

به نام خدا

## شناسنامه علمی و تجارتی شغلی



### اطلاعات شخصی:

نام و نام خانوادگی: مرتضی خدابین متولد: ۱۳۴۸

### اطلاعات تحصیلی:

دیپلم ریاضی فیزیک	۱۳۶۷	دبیرستان شهید رجایی کرج
لیسانس آمار ریاضی (فارغ التحصیل رتبه اول)	۱۳۷۳	دانشگاه شهید بهشتی تهران
فوق لیسانس آمار ریاضی	۱۳۷۵	دانشگاه شهید بهشتی تهران
دکتری آمار (اولین فارغ التحصیل رشته آمار و رتبه اول)	۱۳۸۳	واحد علوم و تحقیقات

### اطلاعات شغلی:

دانشیار (پرونده در حال بررسی برای استادی) پایه ۲۳ عضو هیأت علمی گروه ریاضی واحد کرج  
نشانها و جوایز علمی:  
پژوهشگر برتر سال ۹۳ و ۹۸ دانشکده علوم دانشگاه آزاد اسلامی کرج

### سوابق اجرائی

- مدیر گروه دکتری ریاضی
- عضو کارگروه صلاحیت های عمومی دانشگاه
- عضو هیأت اجرایی جذب دانشگاه
- مدیر داخلی و مدیر مسئول مجله Mathematical Sciences (صاحب امتیاز: دانشگاه آزاد اسلامی واحد کرج). این مجله توسط انتشارات Springer چاپ می شود.
- عضو کمیته تخصصی ریاضی و آمار منطقه ۸ و منطقه ۱۲ دانشگاه آزاد اسلامی

- عضویت در کمیته پژوهش مرکز تربیت مربی
- عضو شورای علمی خانه ریاضیات کرج از سال ۸۸ تا سال ۹۰
- کارشناس و کارشناس مسئول آمار و اطلاعات بنیاد شهید انقلاب اسلامی ۱۳۷۷-۱۳۷۲
- مشاور مدیرکل آمار و اطلاعات بنیاد شهید انقلاب اسلامی ۱۳۷۷ - ۱۳۸۲

## سوابق تدریس

- تدریس مفاهیم و روش‌های آماری دانشگاه شهید بهشتی ۱۳۷۴ - ۱۳۷۵
- تدریس آمار و احتمال مهندسی واحد علوم و تحقیقات ۱۳۸۲ - ۱۳۸۳
- تدریس آمار و احتمال مهندسی واحد قزوین ۱۳۸۳ - ۱۳۹۰ تاکنون
- تدریس آمار ریاضی و ریاضی برای آمار پیام نور تهران ۱۳۷۷
- تدریس آمار و احتمال ۱ و ۲ ، فرایندهای تصادفی ، شبیه سازی ، رگرسیون، رشته ریاضی کاربردی از سال ۱۳۷۷ تاکنون در گروه ریاضی واحد کرج
- تدریس مفاهیم و روش‌های آماری، ریاضی پیش، ریاضی ۱ ، ریاضی ۲ ، ریاضی کاربردی رشته حسابداری و برگزاری کارگاه spss در واحد کرج از سال ۱۳۷۶ تا سال ۱۳۸۵
- تدریس کلیه دروس ریاضی و آمار رشته کامپیوتر و فنی مهندسی واحد کرج
- تدریس آمار و احتمالات ، ریاضیات پایه و ریاضیات کاربردی در آموزشکده عالی محیط زیست در سال ۱۳۸۲
- تدریس کلیه دروس آماری و ریاضی دانشکده مدیریت واحد کرج سال ۱۳۷۶-۱۳۷۸
- تدریس استنباط آماری (۱) و (۲) و نظریه اطلاع برای دوره کارشناسی ارشد رشته آمار واحد تهران شمال .
- تدریس آمار و احتمال - فرایندهای تصادفی و سریهای زمانی در دانشگاه تربیت معلم تهران .
- تدریس فرایندهای تصادفی پیشرفتہ برای دوره کارشناسی ارشد ریاضی
- تدریس ریاضیات تصادفی برای دانشجویان دوره دکتری تخصصی ریاضی
- برگزاری کارگاه آمار مقدماتی و Spss مقدماتی در بنیاد شهید انقلاب اسلامی
- برگزاری کارگاه SPSS مقدماتی و پیشرفتہ در دانشکده های مختلف دانشگاه آزاد اسلامی واحد کرج .
- برگزاری کارگاههای آمار مقدماتی ، Spss مقدماتی ، آمار پیشرفتہ و Spss پیشرفتہ در مرکز تربیت مربی وابسته به سازمان فنی و حرفه ای کشور
- برگزاری دوره آمار برای مدیران در مرکز تربیت مربی (مرداد ۹۳)
- برگزاری دوره آمار برای مدیران در موسسه استاندارد (آذر ۹۳)

