Mehdi Maadooliat

CONTACT INFORMATION	Katherine Reed Cudahy Hall, Room 351 Dept. of Math. & Stat. Sci. (MSSC) Marquette University Milwaukee, WI 53201-1881, USA	*Phone:* (414) 288-6341 *E-mail:* mehdi.maadooliat@mu.edu maadooliat@wisc.edu *Web:* http://www.mssc.mu.edu/~mehdi

CITIZENSHIP　　Iranian - USA

RESEARCH INTERESTS

Statistical Machine Learning, Bioinformatics (Genomics & Proteomics),
Dimension Reduction and Functional Data Analysis

ACADEMIC EMPLOYMENT

- Associate Professor, Statistics, **Marquette University**, August 2020 - Present
- Honorary Fellow, Medical Genetics, **U. of Wisconsin SMPH**, Feb 2023 - Present
- Assistant Professor, Statistics, **Marquette University**, August 2013 - July 2020
- Adj. Ass. Res. Scientist, CPMR, **Marshfield Clinic**, December 2015 - July 2020

EDUCATION & TRAINING

Texas A&M University, College Station, Texas USA

Postdoctoral Fellow, Institute for Applied Mathematics & Computational Sciences (IAMCS), June 2011 - June 2013

Ph.D., Department of Statistics, August 2011, **GPA:** 4.00

- Dissertation Title: Dimension reduction and covariance structure for multivariate data, beyond Gaussian assumption
- Advisor: Professor Jianhua Huang (formerly at Texas A&M University)
- Co-Advisor: Professor Jianhua Hu (formerly at MD Anderson Cancer Center)

Marquette University, Milwaukee, Wisconsin USA

M.Sc., Mathematics, Statistics and Computer Science, August 2006, **GPA:** 3.96

- Essay Title: Skew normal distribution and maximization by parts in likelihood
- Advisor: Professor Naveen Bansal

Sharif University of Technology, Tehran, IRAN

B.Sc., Department of Mathematical Science, December 2003

- Essay Title: Secret sharing in graph theory
- Advisor: Emeritus Professor Ebadollah S. Mahmoodian

HONORS AND AWARDS

Way Klingler Young Scholar Award:
- Way Klingler award supports promising young scholars in critical stages of their careers following their third-year review. The award is intended to cover a portion of the salary to afford the recipient a one-semester release from teaching (March 2016).

Travel Supports:
- Australian National University (visited Canberra & Sydney, May 2019)
- Iran's National Elites Foundation (visited Tehran, Shiraz & Yazd, December 2017)
- King Abdullah University of Science & Technology (visited KAUST, November 2017)
- Pontificia Universidad Católica de Chile (visited Santiago, October 2017)
- King Abdullah University of Science & Technology (visited KAUST, March 2015)

NVIDIA:
- NVIDIA GPU Grant Program (September 2017).

Journal Articles (Under Revision & Resubmitted):

- H. Haghbin, Y. Zhao and **M. Maadooliat**, "Regularized multivariate functional principal component analysis for data observed on different domains", *Foundation of Data Science*

Journal Articles (Published/Accepted):

- A. Nodehi, M. Golalizadeh, **M. Maadooliat** and C. Agostinelli, "Torus probabilistic principal component analysis", *Journal of Classification*, **Published**, (2025)

- A.B. Granada, J. LaDisa, M. Samyn, J. Cava, S.S. Handler, J.F. Gerardin, B. Goot, **M. Maadooliat**, V. Hraška, "Hemodynamic evaluation of Norwood aortic arch geometry compared to native arch controls", *Journal of Biomechanical Engineering*, **147.5**, BIO-24-1224, (2025)

- H. Haghbin, J. Trinka and **M. Maadooliat**, "Rfssa: An R package for functional singular spectrum analysis", *The R Journal*, **16.2**, 82-98, (2024)

- S. Mahmoudiandehkordi, **M. Maadooliat** and S.J. Schrodi "Gwid: An R package and Shiny application for Genome-Wide Analysis of IBD data", *Bioinformatics Advances*, **4.1**, vbae115, (2024)

