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Professor, Statistics

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Summary of Work Experience

My work experience combines many years of academic and industry work. As tenured full professor at the University of Guilan (UGuil), my current duties include teaching core courses within our mathematics program and conducting statistical research. I am also the Dean of the College of Engineering and Technology, Head of the Commission of Mathematics and Physics, and member of Council at UGuil. Moreover, I am vice President of Intelligent systems scientific society of Iran (ISSSI), representative of Iranian Statistical Society (ISS) at UGuil, and board of Directors of Iranian Fuzzy Systems Association (IFSA). From 2006 to 2008, I was the Chair of the Department of Mathematics and Statistics at UGuil. My academic experience includes several years of teaching and pursuing research in two different continents: Europe and Asia. My research productivity has been recognized in several ways. In addition to having won best paper awards at a few conferences, I have been awarded the best researcher award of UGuil twice, best researcher prize for competition between all universities in Guilan province in recognition for my significant contributions to the statistical literature. According to Google Scholar, my work has been recognized by my peers with over 486 citations. I have conducted invited lectures at several universities and at several conferences and symposiums around the world.

Education

- 2002–2003 **University of Reading, Reading, UK**, Department of Computer Sciences, **Post Doctoral** in Computer Sciences, concentration in Parallel Computing.
- 1998–2002 **University of Reading, Reading, UK**, Department of Computer Science, **PhD** in Computer Science, concentration in Computational Sciences and Morkov chain Monte Carlo (MCMC) algorithms.
- 1990–1992 **Kharazmi University, Tehran, Iran**, Department of Mathematics, **MSc** in Mathematics, major in Probability and Statistics.
- 1985–1989 **Shahid Bahonar University, Kerman, Iran**, Department of Mathematics, **BSc** in Mathematics.

Doctoral Dissertation

- Title Parallel Monte Carlo Algorithms for Matrix computations
- Supervisor Professor Vassil Alexandrov, (Email: vassil.alexandrov@stfc.ac.uk)

Research Interests

- Monte Carlo and Quasi Monte Carlo Simulation
- Monte Carlo Matrix Computations
- Financial Mathematics
- Applied Stochastic Processes
- Fuzzy and Crisp Linear Systems
- Fuzzy Stochastic Processes and Applications

Details of Work Experience

- 2013–present **Dean of College of Technology and Engineering, University of Guilan, Iran.**
- 2015–present **Professor of Statistics, Department of Mathematics and Statistics, University of Guilan, Iran**, Duties include teaching and academic research in statistical science. Mainly responsible for lecturing the postgraduate courses on Stochastic Process II, Advanced Simulation, Advanced Probability Theory I and II.
- 2009–2015 **Associate Professor of Statistics, Department of Mathematics and Statistics, College of Science, University of Guilan, Iran**, Duties include teaching and academic research in statistical science. Courses taught include Simulation and Its Applications, Probability I, II, Stochastic Processes I, II, Queuing Theory.
- 2006–2008 **Head of Department of Mathematics and Statistics, College of Science, University of Guilan, Iran.**
- 2003–2009 **Assistant Professor of Statistics, Department of Mathematics and Statistics, College of Science, University of Guilan, Iran**, Duties include teaching and research in Statistics and Mathematics. Courses I have taught are Introduction to Stochastic Processes, Introduction to Queuing Theory, Time Series, Statistical Analysis for Industrial Managements Students, Mathematical Statistics I, II and III.

1992–1996 **Lecturer of Statistics**, *Department of Mathematics and Statistics, College of Science*, University of Guilan, Iran, Duties include teaching undergraduate statistics courses. Courses I have taught are Probability I and II, Statistical Methods, Mathematical Statistics for Math Students, Calculus I and II for Engineering students.

