

# Seyed Morteza Najibi

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Postdoctoral Research Fellow in Statistics

Department of Biochemistry and Structural Biology

Lund University, Sweden



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BIOGRAPHICAL	<b>Date and place of birth:</b> Apr. 1, 1986; Shiraz, Iran. <b>Marital Status :</b> Married, two children.	
WORK EXPERIENCES	<b>Postdoctoral Research Fellow in Statistics</b> Center for Molecular Protein Science, Lund University, Lund, Sweden <b>Tenure-Track Assistant Professor</b> Department of Statistics, College of Science, Shiraz University, Shiraz, Iran <b>Tenure-Track Assistant Professor</b> Department of Statistics, Faculty of Intelligent Systems and Data Science, Persian Gulf University, Busher, Iran	July. 2019 - present Sep. 2017 - June 2019 Aug. 2015 - Sep. 2017
RESEARCH POSITIONS	<b>Non-Resident Researcher of Neuro-Statistics</b> Neuroimaging and Analysis Group (NIAG), Tehran University of Medical Sciences, Tehran, Iran <b>Visiting Research Scholar</b> Department of Mathematics, Computer Sciences and Statistics, Marquette University, WI, US	Oct. 2016 - June 2020 Mar. 2014 - Sep 2014
ADMINISTRATIVE POSITIONS	<b>Head of Scientific Data Analysis Team (SDAT)</b> Non-profit organization, Tehran, Iran.  <b>Special Advisor to the President</b> Advising in implementing and evaluation of strategic plan, president department, Persian Gulf University, Iran.	Sep. 2015 - Present May 2017 - Nov. 2017
EDUCATION	<b>Ph.D. in Statistics</b> Department of Statistics, Faculty of Mathematical sciences, Shahid Beheshti University, Tehran, Iran. <ul style="list-style-type: none"><li>• <b>Thesis Title:</b> <i>Performance Improvement of Protein Alignment using Directional Statistics</i></li><li>• <b>Supervisor:</b> Faghihi M. R.</li><li>• <b>Advisors:</b> Golalizadeh M. and Arab S.</li></ul> <b>Master in Statistics</b> Department of Statistics, Faculty of Mathematical Sciences, Tarbiat Modares University, Tehran, Iran. Ranked 1st with GPA: 17.69/20. <ul style="list-style-type: none"><li>• <b>Thesis Title:</b> <i>On Protein Alignment via Statistical Shape Analysis</i></li><li>• <b>Supervisor:</b> Golalizadeh M.</li><li>• <b>Advisor:</b> Pezeshk H.</li></ul> <b>Bachelor in Statistics</b> Department of Statistics, Faculty of Sciences, Persian Gulf University, Boushehr, Iran. Ranked 1st with GPA: 17.72/20. <ul style="list-style-type: none"><li>• <b>Thesis Title:</b> <i>Multivariate Regression and It's Analysis by SAS Software</i></li></ul>	Sep. 2010 - Aug. 2015 Sep. 2008 - Sep. 2010 Sep. 2004 - Sep. 2008