## Before 2010

### 1. E. Pash M. Khodabin GR. Mohtashami Borzadran

Testing statistical hypothesis via Shannon's entropy in exponential families  
*Iranian International Journal of Science. 2004;5(2):267-279.*

### 2. E. Pash M. Khodabin GR. Mohtashami Borzadran

Hypothesis testing via Shannon's entropy in exponential family and its application in comparison r populations

*IUST International Journal of Engineering Science. 2005;16(4):17-20.*

### 3. E. Pash M. Khodabin GR. Mohtashami Borzadran

Entropy in exponential families

*Journal of Sciences Islamic azad University. 2006;16(2):1-9.*

### 4. Morteza Khodabin

Some of nonlinear time series models and applications

*Mathematics Scientific Journal of Islamic Azad University of Arak. 2007;1(6):67-95.*

### 5. E. Pasha A. Beitollahi M. Khodabin

Divergence measure and testing statistical hypothesis

*Pakistan Journal of Statistics. 2007;23(3):205-220. (ISI)*

## 2010 Papers

### 6. Morteza Khodabin and Alireza. Ahmadabadi

Some properties of generalized gamma distribution

*Mathematical Sciences. 2010;4(1):9-28. (ISC)*

### 7. Morteza Khodabin

ADK entropy and ADK entropy rate in irreducible- aperiodic Markov chain and Gaussian processes

*Journal of the Iranian Statistical Society. 2010;9(2):25-36. (ISC)*

### 8. Morteza Khodabin and Reza Kazemi Matin

A statistical test for outlier identification in data envelopment analysis

*Iranian Journal of Optimization. 2010; 4: 211-218. (ISC)*

## 2011 Papers

### 9. Morteza Khodabin and Neda Kiaee

Stochastic dynamical logistic population growth model

*Journal of Mathematical Sciences: Advances and Applications.* 2011; 11(1): 11-29.

### 10. Morteza Khodabin

Some properties of ADK entropy and ADK entropy rate

*Procedia Computer Science.* 2011;3:1170-1177.

### 11. Morteza Khodabin

Asymptotic distribution of divergence measure with applications

*Journal of Applied Mathematics.* 2011; Vol. 8. 1(28): 41-53. (ISC)

### 12. N. Tahernia, M. Khodabin, N. Mirzaei

Mixed model for interoccurrence times of earthquakes based on EM algorithm

*Acta Geophysica.* 2011;59(5):872-890. (ISI)

### 13. M. Khodabin, K. Maleknejad, M. Rostami, M. Nouri

Numerical solution of stochastic differential equations by second order Runge-Kutta methods

*Mathematical and Computer Modelling.* 2011; Volume 53, Issues 9–10 : 1910-1920. (ISI)

### 14. Morteza Khodabin

Some wonderful statistical properties of Pi-number decimal digits

*Journal of Mathematical Sciences: Advances and Applications.* 2011; 11(2): 69-77.

## 2012 Papers

### 15. M. Khodabin, K. Maleknejad, M. Rostami, M. Nouri

Interpolation solution in generalized stochastic exponential population growth model

*Applied Mathematical Modelling.* 2012; Volume 36, Issue 3 : 1023-1033. (ISI)

### 16. K. Maleknejad, M. Khodabin, M. Rostami

Numerical solution of stochastic Volterra integral equations by a stochastic operational matrix based on block pulse functions

*Mathematical and Computer Modelling.* 2012; Volume 55, Issues 3–4 : 791-800. (ISI)

### 17. K. Maleknejad, M. Khodabin, M. Rostami

A numerical method for solving  $m$ -dimensional stochastic Itô–Volterra integral equations by stochastic operational matrix