Professional Membership and Elected Academic Positions

2015–present Vice President of Intelligent systems scientific society of Iran (ISSSI)
2004–present Representative of Iranian Statistical Society, University of Guilan
2018–present Board of Directors of Iranian Fuzzy Systems Association (IFSA)
2018–present Head of the Commission of Mathematics and Physics, University of Guilan
2012–present Member of Council, University of Guilan, Iran

The Courses I Lectured Are as Follows:

PhD Advanced Statistical Inference I, for Statistics students
Advanced Statistical Inference II, for Statistics students
Special Topics on Computer Simulations and Applications for Statistics and Applied Math students
Advanced Probability Theory I, for Statistics and Applied Maths students
Advanced Probability Theory II, for Statistics and Applied Maths students
Advanced Statistical Analysis, for Industrial Management students
Advanced Statistical Analysis, for Sports Physiology students

MSc Stochastic Processes II, for Statistics students
Statistical Inference I, for Statistics students
Statistical Inference II, for Statistics students
Simulation and Its application in Computations, for Statistics and Applied Maths students
Special Topics for MSc Statistics students, for Statistics students
Probability I, for Statistics students
Queuing Theory, for Statistics students
Statistical Analysis, for Industrial Management students
Statistical Inference, for Psychology students

BSc Calculus I, II and III, for Statistics and Engineering students
Mathematical Statistics I, II and III, for Statistics and Mathematics students
Probability I and II, for Statistics and Mathematics students
Stochastic Processes I, for Statistics and Mathematics students
Time Series I, for Statistics and Mathematics students
Statistical Methods, for Statistics students
Introduction to Multi Variate Analysis I, for Statistics students
Introduction to Queuing Systems, for Statistics and Mathematics students
Decision Theory I, for Statistics students
Simulation, for Statistics students
Regression I, for Statistics students
Differential Equations I, for Chemistry students

Editorial Activities

2014–Present Member of the Editorial Board, Journal of Hyperstructures
Invited Editor, Journal of Supercomputing
Invited Editor, Journal of Applied Mathematics and Computation (AMC)
Invited Editor, Journal of Applied Statistics
Invited Editor, Kharazmi Journal of Science
Invited Editor, Journal of Transition on Fuzzy System
Invited Editor, Journal of Textiles and Polymers
Invited Editor, Journal of Soft Computing

Invited Editor, International Journal of e-Navigation and Maritime Economy
Invited Editor, Iranian Journal of Fuzzy Systems
Invited Editor, Journal of Advanced Mathematical Modeling (JAMM)
Invited Editor, Journal of Mathematical Modeling (JMM)
Invited Editor, International Journal of Mathematical Modelling and Computations

Research Grants

- 2019 Annual Research Grant, University of Guilan, "Uncertainty Theory and Applications".
- 2018 Annual Research Grant, University of Guilan, "Quasi-Random Generators and Their Efficiency in Financial Mathematics".
- 2017 Annual Research Grant, University of Guilan, "Different Generators of Fuzzy Random Numbers and Their Comparison in Computations".
- 2016 Annual Research Grant, University of Guilan, "Fuzzy Random Variables and Its applications".
- 2015 Annual Research Grant, University of Guilan, "Investigation of Risk Factors and Their Prediction Using Monte Carlo Simulation".
- 2012 Research Grant, University of Guilan, "Independence Functions of a random variable" with (Dr. H. Samimi).
- 2011 Research Grant, University of Guilan, "Internal Evaluation Plan of the Department of Mathematics, University of Guilan" (with Dr. Samimi).
- 2010 Research Grant, University of Guilan, "Random Number Generators in Monte Carlo Integration" (with Dr. H. Samimi).
- 1995 Research Grant, "Problem Study and Problem Solving In-Service Teachers in Guilan Province".

Conferences and Workshops Organisation

- 2019 Chairman of 3th International Conference on Soft Computing, University of Guilan, 20-21 Nov
- 2017 Chairman of 2th International Conference on Soft Computing, University of Guilan, 22-23 Nov
- 2015 Scientific Secretary of 1th International Conference on Soft Computing, University of Guilan, 18-19 Nov
- 2011 Executive Secretary of 8th Seminar on Probability and Stochastic Processes, University of Guilan, 10-11 Sep

Awards

- 2007 Best researcher award, in recognition for my significant contributions to the statistical literature, University of Guilan.
- 2008 Best researcher award, in recognition for my significant contributions to the statistical literature. University of Guilan.
- 2009 Best researcher award, category winner on scientific research Between all universities of Guilan province.