EXTERNAL GRANTS	<ul style="list-style-type: none"> <li>• Cognitive Sciences and Technologies Council of Iran 2018- 2019 ‘Clinical Neuroimaging Analysis Database and Computational Platform’. <b>Role:</b> Co-applicant, Site-PI.</li> <li>• National Institute for Medical Research Development 2019-2021 ‘Predicting Postoperative Language Outcome using fMRI/DTI, Following Evaluation of Functional Language Mapping compared to Cortical Stimulation Mapping’ <b>Role:</b> Co-applicant, Statistician.</li> </ul>
SELECTED PUBLICATIONS	<ol style="list-style-type: none"> <li>1. <b>Najibi S. M.</b>, M. Maadooliat, L. Zhou, Huang J. Z. and Gao X. (2017). Protein Structure Classification and Loop Modeling Using Multiple Ramachandran Distributions, <i>Computational and Structural Biotechnology Journal</i>, <b>15</b>, 243-254 DOI: 10.1016/j.csbj.2017.01.011.</li> <li>2. M. Maadooliat, L. Zhou, <b>Najibi S. M.</b>, Huang J. Z. and Gao X. (2016). Collective Estimation of Multiple Bivariate Density Functions with Application to Angular-Sampling-Based Protein Structure Prediction, <i>Journal of American Statistical Association (JASA)</i>, <b>111</b> (513), 43-56, DOI: 10.1080/01621459.2015.1099535.</li> <li>3. Haghbin, H., <b>Najibi, S. M.</b>, Mahmoudvand, R., Trinkka, J., Maadooliat, M. (2021). Functional Singular Spectrum Analysis. <i>Stat</i> ;10:e330. DOI: 10.1002/sta4.330.</li> <li>4. Oliver, R. C., Potrzebowski, W., <b>Najibi S. M.</b>, Pedersen M. N., Arleth, L., Mahmoudi, N., Andre I. (2020), Assembly of Capsids from Hepatitis B Virus Core Protein Progresses through Highly Populated Intermediates in Presence and Absence of RNA, <i>ACS Nano</i>, 14, 8, 10226–10238, DOI: 10.1021/acsnano.0c03569</li> </ol>
HONORS & AWARDS	<p><b>Scholarship Award of Iranian Ministry of Science and Technology</b></p> <ul style="list-style-type: none"> <li>• Funding for visiting Marquette University, Milwaukee, US. 2014.</li> <li>• Funding for Tenure-Track Assistant Professor at Persian Gulf University Bushehr, Iran. 2015-2017.</li> </ul> <p><b>Ranking Award in 13<sup>th</sup> National Scientific Olympiad for bachelor students</b></p> <ul style="list-style-type: none"> <li>• Ranked 2<sup>nd</sup> in six &amp; seven geographic zone of Iran, Shiraz university, Iran Apr. 2008</li> <li>• Ranked 5<sup>nd</sup> in final competition, Shahid Beheshti University, Tehran, Iran Jun. 2008</li> </ul> <p><b>Outstanding Graduate Award</b></p> <ul style="list-style-type: none"> <li>• Ranked 1<sup>st</sup> among B.Sc. students in statistics Sep. 2008 with GPA of 17.72/20, Persian Gulf University, Boushehr, Iran</li> <li>• Ranked 1<sup>st</sup> among MSc. students in statistics Sep. 2008 with GPA of 17.69/20, Tarbiat Modares University, Tehran, Iran.</li> </ul>
COMPUTER SKILLS	<ul style="list-style-type: none"> <li>• Programming languages: R, practice of Rcpp, tidyverse (plyr/dplyr, ggplot2), shiny and dashr libraries, STAN and NIMBLE, practice of deep learning with Keras.</li> <li>• Python, Practices of NumPy, SciPy, TensorFlow, and PyMC3.</li> <li>• C and C++ (good).</li> <li>• SQL (good)</li> <li>• Linux: Web Server management, Kernel Virtual Machine (KVM), and Container (Docker).</li> <li>• High Performance computing management SLURM, Condor, and PBS.</li> <li>• Other: practice of LATEX, Sweave, Markdown and Rmarkdown for reporting, Git and Github.</li> </ul>
SUPERVISION EXPERIENCE	<p><b>Ph.D. Students Co-Supervisor:</b></p> <ul style="list-style-type: none"> <li>• Nooshin Akbari May 2019 - present Research Subject: Bayesian modeling on high dimensional manifold.</li> <li>• Elahe Saleh, Nov. 2017 - March. 2021 Research Subject: Non-parametric modeling in fMRI data.</li> </ul>

### Ph.D. Students Advisor (Assistant Supervisor):

- Tayebbeh Ebrahimi May. 2018 - Dec. 2020  
Research Subject: Metabolic parameters in patients with seizure using MRI.
- Mehrnaz Haghi Feb. 2019 - Sep. 2020  
Research Subject: The expression of autophagy genes in Alzheimer's disease
- Hossein Farrahi Dec. 2017 - Mar. 2020  
Research Subject: fMRI-based cognitive behavior therapy in anxiety disorder.
- Masoume Rostampour Jan. 2016- Jun. 2018  
Research Subject: Density imaging protocol in fMRI data.

