

Curriculum Vitae of

Mousa Golalizadeh Lahi

Address: Department of Statistics
Faculty of Mathematical Sciences
Tarbiat Modares University
Iran
P.O.Box 14115-111

Nationality: Iranian
Date of Birth: 23/09/1972
Place of Birth: Iran
Marital Status: Married
Children: 2

Phone: +98 (0) 21 82884705
Fax : +98 (0) 21 82883493
Email: golalizadeh@modares.ac.ir

Education

Sept. 2002- Dec. 2006 **Doctor of Philosophy (Ph.D.)**
Statistics
School of Mathematical Sciences, Nottingham University
Nottingham, UK

Thesis Title Statistical Modelling and Inference for Shape Diffusions

Supervisor Prof. I. L. Dryden

Co-Supervisor Prof. F. G. Ball

Sept. 1994- Feb. 1997 **Master of Science (M.Sc.)**
Statistics
School of Mathematics, Shahid Beheshti University
Theran, Iran

Thesis Title Statistical Tolerance Limit and its Application in
Semiconductor Industry

Supervisor Dr. S. Noorbaloochi

Sept. 1990-June. 1994 **Bachelor of Science (B.Sc.)**
Statistics
School of Mathematics, Shahid Chamran University
Ahvaz, Iran

Honours and Awards

- 1- Travel award given by IMS for presenting paper in ISNPS3.
- 2- Ranked 5th Nation-Wide in Iran University Entrance Exam for Master of Statistics.
- 3- Ranked 3rd at the National Exam for Obtaining Scholarship to Study Abroad.
(Ministry of Sciences, Research and Technology of Iran Scholarship)

Research Interests

- Shape Analysis
- Statistical Inference
- Multilevel Modelling
- High Dimensional Analysis
- Computer Intensive Programming
- Statistical Learning

Research Experience

2006-2008	Research Assistant Division of Statistics, University of Nottingham, Nottingham, UK
2002-2005	Teaching Assistant Division of Statistics, University of Nottingham, Nottingham, UK
1995-1997	Research Assistant Centre for Research in Semiconductor Industries, Tehran, Iran
2011- 2024	Non-resident Researcher IPM, Tehran, Iran

Work Experience

2016- Now	Associate Professor Faculty of Mathematical Sciences, Tarbiat Modares University, Tehran, Iran
2019- 2024	Board of Directors of the Iranian Statistics Society
2010-2021	Head of Department of Statistics Department of Statistics, Tarbiat Modares University, Iran
2008- 2015	Assistant Professor Faculty of Mathematical Sciences, Tarbiat Modares University, Tehran, Iran
2006-2008	Research Assistant Division of Statistics, University of Nottingham, Nottingham, UK
2010- 2021	Deputy of the Iranian Statistics Society Department of Statistics, Tarbiat Modares University, Iran
1997-2005	Temporary Lecturer Division of Mathematics, University of Mazandaran, Iran
1997-1998	Deputy of the Iranian Statistics Society Division of Mathematics, University of Mazandaran, Iran
1995-1997	Statistical Consultant for the Centre for Research in Semiconductor Industries Tehran, Iran

Supervisions Experience

2008-Now

Supervision more than 35 M.Sc. students in Statistics
Faculty of Mathematical Sciences, Tarbiat Modares University, Iran

2008-Now

Advisor of seven Ph.D. and five M.Sc. students in Statistics
Faculty of Mathematical Sciences, Tarbiat Modares University, Iran

Ph.D. Supervisions

Mahnaz Nabil (2015)	Functional Principal Geodesic in Shape Analysis
Meisam Moghim Beygi (2016)	Regression Modelling of Shape Data
Omid Akhgari (2017)	Analysis of Multilevel Models with Endogenous Variables
Anahita Nodehi (2020)	Dimension Reduction of Random Angles with Nonlinear Statistics
Alireza Daneshvar (2022)	Penalized Quantile Mixed Regression for High Dimensional Data
Maryam Ahangari (2023)	Generalized Linear Mixed Models with Covariates Subject to Measurement Error
Sajedeh Moradnia (2024)	Supervised Clustering of High Dimensional Data Using Combination of Regularization and Dimension Reduction Methods
Forouzan Jafari (2024)	Variable Selection in Mixed Effect Quantile Regression for Analyzing High-Dimensional Data