- A. Ghorbannia, A. Spearman, S. Sawalhi, R.K. Woods, **M. Maadooliat** and J.F. LaDisa, "A novel diastolic doppler index less affected by aortic arch anomalies co-existing with coarctation", *Pediatric Cardiology*, **Published**, (2024)

- H. Haghbin and **M. Maadooliat**, "A journey from univariate to multivariate functional time series: A comprehensive review", *WIREs Computational Statistics*, **16.1**, e1640, (2024)

- S. Nezampour, A. Nematollahi, R. Krafty and **M. Maadooliat**, "A new approach to nonparametric estimation of multivariate spectral density function using basis expansion", *Computational Statistics*, **39**, 3625-3641, (2024)

- A. Ghorbannia, H. Jurkiewicz, L. Nasif, A. Ahmed, J. Co-Vu, **M. Maadooliat**, R.K. Woods and J.F. LaDisa, "Coarctation duration and severity predict the likelihood of hypertension precursors in a preclinical model and hypertensive status among patients", *Hypertension*, **81.5**, 1115-1124, (2024)

- J. Trinka, H. Haghbin, H. Shang and **M. Maadooliat**, "Functional time series forecasting: Functional singular spectrum analysis approaches", *Stat*, **12**, e621, (2023)

- A. Ghorbannia, **M. Maadooliat**, R.K. Woods, S.H. Audi, B.J. Tefft, C. Chiastra, E.H. Ibrahim and J.F. LaDisa, "Aortic remodeling kinetics in response to coarctation-induced mechanical perturbations". *Biomedicines*, **11.7**, 1817, (2023)

- A. Ghorbannia, C.D. Ellepola, R.K. Woods, E.H. Ibrahim, **M. Maadooliat**, H.M. Ramirez and J. F. LaDisa, "Clinical, experimental, and computational validation of a new Doppler-based index for coarctation severity assessment", *Journal of the American Society of Echocardiography*, **35.12**, 1311-1321, (2022)

- H. Haghbin, S. M. Najibi, R. Mahmoudvand, J. Trinka and **M. Maadooliat**, "Functional singular spectrum analysis", *Stat (Special Issue in Statistics and Data Sci-*

ence), **10**, e330, (2021)

- A. Nodehi, M. Golalizadeh, **M. Maadooliat** and C. Agostinelli, "Estimation of multivariate wrapped models for data on a p-Torus", *Computational Statistics*, **36**, 193-215, (2021)

- N.K. Bansal, **M. Maadooliat** and S. Mahmoudiandehkordi, "On Bayes decision rule for testing multiple hypotheses with non-symmetric alternatives", *Journal of Statistical Theory and Practice*, **15**, 55, (2021)

- T. Chen, Y. Sun and **M. Maadooliat**, "Collective spectral density estimation and clustering for spatially-correlated data", *Spatial Statistics*, **38**, 100451, (2020)

- S. Guo, S. Jiang, N. Epperla, Y. Ma, **M. Maadooliat**, Z. Ye, B. Olson, M. Wang, T. Kitchner, J. Joyce, R. Strenn, J.J. Mazza, J.K. Meece, W. Wu, L. Jin, J.A. Smith, J. Wang and S.J. Schrodi, "A Gene-Based recessive diplotype exome scan discovers FGF6, a novel hepcidin-regulating iron metabolism Gene", *Blood*, **133.17**, 1888-1898, (2019)

- **M. Maadooliat**, Y. Sun and T. Chen, "Nonparametric collective spectral density estimation with an application to clustering the brain signals", *Statistics in Medicine*, **37**, 4789-4806, (2018)

- N.K. Bansal, **M. Maadooliat** and S.J. Schrodi, "Empirical Bayesian approach to testing multiple hypotheses with skewed alternatives", *Statistical Applications in Genetics and Molecular Biology*, **17**, A20180002, (2018)

- I. Ghosh, G.G. Hamedani, N.K. Bansal and **M. Maadooliat**, "On the mixtures of Weibull and Pareto (IV) distribution: an alternative to Pareto distribution", *Communications in Statistics - Theory and Methods*, **47**, 2073-2084, (2018)

