2015.
  - (30) The Training workshop in “The KPIs for academic programs”, Deanship of Skills Development, King Saud University, Riyadh, 8 Dec., 2019.
  - (31) The Training workshop in "Data in Mathematics Courses: Addressing Global Challenges", Saudi Association for Mathematical Sciences (SAMS), 21 June, 2021.
  - (32) The Second International Conference of Mathematics and & Its Applications, KKU, Abha, 19-20 Oct., 2021.
  - (33) The 5<sup>th</sup> Conference on Mathematical Science and Applications (CMSA), SAMS & KAUST, 17-18 Nov., 2021.
  - (34) The Fourth Excellence Conference on Science and Mathematics Education (ECSME),

- KSU, 15-16 May, 2022.
- (35) SOA “Society of Actuaries” Workshop, Held in Science College, Riyadh, K.S.A, 14 November, 2022.
- (36) The webinar Data Science: Predicting Health Insurance Prices with Data Science, Texas, 13 December, 2022.
- (37) Invited speaker, in the International Conference and Exhibition for Science (ICES2023) Riyadh, Saudi Arabia, February 6-8, 2023.
- (38) I have participated and presented a talk entitled “Reliability Modelling of Heterogeneous Data by Using Different Competing Weibull Mixture Models” in the AUA Academic Workshop on (DDEs-AIIDs 2023), November 23-24, 2023, UAE University, Al Ain, UAE.

## LIST OF PUBLICATIONS

1. “Reliability Modelling of Heterogeneous Data by Using Different Competing Weibull Mixture Models” *Advances and Applications in Statistics*, 91, No. 5, (2024) 577-596.
2. “Basics in Mathematical Programming”, Book, KSU Press, ISBN 9786035079013 (2021).
3. “Modelling Reliability Data with Finite Weibull or Lognormal Mixture Distributions” *Appl. Math. Inf. Sci.* 11, No. 4, (2017) 1081-1089.
4. “Reliability Analysis for Monte Carlo Simulation Using the Expectation-Maximization Algorithm for a Weibull Mixture Distribution Model” *J Appl Computat Math* 5(3) (2016).
5. "A new Approach for Weibull modelling for reliability life data analysis", *Journal of Applied Mathematics and Computation* 250 (2015) 708-720.
6. "A new Approach for Parameter Estimation of Finite Weibull Mixture Distributions for Reliability Modelling", *Journal of Applied Mathematical Modelling* 37 February (2013) 1800–1810.
7. "Magneto-hydrodynamics Stability of A compressible Fluid Layer below A vacuum Medium ", *Journal of Fractional Calculus* 33 May (2008) 121-128.
8. "Capillary Stability of Compressible Fluid Jet Surrounding very Dense Cylinder", *Journal of Fractional Calculus* 31, May (2007) 101-106.
9. "Capillary Instability of a Streaming Fluid- Core Liquid Jet under Self Gravitating Forces", *Mechanics and Mechanical Engineering* 8 (2005) 127-141.
10. "A simple Method for Predicting the Cumulative Failures of Consumer Products during the Warranty Period", *Delta Journal of Science* 25 (2001) 10-22.
11. "Failure Process Modeling and Estimation of a Component Mean Life Time", *Delta Journal of Science* 23 (1999) 73-88.

## REFeree (REVIEWER) FOR THE FOLLOWING RESEARCHES:

1. "A Flexible Bounded Distribution: Information Measures and Lifetime Data Analysis" Ms. Ref. No. BMMS-D-22-00741, Journal: Bulletin of the Malaysian Mathematical Sciences Society (2022).
2. "Reliability Estimation of Data Collecting Platforms by Fitting Weibull pdfs to their Life Data" Ms. Ref. No. LSTA-2021-0208, Journal: Communications in Statistics – Theory and Methods (2022).
3. "The Unit Weibull Regression Model with Variable Shape Parameter", THAISTAT-D-22-00058, Applied Statistics, Thailand Statistician Journal (2022).
4. "Parameter estimation of finite Weibull mixture models for reliability modelling: An ABC Approach", COST-D-21-00194, Journal of Computational Statistics (2021).
5. "Two models and the EM algorithms for analysis of heterogeneous two dimensional warranty data", RESS\_2019\_1468, Journal of Reliability Engineering & System Safety (2020).
6. "A new class of distributions as a finite functional mixture using functional weights", AABC-2018-1019, Anais da Academia Brasileira de Ciências (2019).
7. "Bayesian estimation of Weibull mixture in heavily censored data setting", RESS\_2017\_1168, Journal of Reliability Engineering & System Safety (2018).
8. "Hierarchical Bayes estimates based on different test-bed data from two-parameter Weibull distribution", Ms. Ref. No. CAM-D-18-01993, J. of Computational and Applied Mathematics (2018).
9. "A Linear Algorithm for a Minimax Location of a Path-Shaped Facility with a Specific Length in a Weighted Tree Network", IJOR-13246, Int. J. of Operational Research (2018).
10. "Computational testing procedure of the measure of performance for Exponentiated Weibull products under progressive type II right censoring scheme", Ref. No. JTE-2017-0190, Journal of Testing and Evaluation (2017).
11. "A reliability estimation approach via Wiener degradation model with measurement errors", Ms. Ref. No. AMC-D-17-00304, Applied Mathematics and Computation (2017).
12. "Lifetime Data Analysis with 3-Parameter Weibull-related Models", Ms. Ref. No. RESS\_2016\_363, Journal of Reliability Engineering & System Safety (2016).
13. "Extracting clusters from aggregate panel data: a market segmentation study", Ms. Ref. No. AMC-D-15-03485R1, for Applied Mathematics and Computation (2016).
14. "Modelling the spatial heterogeneity of bovine tuberculosis in buffalo" Ms. Ref. No. AMC-D-15-04402 for Applied Mathematics and Computation (2016).
15. "The visualization and validation of Weibull models – a holistic approach to identifying heterogeneity", Ms. Ref. No. RESS-D-15-00256, Journal of Reliability Engineering & System Safety (2015).
16. "Life prediction for VFD based on two improved models using three- parameter Weibull right approximation method", Ms. Ref. No. RESS-D-15-00690, Journal of Reliability Engineering & System Safety (2015).

17. "Robust estimations of survival function for Weibull distribution", Ms. Ref. No. HJMS -15-06, Hacettepe Journal of Mathematics and Statistics (2015).
18. "Dynamical Systems Theory" Journal of Computational and Applied Mathematics (2015).
19. "Experimental Testing and Life Estimation of OLED at Normal Working Stress Based on Luminance Degradation Model" Ms. Ref. No. JTE-2013-0294, Journal of Testing and Evaluation (2014).