Books

- 2011 Introduction to Stochastic Processes and their Applications, (in Farsi)
- 2013 Stochastic and non-Stochastic Numerical Analysis, (in Farsi)
- Translated Uncertainty Theory, Baoding Liu, 5th Edition, Online 2019
- Translated Fuzzy Probability and Statistics, J. J., Buckley, 2012
- Translated Simulation and the Monte Carlo Method, R. Rubinstein, 1981

List of PhD Dissertations/Students Supervised

- 2019 **Zeinab Hassanzadeh**, PhD, Applied Mathematics, University of Guilan, Dissertation: *Some improvements of the Monte Carlo method for solving fuzzy and crisp system of linear equations.*
- 2017 **Rahim Asghari**, PhD, Applied Mathematics, University of Guilan, Dissertation: *Investigation and analysis of stream ciphers (sequences) based on quasi-random generators.*
- 2016 **Ayoub Salimipour**, PhD, Applied Mathematics, University of Guilan, Dissertation: *The Efficiency of Simulation and Variance Reduction Techniques in Option Pricing under the Financial Models.*
Mahmood Navidi, PhD, Applied Mathematics, University of Guilan, Dissertation: *Stable distribution and asymptotic distribution behavior for first passage time (by random walk).*

- Mohadeseh Kanafchiyan**, PhD, Applied Mathematics, University of Guilan, Dissertation: Investigating on random methods in cryptography and their results.
- 2013 **Sara Ghasemalipour**, PhD, Applied Mathematics, University of Guilan, Dissertation: Random fuzzy renewal process and its results.
- Maryam Gharahdaghi**, PhD, Applied Mathematics, University of Guilan, Dissertation: Solving system of linear algebraic equations by Monte Carlo method with new estimators.
- 2011 **Farshid Mehrdoost**, PhD, Applied Mathematics, University of Guilan, Dissertation: Robust Monte Carlo algorithm for generalized eigenvalue problem and its application in multivariate statistical analysis.
- Mojteba Moradi**, PhD, Applied Mathematics, University of Guilan, Dissertation: Galton-Watson Processes with Periods Dependent.
- 2008 **Kianoush Fathi**, PhD, Statistics, Islamic Azad University, Science and Research Branch, Tehran, Dissertation: Monte Carlo Methods for Obtaining Matrix Inversion.

List of MSc Thesis Students Supervised

- 2019 **Mohamad Bassam**, MSc, Statistics, University of Guilan, Monte Tests in Data Analysis and Applications.
- Fatemeh Kochechinejad**, MSc, Statistics, University of Guilan, Analysis of Fuzzy and Crisp Random Variables in Computation.
- Seyedeh-Mona Ehsani**, MSc, Statistics, University of Guilan, Comparison of Multiple Approaches to Classical Linear Regression and Fuzzy Linear Regression and Selection of Optimized Simulated Model .
- 2018 **Morteza Malleki**, MSc, Statistics, University of Guilan, Monte Carlo Variance Reduction Methods in Matrix Inverse Calculation.
- Ammar Zaringhaba**, MSc, Statistics, University of Guilan, Monte Carlo variance reduction methods for solving linear systems.
- 2018 **Kolsoum Yousefpanah**, MSc, Statistics, University of Guilan, Resolvent Monte Carlo algorithm for solving linear equations.
- Gilda Ghomi**, MSc, Statistics, University of Guilan, Scrambled quasi-generating generators in Monte Carlo calculations.
- 2017 **Sara Norooz-Karkaragh**, MSc, Statistics, University of Guilan, Risk assessment and risk management based on simulation.
- Yalda Farahbakhsh**, MSc, Statistics, University of Guilan, Application of Levy's processes in risk theory.
- Jafar Pajoyan**, MSc, Applied Mathematics, University of Guilan, Semi - Markov fields and reward fields.
- 2016 **Nadia Azizzi**, MSc, Statistics, University of Guilan, Insurance Risk Assessment Prediction Based On Monte Carlo Simulation.
- Roya Kamali**, MSc, Statistics, University of Guilan, Risk assessment and risk management based on simulation.
- 2014 **Behjat Ashori-Kenarsari**, MSc, Applied Mathematics, University of Guilan, Fuzzy Hypothesis testing.
- Maryam Ghazizadeh-Khalifeh**, MSc, Statistics, University of Guilan, Applications of simulation in financial engineering.
- Rayhaneh Barrari**, MSc, Statistics, University of Guilan, Some results on fuzzy regression and its applications in Economics.
- Zohreh Darabipour**, MSc, Statistics, University of Guilan, A review of applications of stochastic processes in financial sciences.
- Narjes Pasandar**, MSc, Statistics, University of Guilan, Branching processes and its applications.
- Sina Darjazi**, MSc, Statistics, University of Guilan, Monte Carlo stochastic optimization.
- Banafsheh Ahmadi-Marjaghal**, MSc, Statistics, University of Guilan, Pseudo-random generators used in image processing .
- Fatemeh Keshtkar**, MSc, Statistics, University of Guilan, waiting time in queuing system with common server and multi vacations.
- 2013 **Hossian Khoshkar-Fashami**, MSc, Applied Mathematics, University of Guilan, Point Processes and Monte Carlo Simulation.
- Aliasghar Latifizadeh**, MSc, Statistics, University of Guilan, A central limit theorem and improved upper bounds for a hybrid-Monte Carlo sequence with application in computational.