- S.M. Najibi, **M. Maadooliat**, L. Zhou, J.Z. Huang and X. Gao, "Protein structure classification and loop modeling using multiple Ramachandran distributions", *Computational and Structural Biotechnology Journal*, **15**, 243-245, (2017)

- M.J. Bull, L. Boaz, **M. Maadooliat**, M.E. Hagle, L. Gettrust, M.T. Greene, S.B. Holmes and J.S. Saczynski. "Preparing family caregivers to recognize delirium symptoms in older adults following elective hip or knee arthroplasty", *Journal of the American Geriatrics Society*, **65**, e13-e17, (2017)

- **M. Maadooliat**, L. Zhou, S.M. Najibi, X. Gao and J.Z. Huang, "Collective estimation of multiple bivariate density functions with application to angular-sampling-based protein loop modeling", *Journal of the American Statistical Association*, **111**, 43-56, (2016)

- H.M. Kim, **M. Maadooliat**, R.B. Arellano-Valle and M.G. Genton, "Skewed Factor models using selection mechanism", *Journal of Multivariate Analysis*, **145**, 162-177, (2016)

- N.K. Bansal, G.G. Hamedani and **M. Maadooliat**, "Testing multiple hypotheses with skewed alternatives", *Biometrics*, **72**, 494-502, (2016)

- **M. Maadooliat**, N.K. Bansal, J. Upadhya, M.R. Farazi, Z. Ye, X. Li and S.J. Schrodi, "The decay of disease association with declining linkage disequilibrium: A

fine mapping theorem", *Frontiers in Genetics: Statistical Genetics and Methodology*, **7**, A217 (2016) (PMC5149547)

- **M. Maadooliat**, J.Z. Huang and J. Hu, "Integrating data transformation in principal components analysis", *Journal of Computational and Graphical Statistics*, **24**, 84-103, (2015)

- M. Ahsanullah, G.G. Hamedani and **M. Maadooliat**, "Characterizations of distributions via conditional expectation of generalized order statistics", *International Journal of Statistics and Probability*, **4**, 121-126, (2015)

- G.G. Hamedani, Z. Javanshiri, **M. Maadooliat** and A. Yazdani, "Remarks on characterizations of Malinowska & Szynal", *Applied Mathematics and Computation*, **246**, 377-388, (2014)

- L. Chen, M. Pourahmadi and **M. Maadooliat**, "Regularization of multivariate regression models with skew errors", *Journal of Statistical Planning and Inference*, **149**, 125-139, (2014)

- Z. Javanshiri and **M. Maadooliat**, "Beta Burr XII or five parameter Beta Lomax distribution: Remarks and characterizations", *Journal of Statistical Theory and Applications*, **13**, 105-110, (2014)

- M.E. Mousavi, P. Gardoni and **M. Maadooliat**, "Progressive reliability method and its application to offshore mooring systems", *Engineering Structures*, **56**, 2131-2138, (2013)

- **M. Maadooliat**, X. Gao and J.Z. Huang, "Assessing protein conformational sampling methods based on bivariate lag-distributions of backbone angles", *Briefings in Bioinformatics*, **14**, 724-736, (2013)

- **M. Maadooliat**, M. Pourahmadi and J.Z. Huang, "Robust estimation of the correlation matrix of longitudinal data", *Statistics and Computing*, **23**, 17-28, (2013)

- **M. Maadooliat**, J.Z. Huang and J. Hu, "Analyzing multiple-probe microarray: estimation and application of gene expression indexes", *Biometrics* **68**, 784-792, (2012)

- J.Z. Huang, M. Chen, **M. Maadooliat** and M. Pourahmadi, "A cautionary note on generalized linear models for covariance of unbalanced longitudinal data", *Journal of Statistical Planning and Inference*, **142**, 743-751, (2012)

- N.K. Bansal, **M. Maadooliat** and X. Wang, "Empirical Bayes and hierarchical Bayes estimation of skew normal populations', *Communications in Statistics - Theory and Methods*, **37**, 1024-1037, (2008)

Book Chapters:

- J. Trinka, H. Haghbin and **M. Maadooliat**, "Multivariate functional Singular Spectrum Analysis: A nonparametric approach for analyzing multivariate functional time series", book chapter in "Emerging topics in statistics and biostatistics: Innovations in multivariate statistical modeling", *Springer*, ISSN: 2524-7735, 187-221, (2022)

Monographs:

- G.G. Hamedani, **M. Maadooliat**, "Characterizations of recently introduced univariate continuous distributions", Nova, ISBN: 978-1-53612-261-9, (2017)

- G.G. Hamedani, **M. Maadooliat**, "Sub-Independence: A useful Concept", *Nova*, ISBN: 978-1-63463-476-2, (2015)

SOFTWARE
PACKAGES/APPS

Packages/Apps for Research:

- Regularized Multivariate Functional Principal Component Analysis (ReMFPCA)
  Package on CRAN **R** and GitHub⬤
- Functional Singular Spectrum Analysis (FSSA) and Multivariate Functional Singular Spectrum Analysis (MFSSA)
  Package on CRAN **R** and GitHub⬤
- Nonparametric Collective Spectral Density Estimation (NCSDE) and Multivariate NCSDE (MNCSDE)
  Package on GitHub⬤
- Genome-Wide Identity-by-Descent (GWID)
  Package on GitHub⬤
- Penelized Spline Collective Density Estimation (PSCDE)
- Skewed Empirical Bayesian (SEB) approach in multiple hypothesis testing
- LagSVD for protein structure modeling

Shiny Apps for Teaching:

- Regression Analysis
- EM Algorithm
- Functional Data Analysis - Functional PCA (FDA-FPCA)
- Statistics Calculator (JAMM)
- Distribution Calculator

TEACHING
EXPERIENCE

Instructor, Marquette Univ.   **August 2013 - Present**

- Full teaching responsibility for
  - $\sim$ 16 students in course MSSC 6250: Statistical Machine Learning
  - $\sim$ 15 students in course MSSC 6010: Computational Probability
  - $\sim$ 18 students in course MSSC 5931: Mathematical Foundations of Data Science
  - $\sim$ 9 students in course INDS 4997: Capstone in Data Science
  - $\sim$ 25 students in course MATH 4780(MSSC 5780): Regression Analysis
  - $\sim$ 11 students in course MATH 4750(MSSC 5750): Computational Statistics
  - $\sim$ 35 students in course MATH 4720(MSSC 5720): Statistical Methods
  - $\sim$ 17 students in course MATH 4710(MSSC 5710): Mathematical Statistics
  - $\sim$ 120 students in course MATH 1700: Modern Elementary Statistics

- Co-teach MSSC 6960: Seminar on
  Interdisciplinary data analysis - Fall 2013-16
      (Running a graduate seminar course with two of my colleagues)
  Functional data analysis - Spring 2021
      (Running a graduate seminar course with my Ph.D. student)

Instructor, TAMU   **January 2007 - May 2011**
- Full teaching responsibility for ~ 50 students per semester in three undergraduate courses STAT 303, STAT 302, and STAT 211
  Independently developed lecture notes, exams, activities, and quizzes

Graduate Teaching Assistant, TAMU   **September 2006 - December 2006**
- Graded assignments for 2 sections of STAT 201 and tutored in Help Lab

Graduate Teaching Assistant, Marquette Univ.   **September 2004 - May 2006**
- Teaching Assistant for the following courses :
  Finite Mathematics, Differential Equations and Statistical Inference

Graduate Teaching Assistant, Iran Univ. of Sci. & Tech. **January 2004 - May 2004**
- Teaching Assistant for "Differential Equations"

Short Courses, IUST and Iranian National Commission for UNESCO   **2000 - 2002**
- Delivering short courses on Networking, Internet and Programming Languages such as Visual Basic, Pascal and C++.