### Master Students Co-Supervise:

- Maryam Shames Sep.2016 -Sep.2017  
Research Subject: Outliers on singular spectrum analysis (SSA).
- Sakineh Ramezani Jan.2018 - Feb.2019  
Research Subject: Trend in functional time series data.

### SCIENTIFIC COMMUNITY SERVICES

#### Scientific Data Analysis Team, Tehran, Iran

- Member of scientific committee of event:  
The First Event on Play with Real Data, Event homepage Dec. 2020- Jan. 2021
- Member of executive committee of Modern Methods  
in Insurance Pricing and Industrial Statistics Conference  
Bu-Ali Sina University, Hamedan, Iran, Conference homepage. Jan. 2017- Sep. 2017

#### Shiraz University, Department of Statistics, Iran

- Organizer and Lecturer at Development of Neuroimaging Symposium  
and Advanced fMRI Data Analysis Workshop, Website: [sdat.ir/dns98](http://sdat.ir/dns98) Apr. 2019
- Organizer and Lecturer at the Development of Data Science  
and its Role in Creating Job Opportunities, Feb. 2019, Website [sdat.ir/dss97](http://sdat.ir/dss97) Feb. 2019

#### Tehran University of Medical Sciences, Neuroimaging Analysis Group

- Organizer and Lecturer at Advanced Statistical method in Cognitive Science Workshop Series,  
Movement 1, Website: [sdat.ir/statcog96](http://sdat.ir/statcog96) Feb. 2018
- Lecturer at Functional, Effective, and Structural Brain Connectivity Workshop, Dec. 2017
- Lecturer at Neuroscience of addiction and functional MRI Workshop, July 2016

#### Persian Gulf University, Iran

- Lecturer at the workshop of application of data mining in Biology, Mar. 2016
- Lecturer at workshop of basic of R for researchers, , Apr. 2017

#### Shahid Beheshti University, Iran

- Organizer and Lecturer at advanced statistical method  
in cognitive science workshop Series (9 days), Institute for  
Cognitive & Brain Sciences, Website: [sdat.ir/fa/statcog95](http://sdat.ir/fa/statcog95) June. 2016 - Feb. 2017
- Administrator of High Performance Computing (HPC) system, Faculty of Science, 2010-2013

#### Tarbiat Modares University, Tehran, Iran

- Member of executive committee of the Third conference and workshop on  
Mathematic Chemistry. Feb. 2010 ]
- Member of executive committee of 33<sup>th</sup> Mathematics Students Contest in Iran. Aug. 2009

#### Iranian Statistical Society, Tehran, Iran

- Editor of website [the official website of Iranian Statistical Society](#), Sep. 2008 - Sep. 2012.
- Member of committee for Webinar Series of ISS, April 2020 - present.

### PROFESSIONAL MEMBERSHIPS

- Permanent member of Iranian Statistical Society 2006 - present
- Member of American Statistical Association, 2014-present
- Regular member of International Statistical Institute (ISI) 2016 - present

TEACHING  
EXPERIENCE

**Assistant Professor**  
Shiraz University, Shiraz, Iran

Sep. 2017 - June 2019

Teaching:

- Statistical Methods
- Basics of C++ Programming
- Computational Statistics with R
- Linear Algebra for Statistics
- Statistics and probability II for Geography
- Probability and Mathematics for Engineering sciences
- Advanced Statistical Computing Lab

**Assistant Professor**

Sep. 2015 - Aug. 2017

Persian Gulf University, Busher, Iran Teaching:

- Statistical computing with R
- Simulation methods
- Statistics and probability I and II
- Probability and Mathematics for Engineering sciences
- Introduction to Matrices and Linear Algebra

**Lecturer**

Feb. 2010 - Feb. 2014

Shahid Beheshti University, Tehran, Iran

Teaching:

- Statistics and probability II for Computer Sciences students
- Basic of probability for Mathematics students
- Probability I for Mathematics students
- Probability II for Computer Sciences students
- Statistical software for Statistics students
- Probability and Mathematics for Engineering sciences students
- Descriptive Statistics for Psychology students

PEER-REVIEWED  
JOURNAL  
ARTICLES  
(PUBLISH DATE  
ORDERED)

1. Mayeli, A, LaGoy, A., Donati, F. L., Kaskie, R. E., **Najibi, S. M.**, Fabio Ferrarelli (2021). Sleep abnormalities in Individuals at Clinical High Risk for Psychosis, *Journal of Psychiatric Research*, DOI: 10.1016/j.jpsychires.2021.03.006
2. Bhatti, F.A, Hamedani, G. G. ,**Najibi, S.M.**, Ahmad, M. (2021). On the Extended Chen Distribution: Development, Properties, Characterizations and Applications. *Annals of Data Science*, v. 8 (1), P. 159 – 180, DOI: 10.1007/s40745-019-00202-x
3. Haghbin, H., **Najibi, S. M.**, Mahmoudvand, R., Trinka, J., Maadooliat, M. (2021). Functional Singular Spectrum Analysis. *Stat* ;10:e330. DOI: 10.1002/sta4.330.
4. Naseri P., Alavi Majd H., Tabatabaee S. M. , Khademi N., and **Najibi S. M.** (2021). Functional Brain Response to Emotional Musical Stimuli in Depression, Using INLA Approach for Approximate Bayesian Inference. *Basic and Clinical Neuroscience*, 12, 1, 95-104, DOI: 10.32598/bcn.9.10.480.
5. Oliver, R. C., Potrzebowski, W., **Najibi S. M.**, Pedersen M. N., Arleth, L., Mahmoudi, N., Andre I. (2020), Assembly of Capsids from Hepatitis B Virus Core Protein Progresses through Highly Populated Intermediates in Presence and Absence of RNA, *ACS Nano*, 14, 8, 10226–10238, DOI: 10.1021/acsnano.0c03569
6. Haghi, M., Masoudi, R. and **Najibi S. M.** (2020). Distinctive alteration in the expression of autophagy genes in Drosophila models of amyloidopathy and tauopathy. *Uppsala Journal of Medical Sciences*, 125:4, 265-273, DOI: 10.1080/03009734.2020.1785063
7. Saleh, E., **Najibi S. M.**, Oghabian M. A., Yasseri, M., Zera'ati H. (2020). Modeling Brain Functional Magnetic Resonance Imaging Data Using Collective Density Function Estimation Method Based on Directional Statistics for Determining Addiction Patterns. *Archives of Pharmacy Practice*, 11(S1):131-40.
8. Bhatti, F.A. , Hamedan, G.G.i, **Najibi S. M.**, and Ahmad Munir (2020). Cubic rank transmuted modified Burr III distribution: Development, properties, characterization and application. *Journal of data science*, v. 18 (2), P. 299 – 318, DOI: 10.6339JDS.202004.18(2).0005
9. Farrahi H, Gharraee B, Oghabian M A , Pirmoradi M R, **Najibi S M** , and Batouli, A.H. (2020). Psychometric Properties of the Persian Version of the Overall Anxiety Severity and Impairment Scale (OASIS), *Iran J Psychiatry Behav Sci* . ; 14(4):e100674. doi: 10.5812/ijpbs.100674.