*Computers & Mathematics with Applications.* 2012; Volume 63, Issue 1: 133-143. (ISI)

### 18. N. Tahernia, M. Khodabin, N. Mirzaei and Morteza Eskandari

Statistical models of interoccurrence times of Iranian earthquakes on the basis of information criteria

*Earth System Science, 2012; Volume 121, No 2: 463-474. (ISI)*

**19. M. Khodabin, K. Maleknejad, M. Rostami, M. Nouri**

Numerical approach for solving stochastic Volterra–Fredholm integral equations by stochastic operational matrix

*Computers & Mathematics with Applications, Volume 64, Issue 6, September 2012, 1903-1913. (ISI)*

**20. Morteza Khodabin**

An application of trajectories ambiguity in two-state Markov chain

*International Journal of Mathematical Modeling & computations, Vol. 02, No. 03, 2012, 221- 229. (ISC)*

## 2013 Papers

**21. Morteza Khodabin and Reza Ezzati**

Entropy rate for Ehrenfest's urn models

*Essays on Mathematics and Statistics: Volume 3, Athens Institute for Education and Research, 2013, 135-149.*

**22. M. Khodabin, K. Maleknejad , F. Hosseini Shekarabi**

Application of Triangular Functions to Numerical Solution of Stochastic Volterra Integral Equations

*IAENG International Journal of Applied Mathematics, 43:1, IJAM\_43\_1\_01. 2013*

**23. Morteza Khodabin**

States recognition in random walk Markov chain via binary entropy

*Journal of Interpolation and Approximation in Scientific Computing, Volume 2013 (2013) 1-6. (ISC)*

**24. N. Tahernia, M. Khodabin, N. Mirzaei**

Non Poissonian Seismic Hazard Assessment of Tehran Metropolitan by Renewal Process

*Arabian Journal of Geosciences. 2013, 1-11. DOI 10.1007/s12517-013-0930-5. (ISI)*

**25. M. Khodabin, K. Maleknejad , M. Asgari**

Numerical solution of stochastic population growth model in a closed system

*Advances in Difference Equations 2013, 2013:130. (ISI)*

**26. R. Ezzati, M. Khodabin and M. Salahaddin**

A new approach for defuzzification of a fuzzy number and its application for ranking fuzzy numbers

**Journal of Fuzzy Set Valued Analysis 2013 (2013) 1-13**

**27.** Morteza Khodabin , Mohammad Ahmad Naeini

Confidence interval for number of population in dynamical stochastic exponential population growth model

**International Journal of Applied Mathematical Research, 2 (3) (2013) 403-407.**

## **2014 Papers**

**28.** M. Asgari , E. Hashemizadeh, M. Khodabin and K. Maleknejad

Numerical solution of nonlinear stochastic Volterra integral equation by stochastic operational matrix based on Bernstein polynomials

**Bull. Math. Soc. Sci. Math. Roumanie. Tome 57(105) No. 1, 2014, 3-12. (ISI)**

**29.** M. Khodabin , K. Maleknejad, T. Damercheli

*Approximate solution of the stochastic Volterra integral equations via expansion method*

**International Journal of Industrial Mathematics, Vol. 6, No. 1, 2014. 41-48. (ISC)**

**30.** Reza Ezzati, Morteza Khodabin and Zahra Sadati

*Numerical implementation of stochastic operational matrix driven by a fractional Brownian motion for solving a stochastic differential equation*

**Abstract and Applied Analysis, Volume 2014, Article ID 523163, 11 pages. (ISI).**

**31.** Khosrow Maleknejad, Morteza Khodabin and Farkhondeh Hosseini Shekarabi

*Modified block pulse functions for numerical solution of stochastic Volterra integral equations*

**Journal of Applied Mathematics, Volume 2014 (2014), Article ID 469308, 10 pages. (ISI)**

**32.** Reza Ezzati, Morteza Khodabin and Zahra Sadati

*Numerical Solution of Backward Stochastic Differential Equations Driven by Brownian Motion through Block Pulse Functions*

**Indian Journal of Science and Technology, Vol 7(3), 271–275, March 2014. (ISI).**

**33.** Jaber Talebi, Karamollah Daneshfard, Morteza Khodabin

*The Impact of Information Technology on the Performance of the Human Resource In the Martyr Foundation and Veterans Affairs of Great Tehran*