RESEARCH
EXPERIENCE
Assoc. Research Scientist, CPMR, Marshfield Clinic   **December 2015 - July 2020**
- Construction of novel statistical genetics methods

Postdoctoral Research Fellow, IAMCS-KAUST   **June 2011 - June 2013**
- Statistical modeling of the protein structure

Internship, MD Anderson Cancer Center,   **May 2009 - August 2009**
-   **May 2008 - August 2008**
- Modeling the gene expression indexes for multiple-probe microarray data

Graduate Research Assistant, TAMU   **January 2009 - December 2009**

GRANTS   External:
- National Institute of Health (NIH) R01: S. Hunter, K. Lukaszewicz, C. Smith, C. Sundberg, **M. Maadooliat**, S. Philips and M. Widlansky, "Mechanisms of fatigability with diabetes",
      Role: Co-Investigator (5% effort).   **September 2022 - April 2027**

- National Institute of Health (NIH) R01: S. Hunter, C. Sundberg, R. Fitts, and **M. Maadooliat**, "Fatigability of limb muscle in older adults: Protective effects of exercise",
      Role: Co-Investigator (5% effort).   **September 2020 - April 2025**

- Marshfield Clinic Research Institute (MCRI): S.J. Schrodi, **M. Maadooliat** and S. Guo, "Detecting shared chromosomal regions and compound heterozygous effects for diseases within PMRP",
      Role: Site-PI (20% effort).   **July 2018 - July 2020**

- National Institute of Health (NIH) R01: J. LaDisa, T. Eddinger and **M. Maadooliat**, "Mech. of morbidity after correcting aortic coarctations of varying severity",
      Role: Consultant (5% effort).   **June 2018 - May 2023**

- National Institute of Health (NIH) R01: R. Fitts, S. Hunter, A. Ng, S.W. Trappe, C. Konersman and **M. Maadooliat**, "Fatigability of limb muscle in older adults: Protective effects of exercise",
    Role: Co-Investigator (5% effort).   **September 2015 - August 2020**

- Retirement Research Foundation (RRF): M. Bull, L. Boaz, L. Gettrust, M. Hagle, J. Saczynski and **M. Maadooliat**, "Preparing family carers to recognize symptoms of acute confusion (Delirium) in older adults following elective arthroplasty of the knee or hip",
    Role: Statistician (10% effort).   **September 2014 - August 2015**

Internal:

- Strategic Innovation Fund (Marquette University): N. Bansal, **M., Maadooliat**, "Statistical Consulting and Training Center (SCTC)"
    Role: Co-PI.   **July 2016 - July 2019**

PRESENTATIONS

- "Regularized Multivariate Functional Principal Component Analysis"
    – The 17th Iranian Statistics Conference; Birjand, IR, Hybrid, Augt 2024
    – The 5th Seminar on Spatial Statistics and Applications, IR, Virtual; Oct 2023
    – ICSA Applied Statistics Symposium; Ann Arbor, MI, Jun 2023

- "Forecasting Functional Time Series using *Rfssa*"
    – Statistics Colloquium, University of Wisconsin; Whitewater, WI Dec 2024
    – Seminar talk at Bu-Ali Sina University, Hamedan, IR; Virtual, Mar 2023
    – Statistics Colloquium, Tarbiat Modares University; Tehran, IR, Jan 2023
    – Symposium on Data Science and Statistics; Pittsburgh, PA, Jun 2022

- "Functional Singular Spectrum Analysis (FSSA)"
    – Statistics Colloquium, University of Ottawa; Ontario, CAN, Apr 2022
    – Statistics Colloquium, Univ. of Southern Illinois; Carbondale, Mar 2022
    – Statistics Colloquium, University of Cincinnati; Cincinnati, Mar 2022
    – Statistics Colloquium, Tarbiat Modares University; Tehran, IR, Dec 2021
    – ICSA Applied Statistics Symposium; Virtual, Sep 2021
    – Data Science Ensemble, University of Maine; Orono, ME; Virtual, Aug 2021
    – The 1st Seminar in Data Science and Applications, Tehran; Virtual, Apr 2021
    – Symposium on Data Science and Statistics; Virtual, June 2020