Technical Experience

Programming language	C
Statistical Packages	Python, S-Plus, R, MLwiN
Mathematical Packages	Maple
Typesetting	Latex

Teaching Experience

Spring Terms (since 2012)

Multivariate Statistical (II)
Faculty of Mathematical Sciences, Tarbiat Modares University, Iran

Fall Terms (since 2011)

Multivariate Statistical (I)
Faculty of Mathematical Sciences, Tarbiat Modares University, Iran

Fall Terms (since 2019)

Foundation of Data Science
Faculty of Interdisciplinary Science and Technology, TMU, Iran

Spring Terms (since 2019)

Modeling & Visualization of Data
Faculty of Interdisciplinary Science and Technology, TMU, Iran

Fall Terms (since 2019)

Multivariate Statistical (I)
Faculty of Mathematical Sciences, Tarbiat Modares University, Iran

Fall 2009, 2010

Statistical Inference (I)
Faculty of Mathematical Sciences, Tarbiat Modares University, Iran

Spring Terms (since 2009)

Statistical Inference (II)
Faculty of Mathematical Sciences, Tarbiat Modares University, Iran

Fall 2011, Fall 2012

Advanced Statistics in Biological Sciences
Faculty of Biological Sciences, Tarbiat Modares University, Iran

Fall 2010

Mathematical Algorithms for Biological Sciences
Faculty of Biological Sciences, Tarbiat Modares University, Iran

Spring Terms (from 2003 to 2005)

Teaching Assistant for Statistics (G1ASTA)
School of Mathematics, University of Nottingham, UK
Duties: Lab Instructor and Demonstrator

Fall Terms (from 2003 to 2005)

Teaching Assistant for Probability (G1APRB)
School of Mathematics, University of Nottingham, UK
Duties: Demonstrator

Spring Term 2005

Teaching Assistant for Stochastic Processes (G1BMAC)
School of Mathematics, University of Nottingham, UK
Duties: Demonstrator

October 1997-June 2002

Temporary Lecturer
Division of Mathematics, University of Mazandaran, Iran

October 1997-June 2002

Part-time Lecturer
Division of Statistics, University of Payame_Noor, Behshar, Iran

Books

Browne, W. J., **Golalizadeh, M.**, Parker, R. M. A (2009)
A Guide to Sample Size Calculations for Random Effect Models via Simulation and the MLPowSim Software Package, University of Bristol.

Research Report

Ball, F.G., Dryden, I.L. and **Golalizadeh, M.** (2004).
Brownian Motion and Ornstein-Uhlenbeck Processes in Planar Shape Space.
Technical Report 04-11, Division of Statistics, University of Nottingham, UK

Golalizadeh. M. (2011).
On Study of Shape Statistics on Manifold.
Technical Report, School of Mathematics, IPM, Iran

Golalizadeh. M. (2012).
Functional Analysing of Shape Data.
Technical Report, School of Mathematics, IPM, Iran

Golalizadeh. M. (2014).
Study on Dihedral Variation Using Non-linear Statistics.
Technical Report, School of Biosciences, IPM, Iran

Golalizadeh. M. (2016).
Clustering Second Structure of Proteins Using Dihedral Angles.
Technical Report, School of Biosciences, IPM, Iran

Conference Poster

Brownian Motion and Ornstein-Uhlenbeck Processes in Planar Shape Space. 24th LASR Workshop (2005), Leeds, UK.
(Appeared in Conference Proceedings p.133)
joint work with F.G. Ball and I.L. Dryden

On Theoretical Aspect of Shape Analysis
40th Annual Iranian Mathematics Conference
Sharif University of Technology, Tehran, Iran

Multilevel Factor Analysis of the PIRLS Test for the Iranian Pupils.
29th International Workshop on Statistical Modelling (2014), Gottingen, Germany

