

Mehdi Maadooliat

CONTACT INFORMATION	Katherine Reed Cudahy Hall, Room 311 Dept. of Math. Stat. & Comp. Sci. (MSCS) Marquette University Milwaukee, WI 53201-1881, USA	<i>Phone:</i> (414) 288-6341 <i>Fax:</i> (414) 288-5472 <i>E-mail:</i> mehdi@mscs.mu.edu <i>Web:</i> http://www.mscs.mu.edu/~mehdi
CITIZENSHIP	Iranian - USA	
RESEARCH INTERESTS	Bioinformatics, Machine Learning, Dimension Reduction, Functional Data Analysis and Skewed Distributions	
ACADEMIC EMPLOYMENT	<ul style="list-style-type: none">• Assistant Professor, Statistics, Marquette University, August 2013 - Present• Adj. Ass. Research Scientist, CHG, Marshfield Clinic, December 2015 - Present	
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, GPR: 4.00 <ul style="list-style-type: none">• Dissertation Title: Dimension reduction and covariance structure for multivariate data, beyond Gaussian assumption• Advisor: Professor Jianhua Huang• Co-Advisor: Dr. Jianhua Hu (MD Anderson Cancer Center) Marquette University , Milwaukee, Wisconsin USA M.S., Mathematics, Statistics and Computer Science, August 2006, GPR: 3.96 <ul style="list-style-type: none">• Essay Title: Skew normal distribution and maximization by parts in likelihood• Advisor: Professor Naveen Bansal Sharif University of Technology , Tehran, IRAN B.S., Department of Mathematical Science, December 2003 <ul style="list-style-type: none">• Essay Title: Secret sharing in graph theory• Advisor: Professor Ebadollah S. Mahmoodian	
HONORS AND AWARDS	Way Klingler Young Scholar Award: <ul style="list-style-type: none">• Way Klingler award supports promising young scholars in critical stages of their careers following their third-year review. The award is intended to fund \$2,000 in operating cost and to cover a portion of salary to afford the recipient a one-semester release from teaching (March 2016). Travel Supports: <ul style="list-style-type: none">• 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: <ul style="list-style-type: none">• NVIDIA GPU Grant Program (September 2017).	

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)

Journal Articles (Published/Accepted):

- **M. Maadooliat**, Y. Sun and T. Chen, “Nonparametric collective spectral density estimation with an application to clustering the brain signals”, *Statistics in Medicine*, (accepted)
- 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**, (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. Upadhyaya, 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, DOI)
- **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**, (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* **45**, 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)

TEACHING
EXPERIENCE

Instructor, Marquette Univ.

August 2013 - Present

- Full teaching responsibility for
 - ~ 120 students in course Math 1700
 - ~ 15 students in course Math 4710(MSCS 5710)
 - ~ 35 students in course Math 4720(MSCS 5720)
 - ~ 30 students in course Math 4780(MSCS 5780)
 - ~ 15 students in course MSCS 6010
- Independently developed lecture notes, exams, activities, and quizzes
- Seminar on interdisciplinary data analysis - Fall 2013-16
- Running a graduate seminar course with two of my colleagues

Instructor, TAMU

January 2010 - May 2011

January 2007 - December 2008

- 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 University of Science and Technology (IUST)
- **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, CHG, Marshfield Clinic **December 2015 - Present**
• 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

- 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).
- 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: Co-PI (20% effort).
- Strategic Innovation Fund (Marquette University): N. Bansal, **M., Maadooliat**, “Statistical Consulting and Training Center (SCTC)”
Role: Co-PI.
- 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).

PRESENTATIONS

- “Nonparametric Collective Spectral Density Estimation with an Application to Clustering the Brain Signals”
 - The 14th Iranian Statistics Conference; Shahrood, IR, August 2018