- "Nonparametric collective (spectral) density estimation with applications in Bioinformatics"
    – The 18th International Conf. on CFE-CMStatistics; London, UK, Dec 2024
    – Seminar talk at Mellowes Center, Med. Coll. of Wis.; Milwaukee, WI Nov 2024
    – SCM Seminar, Sharif University of Technology; Tehran, IR, Jan 2020
    – The 3rd Frontiers in Biol. Sci. symposium, IPM; Tehran, IR, Dec 2019
    – Statistics Colloquium, Yazd University; Yazd, IR, Decr 2019

- Statistics Colloquium, Australian National Univ.; Canberra, AUS, May 2019
- Statistics Colloquium, University of Sydney; Sydney, AUS, May 2019
- Statistics Colloquium, Shahid Beheshti University; Tehran, IR, Jan 2019
- The 14th Iranian Statistics Conference; Shahrood, IR, Aug 2018
- Stat. Learn. and Data Sci. Conf.; Columbia Univ., New York, NY, Jun 2018
- Statistics Colloquium, Oklahoma State Univ.; Stillwater, OK, Feb 2018

- "Deep Learning in R"
  - Webinar Series hosted by Iranian Statistical Society, Decr 2020
  - The 15th Iranian Statistics Conference; Virtual, Sep 2020
  - Workshop on Deep Learning; Northwestern Mutual, Milwaukee, WI, Apr 2019

- "A one-day workshp on Functional Data Analysis and Dimension Reduction"
  - Shiraz University; Shiraz, IR, Nov 2017
  - Tarbiat Modares University; Tehran, IR, Nov 2017

- "Integrating data transformation in (functional) principal components analysis"
  - Statistics Colloquium, Yazd University; Yazd, IR, Dec 2017
  - ASA Wisconsin Chapter Annual meeting; Milwaukee, WI, Feb 2016
  - MSCS Department Colloquium, Marquette U.; Milwaukee, WI, Nov 2015
  - Computer Science Colloquium, UWM; Milwaukee, WI, Mar 2015
  - Statistics Colloquium, Shahid Beheshti University; Tehran, IR, Jan 2015
  - Joint Statistical Meetings; Boston, MA, Aug 2014
  - ICSA Applied Statistics Symposium; New York City, NY, Jun 2011

- "Empirical Bayesian approach to testing multiple hypotheses with skewed alternatives"
  - Flexible statistical models workshop; Santiago, Chile, Oct 2017

- "Collective nonparametric spectral density estimation with applications in clustering"
  - The 13th Iranian Statistics Conference; Kerman, IR, Aug 2016
  - Joint Statistical Meetings; Chicago, IL, Aug 2016

- "Collective modeling of the densities (III) with applications to protein structure classification and prediction"
  - Statistics Colloquium, Tarbiat Modares University; Tehran, IR, Jun 2016

- "Collective estimation of multiple bivariate density functions with application to angular-sampling-based protein loop modeling"
  - Scientific Seminar, Marshfield Clinic Research Foundation, WI, Aug 2015
  - The 2nd International Conf. on Math. and Stat.; Sharjah, UAE, Apr 2015
  - Comp. Sci. Colloquium, King Abdullah U. of Sci. & Tech., KSA, Mar 2015
  - Statistics Colloquium, UWM; Milwaukee, WI, Feb 2015

– Biostatistics Colloquium, MCW; Milwaukee, WI, Apr 2014

- "Joint estimation of multiple bivariate densities of protein backbone angles using an adaptive exponential Spline family"
  – Institute for Research in Fundamental Sci. (IPM); Tehran, IR, Jan 2014
  – Statistics Colloquium, Purdue University; West Lafayette, IN, Nov 2013
  – Joint Statistical Meetings; Montrèal, QC, Aug 2013
  – MSCS Department Colloquium, Marquette U.; Milwaukee, WI, Dec 2012

- "A goodness-of-fit test for the protein conformational sampling"
  – Joint Statistical Meetings; San Diego, CA, Aug 2012

- "Assessing protein conformational sampling methods based on bivariate lag distributions of backbone angle"
  – Workshop at University of Florida; Gainesville, FL, Jan 2014 (poster)
  – Biomolecular Dynamics Conf., KAUST; Thuwal, KSA, Feb 2013 (poster)
  – Interface; Houston, TX, May 2012