Journal Papers

Reshadfar, N., Safaei, A. A., **Golalizadeh, M.** and Haghi, S. (2026)
Diagnosis of Leukemia from Bone Marrow Flow Cytometry Data using Deep Learning and Explainable AI
American Journal of Pathology, [doi: 10.1016/j.ajpath.2026.03.011](https://doi.org/10.1016/j.ajpath.2026.03.011)

Nodehi, A., **Golalizadeh, M.**, Maadooliat, M. and Agostinelli, C. (2025)
Torus Probabilistic Principal Component Analysis
Journal of Classification, <https://doi.org/10.1007/s00357-025-09504-7>

Jafari, F. and **Golalizadeh, M.** (2024)
A Comparative Analysis of Implementing Adaptive Lasso Penalty in Hierarchical Data: Quantile vs Mean Regression
Journal of Statistical Theory and Practice, **18**, 58.

Abolhosseini, S., Khorashadizadeh, M., Chahkandi, M. and **Golalizadeh, M.** (2024)
A Modified ID3 Decision Tree Algorithm Based on Cumulative Residual Entropy
Expert Systems with Applications, **255**, 12484.

- Moradnia, S. and **Golalizadeh, M.** (2024)
Supervised Clustering of Persian Handwritten Images Using Regularization and Dimension Reduction Methods
Transactions on Knowledge Discovery, **18**, 118.
- Ahangari, M., **Golalizadeh, M.**, Rezaei Ghahrood, Z. (2024)
Validation Data-Located Modification for the Multilevel Analysis of Miscategorized Nominal Response with Covariates Subject to Measurement Error
Mathematical Methods of Statistics, **32**, 223-240
- Moghimbeygi, M. and **Golalizadeh, M.** (2023)
A New Class of Spherical Pearson-type Family of Distributions
Journal of the Iranian Statistical Society, **22**, 99-121
- Moghimbeygi, M. and **Golalizadeh, M.** (2023)
Nonparametric Longitudinal Regression Model to Analyze Shape Data Using the Procrustes Rotation
Journal of Korean Statistical Society, **53**, 169-188
- Ahangari, M., **Golalizadeh, M.**, Rezaei Ghahrood, Z. (2023)
Maximum Approximated Likelihood Estimation in Generalized Linear Multilevel Model for Nominal Response with Covariates Subject to Measurement Error
Journal of Sciences, Islamic Republic of Iran, **34**, 333-348
- Daneshvar, A., **Golalizadeh, M.** (2023)
Quantile Regression Shrinkage and Selection via the Lqss0
Journal of Biopharmaceutical Statistics, **0**, 1-26
- Daneshvar, A., **Golalizadeh, M.** (2023)
Regression Shrinkage and Selection via Least Quantile Shrinkage and Selection Operator
PLOS ONE, **18(2)**, e0266267
- Fatemighomi, H. S., **Golalizadeh, M.**, and Amani, M. (2022)
Object-based Hyperspectral Image Classification Using a New Latent Block Model Based on Hidden Markov Random Fields
Pattern Analysis and Applications, **25**, 467-481
- Asili, S., Mohammadpour, A., Naghshineh Arjmand, O., and **Golalizadeh, M.** (2021)
A Comparative Study of Some Clustering Algorithms on Shape Data
Journal of the Iranian Statistical Society, **20**, 29-42
- Moghimbeygi, M. and **Golalizadeh, M.** (2021)
A new extension of von Mises-Fisher distribution
Hacettepe Journal of Mathematics & Statistics, **50**, 1838-1854
- Akhgari, O. and **Golalizadeh, M.** (2021)
On Seemingly Unrelated Regression Model with Skew Error
Journal of Statistical Theory and Applications, **20**, 97-110