- Conference on Statistical Learning and Data Science; Columbia University, New York, NY, June 2018
- Statistics Department Colloquium, Oklahoma State University; Stillwater, OK, February 2018
- “A one-day workshop on Functional Data Analysis and Dimension Reduction”
 - Shiraz University; Shiraz, IR, November 2017
 - Tarbiat Modares University; Tehran, IR, November 2017
- “Integrating data transformation in (functional) principal components analysis”
 - Statistics Colloquium, Yazd University; Yazd, IR, December 2017
 - ASA Wisconsin Chapter Annual meeting; Milwaukee, WI, February 2016
 - MSCS Department Colloquium, Marquette U.; Milwaukee, WI, November 2015
 - Computer Science Colloquium, UWM; Milwaukee, WI, March 2015
 - Statistics Colloquium, Shahid Beheshti University; Tehran, IR, January 2015
 - Joint Statistical Meetings; Boston, MA, August 2014
 - ICSA Applied Statistics Symposium; New York City, NY, June 2011
- “Empirical Bayesian approach to testing multiple hypotheses with skewed alternatives”
 - Flexible statistical models workshop; Santiago, Chile, October 2017
- “Collective nonparametric spectral density estimation with applications in clustering”
 - The 13th Iranian Statistics Conference; Kerman, IR, August 2016
 - Joint Statistical Meetings; Chicago, IL, August 2016
- “Collective modeling of the densities (III) with applications to protein structure classification and prediction”
 - Statistics Colloquium, Tarbiat Modares University; Tehran, IR, June 2016
- “Collective estimation of multiple bivariate density functions with application to angular-sampling-based protein loop modeling”
 - Scientific Seminar, Marshfield Clinic Research Foundation, WI, August 2015
 - The 2nd International Conf. on Math. and Stat.; Sharjah, UAE, April 2015
 - Comp. Sci. Colloquium, King Abdullah U. of Sci. & Tech., KSA, March 2015
 - Statistics Colloquium, UWM; Milwaukee, WI, February 2015
 - Biostatistics Colloquium, MCW; Milwaukee, WI, April 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, January 2014
 - Statistics Colloquium, Purdue University; West Lafayette, IN, November 2013
 - Joint Statistical Meetings; Montréal, QC, August 2013

- MSCS Department Colloquium, Marquette U.; Milwaukee, WI, December 2012
- “A goodness-of-fit test for the protein conformational sampling”, Joint Statistical Meetings; San Diego, CA, August 2012
- “Assessing protein conformational sampling methods based on bivariate lag distributions of backbone angle”
 - Dimension Reduction and High Dimensional Inference Workshop, University of Florida; Gainesville, FL, January 2014 (poster)
 - International Conference on Biomolecular Dynamics: Experiment Meets Computation, KAUST; Thuwal, KSA, February 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, August 2010
- “Skewed probabilistic principal component analysis”, Department of Statistics Skew Tea Meetings, Texas A&M University; College Station, TX, March 2010
- “Statistical modeling for Oligonucleotide arrays using PCA with likelihood approach”, Joint Statistical Meetings; Washington, DC, August 2009 (poster)

STUDENT
SUPERVISION

Doctoral (Advisor, Co-advisor)

- Anahita Nodehi, January 2016 - Present (co-advisor: Dr. Mousa Golazlizadeh)
(PhD Student: Statistics at Tarbiat Modares University, Tehran, Iran)
Thesis Topic: Probabilistic dimension reduction for a set of random angles using nonlinear statistics.
- Shirin Nezampour, June 2016 - Present (co-advisor: Dr. Alireza Nematollahi)
(PhD Student: Statistics at Shiraz University, Shiraz, Iran)
Thesis Topic: On the estimation problem in the multivariate time series.
- Alireza Daneshvar, November 2017 - Present (co-advisor: Dr. Mousa Golazlizadeh)
(PhD Student: Statistics at Tarbiat Modares University, Tehran, Iran)
Thesis Topic: Dimension reduction of penalized quantile regression with mixed effect.

Post-doctoral

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

External Committee Member

- Tianbo Chen, January 2016 - Present (Advisor: Dr. Ying Sun)
(PhD Student: Statistics at King Abdullah Univ. of Sci. and Tech., Thuwal, SA)
Thesis Topic: Spectral density functions estimation and clustering for time series

and spatial data.

Internal Committee Member

- Served on
Ph.D. Committees of 6 students and
M.S. Committees of 3 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**

WORK

Iranian National Commission for Unesco, Tehran, IRAN

EXPERIENCE

- Network Administrator **January 2002 - December 2003**

Iran University of Science & Technology, Tehran, IRAN

- Network Administrator **January 2000 - December 2001**

COMPUTER SKILLS

- Matlab, Mathematica, Maple, SAS, R
- $\text{T}_{\text{E}}\text{X}$, $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$, Microsoft Office
- J2SE(Java 2 Standard Edition) : Applet, Socket, Thread, RMI
- J2EE(Java 2 Enterprise Edition) : JDBC, JNDI, Servlet, JSP, EJB, JavaMail,
- .NET, SQL, ASP, PHP, XML, DHTML
- C++, Pascal, JavaScript, VBScript
- Network Security, TCP/IP

ORGANIZATIONS

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

¹Last Updated: Oct. 2nd, 2018