**Universal Journal of Management and Social Sciences, Vol 4(7), 2014.**

**34.** M Khodabin, V Hosseinitoudeshki  
*Confidence interval in Kirsch equations*  
***International Journal of Applied Mathematical Research, Vol 3(4), 375–379, 2014.***

**35.** Morteza Khodabin and Neda Kiaee  
Stochastic Dynamical Theta-Logistic Population Growth Model  
***SOP Transactions on Statistics and Analysis(STSA), 74-88, 2014.***

**36.** Morteza Khodabin  
*ADK divergence measure and testing exponentiality based on estimated ADK information*  
***International Journal of Applied Mathematical Research, Vol 3(4), 446-453, 2014.***

**37.** F. Hosseini Shekarabi, M. Khodabin and K. Maleknejad  
*The Petrov-Galerkin Method for Numerical Solution of Stochastic Volterra Integral Equations*  
***IAENG International Journal of Applied Mathematics, 44:4, IJAM\_44\_4\_02. 2014.***

**38.** Reza Ezzati, Soheil Salahshour, Ronald R. Yager and Morteza Khodabin  
*Fuzzy Linear and Nonlinear Integral Equations: Numerical Methods*  
***Abstract and Applied Analysis, Article ID 147351. 2014.***

## 2015 Papers

**39.** M. Khodabin, M. Rostami  
Mean square numerical solution of stochastic differential equations by fourth order Runge-Kutta method and its application in the electric circuits with noise  
***Advances in Difference Equations 2015, 2015:62 (ISI)***

**40.** F. Hosseini Shekarabi and M. Khodabin  
Numerical Solution of a Model for Stochastic Polymer Equation Driven by Space–Time Brownian Motion via Homotopy Perturbation Method  
***International Journal of Applied and Computational Mathematics***  
***DOI 10.1007/s40819-015-0072-4. 2015***

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**41.** M. Fallahpour, K. Maleknejad , M. Khodabin  
Approximation Solution of Two-Dimensional Linear Stochastic Fredholm Integral Equation by Applying the Haar Wavelet  
***International Journal of Mathematical Modelling & Computations. Vol. 05, No. 04, Fall 2015, 361- 372.***

## 2016 Papers

42. Morteza Khodabin

Entropy, uncertainty and related concepts in Brownian motion process

*Journal of Fuzzy Set Valued Analysis 2016 SI.1 (2016) 19-30*

43. Morteza Khodabin

Some aspects in population growth rate

*Journal of Interpolation and Approximation in Scientific Computing 2016 SI.1 (2016) 14-18*

44. M. Fallahpour, M. Khodabin, K. Maleknejad

Approximation solution of two-dimensional linear stochastic Volterra-Fredholm integral equation via two-dimensional block-pulse functions

*International Journal of Industrial Mathematics (IJIM). Vol. 8, No. 4, 2016 Article ID IJIM-00774, 8 pages. (ISC)*

45. F. Hosseini Shekarabi and M. Khodabin

Numerical solution of stochastic Lotka-Volterra equations via operational matrices

*Journal of Interpolation and Approximation in Scientific Computing 2016 SI.1 (2016) 37-42.*

46. N. Rahmani, M. Khodabin, E. Hashemizadeh

Numerical solution of stochastic SIR model by Bernstein polynomials

*Journal of Interpolation and Approximation in Scientific Computing 2016 SI. 1 (2016) 19-25*

47. P. Jami, M. Khodabin, E. Hashemizadeh

Numerical solution of stochastic SIR model via split – step forward Milstein method

*Journal of Interpolation and Approximation in Scientific Computing 2016 No.1 (2016) 38-45*

48. F. Hosseini Shekarabi, M. Khodabin and K. Maleknejad

*Application of operational matrices to numerical solution of stochastic SIR model*

*Arab. J. Math. (2016) 5:77–86. (ISI listed)*

49. B. Farahani, M. Khodabin and R. Ezzati

*Numerical solution of stochastic nonlinear Volterra integral equations by a stochastic operational matrix based on Haar wavelets*

*Advances and Applications in Statistics, Volume48, Number5, 2016, page 317-336. (ISI listed ).*