- Nodehi, A, **Golalizadeh, M.**, Maadooliat, M and Agostinelli, C. (2021)
Estimation of Parameters in Multivariate Wrapped Normal Models for Data on p-torus
Computational Statistics, **39**, 193-215
- Moghimbeygi, M. and **Golalizadeh, M.** (2020)
New Directional Residuals to Treat Shape Changes Using Spherical Regression Models
Iranian Journal of Science and Technology A: Science, **44**, 1721-1730
- Jafari, H. and **Golalizadeh, M.** (2020)
Comparing Model-based Versus K-means Clustering for the Planar Shapes
Iranian Journal of Mathematical Sciences and Informatics, **15**, 99-109
- Moghimbeygi, M. and **Golalizadeh, M.** (2020)
Spherical Logistic Distribution
Communications in Mathematics and Statistics, **8**, 151-166
- Akhgari, O. and **Golalizadeh, M.** (2020)
On Bayesian Analysis of Seemingly Unrelated Regression Model with Skew Error
Revstat: Statistical Journal, **18**, 531-551
- Ahangari, M., **Golalizadeh, M.** and Rezaei Ghahroodi, Z. (2019)
Likelihood Inference in the Random Effects Logistic Regression Model with
Response Misclassification and Covariate Subject to Measurement Error
Journal of Statistical Research of Iran, **16** (1), 255-286
- Moghimbeygi, M. and **Golalizadeh, M.** (2018)
A Longitudinal Model for Shapes through Triangulation
ASTA Advances in Statistical Analysis, **103**, 99-121
- Mohammadpour, R, A., **Golalizadeh, M.** and Moharrami L. (2018)
A bias-variance trade-off in the prediction error estimation behaviour in bootstrap
methods for microarray leukemia classification
Journal of Biostatistics and Epidemiology, **4**(3), 49-54
- Akhgari, O. and **Golalizadeh, M.** (2017)
Bayesian Analysis of Regression Models Using Instrumental Variables: A Case
Study (Iranian Rural Households Income and Expenditure Data)
Journal of Statistical Research of Iran, **14** (1), 53-75
- Esfandyarifar, H., Nasiri, P. and **Golalizadeh, M.** (2016)
Bayesian and Expected Bayesian interval estimation for difference of binomial
Proportions
Journal of Applied Probability and Statistics, **11**, 107-123
- Moghimbeygi, M. and **Golalizadeh, M.** (2016)
Longitudinal shape analysis by using the spherical coordinates,
Journal of Applied Statistics, **44**, 1282-1295
- Nabil, M. and **Golalizadeh, M.** (2016) On Clustering Shape Data,
Journal of Statistical Computation and Simulation, **36**, 3995-4008

- Karam, A., Shayan, S., Maghsoudi, M., **Golalizadeh, M.** and Norbakhsh, S.F. (2016)
Complexity Theory and Collagist Approach in Geomorphic Systems,
Arid Regions Geography Studies, **6**, 18-33
- Nodehi, A., **Golalizadeh, M.** and Heydari, A. (2015),
Dihedral Angles Principal Geodesic Analysis Using Nonlinear Statistics,
Journal of Applied Statistics, **42**, 1962-1972
- Najibi, S. M, Faghihi, M., **Golalizadeh, M.** and Arab, S. S. (2015),
Bayesian Alignment of Proteins via Delaunay Tetrahedralization,
Journal of Applied Statistics, **42**, 1064-1079.
- Mahmoud nejad, H. and **Golalizadeh, M.** (2015),
A recursive algorithm on estimating the parameters in multilevel models
subject to the measurement errors on the covariates.
Journal of Statistical Computation and Simulation, **2**, 252-261.
- Fotouhi, H.R., and **Golalizadeh, M.** (2014),
Highly Resistance Gradient Descent Algorithm for Computing Intrinsic
Mean on Similarity Shape Space,
Statistical Papers, **56**, 1-20.
- Fotouhi, H.R., and **Golalizadeh, M.** (2012).
Exploring the Variability of DNA Moleculars via Principal Geodesic
Analysis on the Shape Space.
Journal of Applied Statistics, **39** (10), 2199-2207
- Abolfazli, R., Hosseini, M., Ghanizadeh, A., Ghaleiha, A., Tabrizi, M.,
Raznahan, M., **Golalizadeh, M.** and Akhondzadeh, S. (2011)
Double Blind Randomized Parallel Group Clinical Trial of Efficacy of the
Combination Fluoxetine plus Modafinil versus fluoxetine plus Placebo in the
Treatment of Major Depression.
Depression and Anxiety, **28**, 297-302
- Golalizadeh, M.** (2010).
A Useful Family of Stochastic Processes for Modeling Shape Diffusions.
Journal of Statistical Research of Iran, **7** (1), 21-36
- Browne, W.J., **Golalizadeh, M.**, Green, M.J. and Steel, F. (2009)
The use of simple reparameterizations to improve the efficiency of
Markov chain Monte Carlo estimation for multilevel models with
applications to discrete time survival models.
Journal of the Royal Statistical Society. Series A, Vol. 172, Part 3. pp. 579-598
- Ball, F.G., Dryden, I.L., and **Golalizadeh, M.** (2008).
Brownian Motion and Ornstein-Uhlenbeck Processes in Planar Shape Space.
Methodology and Computing in Applied Probability, Vol. 10, pp. 1-22
- Ball, F.G., Dryden, I.L., and **Golalizadeh, M.** (2006).
Discussion to the paper by Beskos et al. (2006)
Journal of the Royal Statistical Society. Series B, Vol. 68, Part 3. pp. 367-368