- Tahereh Amiri-Chayjan**, MSc, Applied Mathematics, University of Guilan, Quasi random number and random number generators in Monte Carlo simulation.
- Maryam Hossiannejad**, MSc, Applied Mathematics, University of Guilan, continuous stochastic processes and their simulation.
- Masoumeh Khanalinia**, MSc, Statistics, University of Guilan, simulation methods of bivariate and multi-variate skew normal distributions.
- Fathemeh Gholizadeh-Dogahi**, MSc, Statistics, University of Guilan, Bayesian Monte Carlo methods and simulation.
- 2012 **Farzaneh Farsi Sheykhani**, MSc, Statistics, University of Guilan, Branching processes and its application for infectious diseases.
- Setareh Payk**, MSc, Applied Mathematics, University of Guilan, Skew-normal distribution and its extensions.
- Elham Radmoghadam**, MSc, Applied Mathematics, University of Guilan, Faure quasi random numbers generator and its application in computations.
- 2011 **Saber Salehpor**, MSc, Applied Mathematics, University of Guilan, Fuzzy Markov chains and its applications.
- Ali Khanali**, MSc, Applied Mathematics, University of Guilan, Conditional variance of fuzzy random variables and its properties.
- Akram Heydari-Harzevili**, MSc, Applied Mathematics, University of Guilan, Riemannian-fuzzy integrals by random method.
- Behnam Fallihi-Mamodan**, MSc, Applied Mathematics, University of Guilan, Optimization with Monte Carlo method.
- Seyed-Mostafa Shamsi-Abkenar**, MSc, Applied Mathematics, University of Guilan, Solution of Singular linear systems by Monte Carlo method.
- 2010 **Tahereh Eftekhari**, MSc, Applied Mathematics, University of Guilan, Sobol Sequence in Monte Carlo Computations.
- Aida Arafar**, MSc, Applied Mathematics, University of Guilan, Resolvent Monte Carlo Algorithms in Computations.
- Atyeh Jahanbin**, MSc, Applied Mathematics, University of Guilan, Simulated matrices and its application in computing.
- 2009 **Asghar Eskandari**, MSc, Applied Mathematics, University of Guilan, Some extensions of Monte Carlo methods for solving integral equations.
- Maryam Gharahdaghi**, MSc, Applied Mathematics, University of Guilan, Solving system of linear algebraic equations by Monte Carlo method with new estimators.
- Zahra Fallah-Ghasemi**, MSc, Applied Mathematics, University of Guilan, Monte Carlo method for finding eigen values of a matrix.
- 2008 **Thereh Eftekhari**, MSc, Applied Mathematics, University of Guilan, Sobol Sequence in Monte Carlo Computations.
- 2007 **Mojteba Motaleb**, MSc, Applied Mathematics, University of Guilan, The eigenvalue problems by Monte Carlo method.
- Manijeh Tahmasebi**, MSc, Applied Mathematics, University of Guilan, Monte Carlo method and variance reduction technique.
- 2006 **Rozza Javadzadeh Moghtader**, MSc, Applied Mathematics, University of Guilan, Parallel Monte Carlo Computations for sparse matrices.
- 2005 **Mehdi Seraji**, MSc, Applied Mathematics, University of Guilan, Monte Carlo method for solving linear equations.
- Nima Alibolandi**, MSc, Applied Mathematics, University of Guilan, Solving Partial Differential Equations by Monte Carlo Method and Its Applications.
- 2004 **Einollah Amoon**, MSc, Applied Mathematics, University of Guilan, Monte Carlo method in computing of the inverse matrix and their applications.