- "Analyzing multiple-probe microarray: estimation and application of gene expression indexes"
  – The 3rd Annual IAMCS Spring Symposium; College Station, TX, May 2011

- "Nonlinear PCA based on data transformation"
  – Joint Statistical Meetings; Vancouver, BC, Aug 2010

- "Skewed probabilistic principal component analysis"
  – Department of Statistics Skew Tea Meetings, Texas A&M University; College Station, TX, Mar 2010

- "Statistical modeling for Oligonucleotide arrays using PCA with likelihood approach"
  – Joint Statistical Meetings; Washington, DC, Aug 2009 (poster)

STUDENT
SUPOERVISION

Post-doctoral
- Dr. Morteza Najibi,   March 2014 - August 2015
  (Ph.D.: Shahid Beheshti University, Tehran, Iran)
  Research Topic: Nonparametric density estimation with an application to modeling the protein structure.

Doctoral (Advisor, Co-advisor)
- Mobina Pourmoshir,   August 2024 - Present
  (Ph.D. Student: Computational Sciences at Marquette University, Milwaukee, WI)
  Dissertation Topic: Nonlinear functional data analysis

- Naghi Hemmati,   April 2024 - Present
  (co-advisor: Dr. Mousa Golazlizadeh)
  (Ph.D.: Statistics at Tarbiat Modares University, Tehran, Iran)
  Dissertation Topic: Multivariate PCA in the angular domain.

- Soroush M.Dehkordi, August 2020 - Present (co-advisor: Dr. Steven Schrodi)
(Ph.D. Student: Computational Sciences at Marquette University, Milwaukee, WI)
Dissertation Topic: GWID: A new Genome-Wide identity-by-descent analysis for
disease gene mapping.

- Shirin Nezampour, August 2020 - Present
(Ph.D. Student: Computational Sciences at Marquette University, Milwaukee, WI)
Dissertation Topic: On the estimation problem in the multivariate time series.

- Jesse Adikorley, Dec 2020 - Present
(Ph.D. Student: Computational Sciences at Marquette University, Milwaukee, WI)
Dissertation Topic: Hilbertian Singular Spectrum Analysis

- Yue Zhao, January 2021 - August 2024
(Ph.D. Student: Computational Sciences at Marquette University, Milwaukee, WI)
Dissertation Topic: Regularized multivariate multidimensional functional Principal
Component Analysis

- Jordan Trinka, May 2019 - May 2021
(Ph.D.: Computational Sciences at Marquette University, Milwaukee, WI)
Dissertation Topic: Functional Singular Spectrum Analysis: Nonparametric decomposition and forecasting approaches for functional time series

- Anahita Nodehi, January 2016 - August 2020
(co-advisor: Dr. Mousa Golazlizadeh)
(Ph.D.: Statistics at Tarbiat Modares University, Tehran, Iran)
Dissertation Topic: Probabilistic dimension reduction for a set of random angles
using nonlinear statistics.

- Alireza Daneshvar, Jan. 2018 - Jan. 2020 (withdrew)
(co-advisor: Dr. Mousa Golazlizadeh)
(Ph.D.: Statistics at Tarbiat Modares University, Tehran, Iran)
Dissertation Topic: Dimension reduction of penalized quantile regression with mixed
effect.

Master (Advisor)
- Mobina Pourmoshir, July 2023 - Present
(M.Sc. Student: Applied Statistics at Marquette University, Milwaukee, WI)
Thesis Topic: Multivariate functional principal components analysis via penalized
rank one approximation

- Shirin Nezampour, August 2020 - December 2022
(M.Sc. Student: Computational Sciences at Marquette University, Milwaukee, WI)
Essay Topic: Nonparametric multivariate spectral density estimation

- Azam Niknafs, June 2020 - May 2021
(M.Sc. Student: Computational Sciences at Marquette University, Milwaukee, WI)
Essay Topic: A Hierarchical clustering approach to route optimization and ride sharing

- Jordan Trinka, February 2018 - May 2019
(M.Sc. Student: Computational Sciences at Marquette University, Milwaukee, WI)
Essay Topic: Functional Singular Spectrum Analysis and the clustering of time-dependent data

External Committee Member
- Tina Olfatbakhsh,   July 2022 - September 2022 (Advisor: Dr. Abbas Milani)
  (Ph.D. Student: ME. at Univ. of British Columbia, Okanagan, BC, Canada)
  Dissertation Topic: A materials informatics approach to modeling structure-property relationship in woven fabric composites.