50. M. Khodabin and M. Rostami

*Numerical Solution of m-Dimensional Stochastic It^o-Volterra*

*Integral Equations by Stochastic Operational Matrix based on Rationalized Haar Wavelet*

*Advances in Differential Equations and Control Processes, Volume 17, Number 3, 2016, Pages 189-212 (ISI listed).*

**51.** M. Khounsiavash , R. Kazemi Matin and M. Khodabin

*Two statistical tests for outlier identification in non-parametric performance measurement*

*Journal of Operational Research and Its Applications, Volume 13, Number 2 (8-2016). (ISC)*

**52.** M. Rostami and M. Khodabin

*An optimal method based on rationalized Haar wavelet for numerical solution of stochastic Ito-Volterra integral equations*

*Journal of Operational Research and Its Applications, Vol. 6, No. 4, pp. 39-52, Autumn 2016.*

## 2017 Papers

**53.** B. Hashemi, M. Khodabin and K. Maleknejad

*Numerical method for solving linear stochastic It^o Volterra integral equations driven by fractional Brownian motion using hat functions*

*Turk J Math, (2017) 41: 611-624 (ISI)*

**54.** B. Hashemi, M. Khodabin and K. Maleknejad

*Numerical solution based on hat functions for solving nonlinear stochastic Ito Volterra integral equations driven by fractional Brownian motion*

*Mediterr. J. Math. (2017) 14: 24. doi:10.1007/s00009-016-0820-7 (ISI)*

**55.** M. Fallahpour, M. Khodabin, K. Maleknejad

Theoretical error analysis and validation in numerical solution of two- dimensional linear stochastic Volterra-Fredholm integral equation by applying the block-pulse functions

*Cogent Mathematics (2017), 4: 1296750*

*<http://dx.doi.org/10.1080/23311835.2017.1296750> (ISI-listed)*

**56.** B. Hashemi, M. Khodabin

*Series expansion of Wiener integrals via block pulse function*

*Journal of New Researches in Mathematics, 2017.*

*Available online at <http://jnrm.srbiau.ac.ir>*

## بسط سری انتگرال‌های وینر به کمک توابع بلک پالس

مجله پژوهش‌های نوین در ریاضی- علوم و تحقیقات

سال دوم، شماره نهم، بهار ۱۳۹۶

شماره شاپا: ۱۶۸۲-۰۱۶۹

### 57. M. Asgari and M. Khodabin

Computational method based on triangular operational matrices for solving nonlinear stochastic differential equations

*Int. J. Nonlinear Anal. Appl.* 8 (2017) No. 2, 169-179. (ISI listed)

## 2018 and 2019 Papers

### 58. M. Khounsiavash , R. Kazemi Matin and M. Khodabin

*A divergence measure for combining super-efficiency scores in performance measurement of two-stage production systems*

*International Journal of Industrial Mathematics (IJIM).* Vol. 11, No. 2, 2019 Article ID IJIM-0884, 12 pages. (ISC)

### 59. M. Fallahpour, M. Khodabin, R. Ezzati

A new computational method based on Bernstein operational matrices for solving two-dimensional linear stochastic Volterra integral equations

*Differ Equ Dyn Syst* (2019).

<https://doi.org/10.1007/s12591-019-00474-y>. (Scopus-ISI-listed)

### 60. A. A. Cheraghi, M. Khodabin, R. Ezzati

Numerical solution of linear stochastic Volterra integral equations via new basis functions

*Filomat* 33:18 (2019), 5959–5966 . (ISI)

<https://doi.org/10.2298/FIL1918959C>

## 2020 Papers

### 61. M. Fallahpour, M. Khodabin, K. Maleknejad

Theoretical error analysis and validation of approximation solution for two-dimensional linear stochastic Volterra integral equation by applying the Haar wavelet

**INTERNATIONAL JOURNAL OF APPLIED AND COMPUTATIONAL MATHEMATICS.** Accepted Manuscript. 2020

**62.** A. A. Cheraghi, M. Khodabin, R. Ezzati

Applying a new method to solve linear stochastic Volterra integral equations

**J. Math. Computer Sci., ? (2020), 1–?.** (ISI) Scopus

**63.** Morteza Khodabin

A short tutorial and an overview on stochastic integrals with emphasis on their confidence interval