Postgraduate Advisor

PhD Advisor

- 2017 **Soheil Shokri**, *Statistics, University of Ferdosi Mashhad*, Some Topics on Non Parametric Predictor in Fuzzy Environment.

MSc Advisor

- 2013 **Mohamad-Reza Shamsali**, *Civil Engineering, University of Guilan*, Signal Optimization at Intersection Based on Stochastic Arrival Models of Pedestrians and Vehicles.
Siavash Ebrahimi, *Civil Engineering, University of Guilan*, Modeling Signalized Intersection Using Queueing Theory .
2010 **Frogh Norouzi-Sariri**, *Statistics, University of Mazandaran*, Modeling Signalized Intersection Using Queueing Theory.

PhD Dissertations External Review/Committee

- 2019 **Babak Jamshidi**, *Applied Mathematics, Statistics Branch*, Contact Process in Random Network Epidemic Models, University of Shahid Chamran, Ahvaz.
2010 **Amir Zeynal**, *Applied Mathematics, Statistics Branch*, Linear Modeling and Computational Linear Algebra, University of Guilan.
2009 **Hossian Samimi Haghozar**, *Probability Theory*, Point Processes and Its Applications, University of Guilan.
2008 **Hossian Aminikhah**, *Applied Mathematics, Homotopy perturbation method for systems of partial differential equations*, University of Guilan.

Promotions Peer Reviewer/Referee

- 2019 **Promotion to Associate Professor of Applied Mathematics**, *Dr. Mehri Bagheriyan*, University of Guilan, Chairman of Referees Commitment .
2019 **Promotion to Associate Professor of Statistics** , *Dr. Hamzeh Agahi*, Babol Noshirvani University of Technology, Invited External Referee.
2016 **Promotion to Associate Professor of Applied Mathematics**, *Dr. Farshid Mehrdoust*, University of Guilan, Rasht, Internal Referee.
2016 **Promotion to Full Professor of Statistics**, *Dr. Bahram Sadeghpour Gildeh*, Statistics, University of Mazandaran, Babolsar, Invited External Referee.
2015 **Promotion to Associate Professor of Statistics**, *Dr. Ahmad Pourdarvish*, University of Mazandaran, Babolsar, Invited External Referee.
2014 **Promotion to Full Professor of Applied Mathematics**, *Dr. Jafar Biazar*, University of Guilan, Rasht, Internal Referee.
2013 **Promotion to Full Professor of Pure Mathematics**, *Dr. Nasir Taghizadeh*, University of Guilan, Rasht, Internal Referee.
2008 **Employment as Assistant Professor, Oral Exams examiner**, *Dr. Asgharzadeh*, University of Mazandaran, Babolsar, Invited External Referee.

Invited Talks, Lectures and Workshops

- 2019 **B. Fathi-Vajargah**, *Efficient Improvements on Rand Library function in MATLAB and Quasi Random Number Generators in Monte Carlo computations, Annual Workshop in Faculty of Mathematical Sciences, Rasht, Iran.*
2019 **B. Fathi-Vajargah**, *Monte Carlo computations for fuzzy and crisp systems, The 9th National Seminar on Statistics and Fuzzy Probability, 1-2 May, Mazandaran University, Babolsar, Iran, Invited Speaker.*
2018 **B. Fathi-Vajargah**, *Some new developments and improvements of the efficiency of Monte Carlo method, The Second International Conference on Computational Finance and Management (CFM 2018), Renmin University of China, Chongqing, China.*
2016 **B. Fathi Vajargah**, *How we can improve the accuracy of Monte Carlo computations?, Ai-MAST Conference, Mokpo National Maritime Univ., Mokpo, South Korea.*