- Tianbo Chen,   January 2016 - February 2019 (Advisor: Dr. Ying Sun)
  (Ph.D. Student: Statistics at King Abdullah Univ. of Sci. and Tech., Thuwal, SA)
  Dissertation Topic: Spectral density functions estimation and clustering for time series and spatial data.

- Ronak Vahed,   April 2018 - June 2018 (Advisor: Dr. Abbas Milani)
  (M.Eng. Student: ME. at Univ. of British Columbia, Okanagan, BC, Canada)
  Dissertation Topic: Experimental characterization, black-box modeling, and optimization of the fused deposition modelled Acrylonitrile Butadiene Styrene

Internal Committee Member
- Served on
  Ph.D. Committees of 13 students and
  M.Sc. Committees of 7 students
  at Marquette University.

SERVICES

Journal of Statistical Theory and Applications
- Associate Editor   **January 2012 - Present**
- Editorial Assistant   **June 2005 - December 2011**

Journal of the Iranian Statistical Society
- Associate Editor   **August 2017 - Present**

Wisconsin Chapter of the ASA
- Past President   **July 2016 - July 2017**
- President   **June 2015 - July 2016**
- Vice President   **July 2014 - June 2015**

Marquette University
- Ad hoc Committee to Design 5-year ADP-BIIN Program **Mar 2023 - Jan 2024**
- Marquette University Library Board member   **Jul 2022 - Present**
- COBA Dean Search Committee   **Mar 2022 - December 2023**
- Committee of Research (SFF/RRG proposals reviewer) **Oct 2021 - Nov 2021**
- Committee to Review and Expand the M.S. in Data Science **Sep 2021 - Dec 2021**

Marquette University - MSSC Department
- Faculty Search Committee for DS and AI   **October 2024 - Present**
- Comprehensive Exam Committee   **August 2024 - Present**
- Ad hoc member - Faculty Search Committee for DS   **Sep 2023 - Dec 2023**
- Graduate Chair (Director of Graduate Studies)   **July 2022 - July 2024**
- Co-Director of the Bioinformatics Program   **August 2021 - July 2024**
- Comprehensive Exam Committee   **August 2020 - January 2023**
- Undergraduate Chair   **August 2020 - July 2021**
- Co-Director of the Applied Statistics Program   **August 2020 - July 2021**
- Chair Search Committee   **August 2020 - February 2021**
- Chair an Ad hoc Comm. to Design Statistics Major **March 2020 - March 2021**
- Faculty Search Committee for Statistics   **August 2019 - February 2020**

- Undergraduate Committee **Jan 2018 - July 2020**
- Comprehensive Exam Committee **August 2017 - January 2018**
- Co-Director of the Office of Stat. Consult. & Training **July 2016 - June 2023**
- Graduate Committee **August 2015 - July 2016**
- Faculty Search Committee for Statistics **October 2015 - March 2016**
- Ad hoc Comm. - Design Hon. Stat. Course **September 2015 - December 2015**
- Website Coordinator **August 2014 - August 2020**
- Computer Support Committee **August 2014 - July 2015**

Work
Experience
Iranian National Commission for Unesco, Tehran, IRAN
- Network Administrator **January 2002 - December 2003**

Iran University of Science & Technology, Tehran, IRAN
- Network Administrator **January 2000 - December 2001**

Computer Skills
- Advance R, Matlab, Mathematica, Maple, SAS
- TeX, LaTeX, Microsoft Office
- .NET, SQL, ASP, PHP, XML, DHTML
- C++, Pascal, JavaScript, VBScript
- Linux, Network Security, TCP/IP

Organizations
- American Statistical Association member
- Institute of Mathematical Statistics member
- Iranian Statistical Society

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