Training Course Attended

June-July 2003 Modelling Extremes and Other Topics in Environmental Statistics
Sheffield, UK

September 2004 Graduate Training Programme in Mathematical
Statistics and Applied Probability
Nottingham, UK
Modules: Coupling, Bayesian Statistics

Workshop Holden

Introductory Multilevel Data Analysis
SRTC Training Workshop, October 2009, Tehran, Iran

Essential of Multilevel Data Analysis for Medicine
Tehran University of Medical Sciences, February 2010, Tehran, Iran

Shape analysis and Classification models
Ilam University of Medical Sciences, May 2011, Ilam, Iran

Multilevel Data Analysis and Its Application
SRTC Training Workshop, February 2013, Tehran, Iran

Introduction to Shape analysis
SRTC Training Workshop, February 2013, Tehran, Iran

Introduction to Multilevel Data
SRTC Training Workshop, September 2014, Tehran, Iran

Programming with R
SRTC Training Workshop, February 2015, Tehran, Iran

Familiarity, Analysis and Programming with R
Iranian Survival Organization, September 2016, Tehran, Iran

Familiarity, Analysis and Programming with R
SRTC Training Workshop, May 2016, Tehran, Iran

Advanced Programming with R
SRTC Training Workshop, February 2020, Tehran, Iran

Workshop Attended

Stochastic Geometry, Biological Structure and Images
22nd LASR Workshop, July 2003, Leeds, UK

Workshop on Uncertainty, Complexity and Predictive Reliability of
Environmental/ Biological Models
April 14-16, 2004. University of Nottingham, UK

Quantitative Biology, Shape Analysis, and Wavelets
24th LASR Workshop, July 2005, Leeds, UK

Conference Presentations

- April 2004 Stochastic Processes on the Sphere and Triangle Shape Space,
The 27th Annual Conference of Research Students in Probability
and Statistics, Sheffield, UK. (Appeared in Proceedings p.49)
- July 2004 Some Results of the Brownian Motion in the Shape Space,
The 12nd Iranian Research Conference in Europe, Manchester, UK
- April 2005 Shape Diffusions
The 28th Annual Conference of Research Students in Probability
and Statistics, Cambridge, UK. (Appeared in Proceedings p.32)
- June 2005 Shape densities, shape diffusion and some old friends
RSS General Applications and Statistical Computing Sections, London.
joint work with Frank Ball and Ian Dryden*
- July 2005 Diffusion of Planar Shapes
The 13th Iranian Research Conference in Europe, Leeds, UK
- July 2006 Sample size calculations in multilevel modelling
The ESRC Research Methods Festival, Oxford, UK.
joint work with William Browne* and L. Leese
- July 2006 Ornstein-Uhlenbeck shape processes, simulation and inference
IMS Annual Meeting, Rio de Janeiro, Brazil
joint work with Frank Ball and Ian Dryden*
- August 2006 MCMC algorithms for shape diffusions
The 8th Iranian Statistical Conference (ISC), Shiraz, Iran
- April 2007 Sample size calculations in multilevel modelling
The Sixth International Amsterdam Conference on Multilevel Analysis
joint work with W.J. Browne
- April 2007 Using SMC MC for normal response multilevel models
The Sixth International Amsterdam Conference on Multilevel Analysis
joint work with William Browne*
- December 2007 Use of centred parameterisation and MCMC estimation to fit discrete
Time survival models
RSS Recent Advances in Multilevel Modelling and Methodology and
Applications, London
Joint work with William Browne*, Fiona Steele and Martin Green
- July 2008 Sample size calculations for multilevel models
The ESRC Research Methods Festival, Oxford, UK.
joint work with William Browne*