**International Journal of Industrial Mathematics (IJIM). Vol. ?, No. ?, 2020 Article ID IJIM-?, ? pages.** (ISC)

**64.** A. R. Yaghoobnia , M. Khodabin, R. Ezzati

Numerical solution of stochastic It<sup>o</sup>-Volterra integral equations based on Bernstein multi-scaling polynomials

**Applied Mathematics-A Journal of Chinese Universities.** ISI. Accepted Manuscript. 2020

**65.** M. Fallahpour, M. Khodabin

Theoretical error analysis and validation of approximation solution for two-dimensional linear stochastic Volterra integral equation by applying the Haar wavelet

**Journal of Mathematical Sciences and Modelling, 3 (1) (2020) 38-46.**

**66.** M. Montazer, M. Khodabin, R. Ezzati, M. Fallahpour

Non-uniform Haar wavelets method for solving linear stochastic Ito - Volterra integral equations

**The Scientific Bulletin” University POLITEHNICA of Bucharest : Applied Mathematics and Physics.** ISI. Accepted Manuscript. 2020

## کتاب

1. Morteza Khodabin, Mohsen Fallahpour and Khosrow Maleknejad, Numerical Solution of Two-Dimensional Stochastic Integral Equations, LAP LAMBERT Academic Publishing, 2017.

۲. مقدمه ای بر روش های عددی در حل معادلات دیفرانسیل و معادلات انتگرال تصادفی  
در حال چاپ توسط انتشارات دانشگاه آزاد اسلامی واحد کرج

## کنفرانسهاي بین المللی

1. Nonlinear Time series : **4<sup>th</sup> Iranian International Statistics Conference, Shahid Beheshti University , 1998.**
2. Calculation and Comparison of Entropy Rate for Ehrenfest and Generalized Ehrenfest Markov Chain : **6<sup>th</sup> Iranian International Statistics Conference, Tarbiat Modarres University, August 26-28, 2002.**
3. Asymptotic Distribution of a Divergence Measure with Applications: **2<sup>th</sup> International Conference on Cotrol and Optimization with Industrial Applications, Baku, Azerbaijan, 2-4 June, 2008.**
4. Entropy Rate for Ehrenfest's Urn Models : **3<sup>rd</sup> International Conference on Mathematics and Statistics , ATHENS, GREECE, 15-18 June 2009.**
5. Some Properties of ADK entropy and ADK entropy rate: **World Conference on Information Technology. Bahcesehir University, 07-10 October 2010, Istanbul – Turkey**
6. Entropy, uncertainty and related concepts in Brownian motion process:**The first international conference on intelligent decision science, Islamic Azad University, UAE branch 4-6 September, 2015.**
7. Some aspects in population growth rate:**The first international conference on intelligent decision science, Islamic Azad University, UAE branch 4-6 September, 2015.**

8. Approximation solution of two-dimensional linear stochastic Volterra-Fredholm integral equation via two-dimensional block-pulse functions:*The first international conference on intelligent decision science, Islamic Azad University, UAE branch 4-6 September, 2015.*
9. Numerical solution of stochastic Lotka-Volterra equations via operational matrices:*The first international conference on intelligent decision science, Islamic Azad University, UAE branch 4-6 September, 2015.*
10. Numerical solution of stochastic SIR model by Bernstein polynomials:*The first international conference on intelligent decision science, Islamic Azad University, UAE branch 4-6 September, 2015.*
11. Numerical solution of stochastic SIR model via split – step forward Milstein method:*The first international conference on intelligent decision science, Islamic Azad University, UAE branch 4-6 September, 2015.*

### طرح های پژوهشی

- 1- Some of nonlinear models in time series with applications : *Islamic Azad University, Karaj branch, 2008.*
- 2- Generalized Gamma Distribution with applications : *Islamic Azad University, Karaj branch, 2010.*
- 3- Using paired sample test for detecting outlier decision making units in data envelopment analysis : *Islamic Azad University, Karaj branch, 2011.*
- 4- The examination of numerical solution of stochastic differential equations : *Islamic Azad University, Karaj branch, 2012.*

### راهنمایی و مشاوره پایان نامه ها :

راهنمایی : ۳۷ مورد  
 دوره دکتری : ۱۰ مورد  
 دوره ارشد : ۲۷ مورد  
 مشاوره دکتری و ارشد : بیش از ۵۰ مورد