- 2008 **B. Fathi Vajargah**, *Stochastic integral and its improvement based on random number generators*, *Proceeding of 5th International Conference of Mathematics and Computations*, pp. 470-475, Plovdiv, Bulgaria.
- 2008 **B. Fathi Vajargah**, *Parallel Monte Carlo computations for solving linear systems*, *Research weak workshop*, University of Guilan, Rasht, Iran.
- 2008 **B. Fathi Vajargah**, *A high accurate estimation of the Auto-regressive time series by Monte Carlo method*, *Research weak workshop*, University of Guilan, Rasht, Iran.

Research Publications

- 2019 **B. Fathi-Vajargah, Z. Hassanzadeh**, *Monte Carlo method for the real and complex fuzzy system of linear algebraic equations*, *Soft Computing*, Online first published, 19 April, Doi:10.1007/s00500-019-03960-1.
- S. Ghasemalipour, B Fathi-Vajargah**, *Fuzzy simulation of European option pricing using mixed fractional Brownian motion*, *Soft Computing*, Online first published, 5 March, Doi:10.1007/s00500-019-03862.
- B. Fathi-Vajargah, Z. Hassanzadeh**, *Improvements on the hybrid Monte Carlo algorithms for matrix computations*, *Sadhana*, 44(1).
- 2018 **S. Ghasemalipour, B Fathi-Vajargah**, *The mean chance of ultimate ruin time in random fuzzy insurance risk model*, *Soft Computing* 22 (12), 4123-4131.
- B. Fathi-Vajargah, M. Navidi**, *First passage time distribution for linear functions of a random walk*, *Journal of Contemporary Mathematical Analysis (Armenian Academy of Sciences)*, Pleiades Publishing, 53 (4), 232-236.
- S. Ghasemalipour, B Fathi-Vajargah**, *The mean chance of ultimate ruin time in random fuzzy insurance risk model*, *Soft Computing* 22 (12), 4123-4131.
- B. Fathi-Vajargah, M. Navidi**, *First passage time distribution for linear functions of a random walk*, *Journal of Contemporary Mathematical Analysis (Armenian Academy of Sciences)*, Pleiades Publishing, 53 (4), 232-236.
- B. Fathi-Vajargah, M. Kanafchian, V. Alexandrov**, *Image encryption based on permutation and substitution using Clifford chaotic system and logistic map*, *Journal of Computers* 13 (3), 309-327.
- 2017 **B. Fathi-Vajargah, A. Salimipour**, *Evaluating wave random path using multilevel Monte Carlo*, *International Journal of e-Navigation and Maritime Economy* 7, 1-10.
- B. Fathi Vajargah, R. Asghari**, *Application of chaotic maps in designing cryptographic pseudo random number generators*, *Journal of Optoelectronics and Advanced Materials*, 19 (1-2), 109-116.
- S. Shokri, B. Sadeghpour-Gildeh, G. R. Mohtashami-Borzadaran, B. Fathi Vajargah**, *Fuzzy non-parametric predictive inference for the reliability of k-out-of-m systems*, *Reliability Theory and its Applications*, 4 (6) 1-11.
- 2016 **B Fathi-Vajargah, M. Kanafchian**, *Decrypting substitution-transposition cipher using Monte Carlo method based on Sobol quasi random generator*, *International Journal of Computer Science and Information Security*, 14 (9), 309.
- B Fathi-Vajargah, A Salimipour**, *Quasi control variate method and applications in option pricing*, *International Journal of Computer Science and Information Security* 14 (9), 104.
- B. Fathi Vajargah, A. Salimipour, S. Salahshour**, *Variance analysis of control variate technique and applications in Asian option pricing*, *Int. J. Industrial Mathematics*, 8 (1), 65-71.
- B. Fathi-Vajargah, S. Ghasemalipour**, *Simulation of a random fuzzy queuing system with multiple servers*, *Journal of Contemporary Mathematical Analysis* 51 (2), 103-110.
- B. Fathi-Vajargah, S. Ghasemalipour**, *Random fuzzy numbers generation with cubic Hermit membership function and its application in simulation*, *International Journal of Computing Science and Mathematics* 7 (4), 301-311.
- B. Fathi- Vajargah, R. Asghari**, *A novel pseudo-random number generator for cryptographic applications*, *Indian Journal of Science and Technology* 9 (6).
- M. Navidi, B. Fathi-Vajargah**, *On asymptotic behavior of local probabilities of crossing the nonlinear boundaries by aperturbed random walk*, *Applied Mathematical Modelling*, 40, 1506-1513.
- B. Fathi-Vajargah, S. Ghasemalipour**, *Simulation of a random fuzzy queuing system with multiple servers*, *Journal of Contemporary Mathematical Analysis*, 51 (22), 103-110.
- 2015 **B. Fathi-Vajargah, A. Asghari**, *Implementation of chaotic linear congruential generator for message encryption*, *Sci. Int. (Lahore)*, 27(3), 1797-1801.