September 2008 Simple method to improve MCMC efficiency in random effects models
RSS Conference, Nottingham, UK.
joint work with William Browne*

October 2008 Shape analysis; introduction and other considerations
Department of Statistics, Tarbiat Modares University, Iran

December 2008 Familiarity with shape analysis
Department of Statistics, Tarbiat Modares University, Iran

May 2009 On simulation of shape diffusions
The 2nd International Conference of Iranian Operations Research
Society, University of Mazandaran, Iran

August 2009 A useful family of stochastic processes in shape analysis
7th Seminar on Probability and Stochastic Processes
Isfahan University of Technology, Isfahan, Iran

October 2009 On Matching in Structural Bioinformatics via Statistical Shape Analysis
The 3rd Workshop on Mathematical Chemistry, Tehran, Iran

November 2009 Shape analysis: what is it and how does it work?
Department of Statistics, University of Mazandaran, Iran

August 2010 Statistical Analysis of Power in Cross Classified Models via Simulation
The 10th Iranian Statistical Conference (ISC), Tabriz, Iran

September 2011 Principal Geodesic Analysis on Shape Space
Applied Statistics 2011, Ljubljana, Slovenia.

July 2012 A Monte Carlo Study on Bayesian SSD in Multilevel Models
8th CPS, Istanbul, Turkey

September 2012 Some New Challenges in the Statistical Shape Analysis
The 11th Iranian Statistical Conference (ISC), Tabriz, Iran

July 2013 Computing Intrinsic Mean Shape on Similarity Shape Spaces using a
Highly Resistant Algorithm
29th European Meeting of Statisticians, Budapest, Hungary

July 2015 Dimension Reduction of Dihedral Angles Data Using
Principal Geodesic Analysis
The 7th International Conference on Probability and Statistics,
Smolenice, Slovakia

June 2016 Nonparametric Regression to Model Shape Variability Using Spherical
Coordinates
Third Conference of International Society of Non-Parametric Statistics
(ISNPS), Avignon, France

- August 2016 Statistical Shape Analysis of Landform Data in Ardestan
The 13th Iranian Statistical Conference (ISC), Kerman, Iran
- July 2017 An Study on Comparing Distance-based and Probability-based
Discrimination Methods for Planar Shape Data
61st ISI World Statistics Congress, Marrakech, Morocco
- August 2017 Standard Brownian Motion Induced by Dihedral Angles Perturbation
The 11th Seminar on Probability and Stochastic Processes, Qazvin, Iran
- August 2018 Simple Methods to Cluster Planar Shapes
The 14th Iranian Statistical Conference, Shahrood, Iran
- August 2019 Clustering Planar Shapes Combined with Multidimensional Scaling
62nd ISI World Statistics Congress, Kualalumpur, Malaysia

* Presenter

Professional Affiliation

September 1997 - Present	Member of the Iranian Statistics Society
February 2003 - February 2005	Student Member of the RSS
January 2018 – Present	Member of ISI
January 2018 – Present	Member of IMS

Professional Services

2025-...	Editorial Board of Journal of the Iranian Statistical Society
2025-...	Editorial Board of Andishe-ye Amari (Persian Journal of the Iranian Statistical Society)
2012-2019	Editorial Board of Andishe-ye Amari (Persian Journal of the Iranian Statistical Society)
2019-Present	Editorial Board of Journal of Statistical Sciences (Persian Journal of the Iranian Statistical Society)
2019-2024	Board of Directors of the Iranian Statistics Society

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