- B. Fathi-Vajargah, A. Asghari**, *A modification on the chaotic linear congruational generator*, *Journal of Applied Sciences*, Vol. 5(15) Apr. 2120-2129.
- B. Fathi-Vajargah, T. Amiri**, *Improving Niederreiter quasi random numbers generator in simulation and estimating high-dimensional integrals*, *World Applied Programming*, 60-67.
- H. Safari-Katesari, B. Fathi-Vajargah**, *Testing adverse selection using Frank copula approach in Iran insurance markets*, *Journal of mathematics and computer Science*, 154-158.
- B. Fathi-Vajargah, S. Ghasemalipour**, *The average chance simulation of busy time in random fuzzy queuing system with multiple servers*, *Annals of Fuzzy Mathematics and Informatics*, 871-879 .
- B. Fathi-Vajargah, M. Gharehdaghi**, *Reducing periodicity of fuzzy Markov chains based on simulation using Halton sequence*, *Communications in Statistics - Simulation and Computation*, 2169-2175 .
- B. Fathi-Vajargah, A. Eskandari Chechaglou**, *New modified scrambled Faure sequences*, *Communications in Statistics Simulation and Computation*, Volume 44, Issue 3, <https://doi.org/10.1080/03610918.2013.790443>.
- B. Fathi-Vajargah, S. Darjazi**, *Application of Newton-Raphson algorithm in common random numbers for finding the optimal solution in simultaneous perturbation stochastic approximation*, *World Applied Programming*, 68-72.
- 2014 **B. Fathi-Vajargah, S. Ghasemalipour**, *Random fuzzy inventory model with fuzzy interarrival times and demands based on fuzzy simulation*, *Caspian Journal of Applied Sciences Research*, (18-23).
- B. Fathi-Vajargah, A. AL-Zadeh**, *Reduction error in Asian option pricing based on partition Monte Carlo method*, *Math. Finance Lett.*
- M. Eslami, B. Fathi-Vajargah, M-Mirzazadeh, A-Biswas**, *Application of first integral method to fractional partial differential equations*, *Indian Journal of Physics*, 88 (2), 177-184.
- M. Eslami, M. Mirzazadeh, B. Fathi-Vajargah, A-Biswas**, *Optical solitons for the resonant nonlinear Schrödinger's equation with time-dependent coefficients by the first integral method*, *Optik-International Journal for Light and Electron Optics*, 125 (13), 3107-3116.
- M. Mirzazadeh, M. Eslami, B. Fathi-Vajargah, A. Biswas**, *Optical solitons and optical rogons of generalized resonant dispersive nonlinear Schrödinger's equation with power law nonlinearity*, *Optik-International Journal for Light and Electron Optics*, 125 (16), 4246-4256.
- B. Fathi-Vajargah, P. Hasanalipour**, *A novel multivariate generalized skewnormal distribution with two parameters $BGSN_{n,m}(\hat{\mu}_1, \hat{\mu}_2)$* , *Journal of Applied Mathematics, Statistics and Informatics* 10(1), DOI: 10.2478/jamsi-2014-0007.
- B. Fathi-Vajargah, A. Jahanbin**, *A way for low ranking matrices and its stochastic computations using Monte Carlo method*, *Journal of Applied Mathematics, Statistics and Informatics* 10(1), DOI: 10.2478/jamsi-2014-0006.
- B. Fathi-Vajargah, S. Ghasemalipour**, *Improving the minium of long-term expected cost in fuzzy renewal process based on fuzzy simulation with Halton sequence*, *World Applied Programming*, 1-7.
- B. Fathi-Vajargah, H. Khoshkar-Fashtomi**, *Monte Carlo simulation for interpreting, Improved time points of a given point process using conditional intensity function*, *Gen. Math. Notes*, 21 (2), 104-113.
- B. Fathi-Vajargah, A. AL-Zadeh**, *On the efficiency of partition pseudo random number generated in integral estimation*, *Eng. Math. Lett*, 2014:20.
- B. Fathi-Vajargah, S. Ghasemalipour**, *Some application of random fuzzy queuing system based on fuzzy simulation*, *International Journal of Mathematical Computational Science and Engineering*, Vol.8, No.3, 583-546.
- B. Fathi-Vajargah, H. Khoshkar-Fashtomi**, *On simulating point processes based on efficient algorithms*, *World Appl. Programming*, 124-131.
- B. Fathi-Vajargah, H. Khoshkar-Fashtomi**, *Simulating of Poisson point process using conditional intensity function (Hazard function)*, *International Journal of Advanced Statistics and Probability*, 34-41.
- B. Fathi-Vajargah, M. Gharehdaghi**, *Improvement of fuzzy image contrast enhancement using simulated Ergodic fuzzy Markov chains*, *Mathematical Problems in Engineering*, online publication, <https://www.hindawi.com/journals/mpe/2014/343514/>.
- B. Fathi-Vajargah, H. Khoshkar-Fashtomi**, *Simulating nonhomogeneous poisson point process based on multi criteria intensity function and comparison with its simple form*, *Journal of mathematics and computer Science*, 133-138.

- B. Fathi-Vajargah, R. Asghari**, *Simulation method for solving stochastic differential equations with constant diffusion coefficients*, *Journal of mathematics and computer Science*, 28-32.
- 2013 **B. Fathi-Vajargah, F. Mehrdoust, E. Radmoghaddam**, *A robust and accurate quasi-Monte Carlo algorithm for estimating eigenvalue of homogeneous integral equations*, *Hindawi Publishing Corporation, ISRN Computational Mathematics*, <https://www.hindawi.com/journals/isrn/2013/891029/>.
- B. Fathi-Vajargah, A. Eskandari Chechaglou**, *Optimal Halton sequence via inverse scrambling*, *Communications in Statistics -Simulation and Computation*, 476-484.
- B. Fathi-Vajargah, F. Farsi**, *The generation extinction time and the estimation of the mean using Monte Carlo method in Galton-Watson geometric offspring distribution*, *Advances in Computer Science and its Applications (ACSA)*, 382-385.
- B. Fathi-Vajargah, S. Ghasemalipour**, *Some applications of random fuzzy alternating renewal processes based on fuzzy simulation*, *Journal of Fuzzy Set Valued Analysis*, 1-8.
- B. Fathi-Vajargah, P. Hasanlipour**, *Introducing a novel bivariate generalized skew-symmetric normal distribution*, *Journal of mathematics and computer Science*, 226-271.
- 2012 **M. Moradi, B. Fathi-Vajargah, B. Daneshian, Z. Vahedipour**, *Poisson mixed distributions in the branching processes simulation*, *Advances in Computer Science and its Applications (ACSA)*, 267-270.
- B. Fathi-Vajargah, E. Radmoghaddam**, *Optimal Faure sequence via mix Faure with the best scrambling schemes*, *Advances in Computer Science and its Applications (ACSA)*, 306-314.
- B. Fathi-Vajargah, S. Peyk**, *Two-parameter generalized skew-normal distributions*, *Advances in Computational Mathematics and its Applications (ACMA)*, 222-226.
- B. Fathi-Vajargah, S. Osouli**, *Simulating skew normal distribution and improving the results*, *Advances in Computational Mathematics and its Applications (ACMA)*, 183-188.
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