10. Alizadeh N, Yousof H.M., Jahanshahi S. M. A., **Najibi, S. M.**, and G. G. Hamedani (2020), The transmuted odd log-logistic-G family of distributions, *Journal of Statistics and Management Systems*, 1-27, DOI: 10.1080/09720510.2019.1685228.
11. Bhatti F.A. , Hamedani G. G., **Najibi S. M.**, Ahmad M. (2019). On Modified Extended Exponential Power Life Testing Distribution: Development, Properties, Characterizations and Application, *Annals of Data Science*, 6 (3) 413-439, DOI: 10.1007/s40745-018-0167-y.
12. Hamedani, G.G. , Rasekhi, **Najibi, S.M.**, M., Yousof, H.M., Alizadeh, M., (2019). Type II general exponential class of distributions, *Pakistan Journal of Statistics and Operation Research*, 15 (2), 503-523, DOI: 10.18187/pjsor.v15i2.1699
13. Hamedani, G.G., Yousof, H.M. , Rasekhi, M., Alizadeh, M., **Najibi, S.M.** (2018). Type I general exponential class of distributions, *Pakistan Journal of Statistics and Operation Research*, 14 (1), 39-55, DOI: 10.18187/pjsor.v14i1.2193
14. Naseri P., Alavi Majd H., **Najibi S. M.** , Tabatabaee S. M. , Faghihzadeh E. (2018). Neural Processing of Food Stimuli in Self-Regulation Brain Regions using Bayesian General Linear Modeling Approach, *Middle East Journal of Family Medicine*, 16 (9), 29-35, DOI: 10.5742/mewfm.2018.93494.
15. Rostampour M., H. Hashemi, **Najibi S.M.** and Oghabian M. A. (2017). Detection of structural abnormalities of cortical and subcortical gray matter in patients with MRI-negative refractory epilepsy using neurite orientation dispersion and density imaging, *Physica Medica*, 48, 47-54, DOI: 10.1016/j.ejmp.2018.03.005.
16. **Najibi S. M.**, M. Maadooliat, L. Zhou, Huang J. Z. and Gao X. (2017). Protein Structure Classification and Loop Modeling Using Multiple Ramachandran Distributions, *Computational and Structural Biotechnology Journal*, 15, 243-254 DOI: 10.1016/j.csbj.2017.01.011.
17. M. Maadooliat, L. Zhou, **Najibi S. M.**, Huang J. Z. and Gao X. (2016). Collective Estimation of Multiple Bivariate Density Functions with Application to Angular-Sampling-Based Protein Structure Prediction, *Journal of American Statistical Association (JASA)*, 111 (513), 43-56, DOI: 10.1080/01621459.2015.1099535.
18. **Najibi S. M.**, Faghihi M. R., Golalizadeh M., Arab S. (2015). Bayesian Alignment of Proteins Using Delaunay Tetrahedralization. *Journal of Applied Statistics*, 42 (5),1064-1079, DOI: 10.1080/02664763.2014.995605.
19. **Najibi S. M.**, Javadi M., Noorini N., Mousakazemi, N. and Hemmati M. (2012). Using Telephone in Surveys, *Iranian Journal of Official Statistics Studies*, 23 (2), 159–178, in Persian.
20. **Najibi S. M.**, Golalizadeh M. (2011). Statistical Analysis of directed wind angles. *Neda Journal of Iranian Statistics Society*, 8 (2), 40–49, in Persian.
21. Tazikeh N., **Najibi S. M.** (2010). Functions Family of “apply” in Splus: Simplicity and Speeding up the execution. *Neda Journal of Iranian Statistics Society*, 8 (1), 44–50, in Persian.

ARTICLES UNDER  
REVIEW

1. Haghi, M., Masoudi, R., Yousefi, R. and **Najibi S.M.** (2021). Thymoquinone ameliorates (modulates) the effect of Tau and Amyloid beta on Autophagy gene expression in *Drosophila melanogaster* models of amyloidopathy and tauopathy. Submitted.

PACKAGES &  
SOFTWARES

1. Haghbin H., **Najibi S. M.**, Trinka J. and Maadooliat M. (2020). Functional Singular Spectrum Analysis Package for Analysing Functional Time Series: *Rfssa* Package. Github page.

REFEREED  
CONFERENCE  
PAPERS

1. **Najibi S. M.** The Roles of Statistics in Cognitive Data Science, Challenging Issue of Basic Sciences, Fasa University, Fasa, Iran, 2018.
2. **Najibi S. M.** Discovering Brain Parcellation Using Collective Density Estimation Approach, 7th Neuroscience Congress, Iran University of Medical Sciences, Tehran, Iran, 2018.



3. **Najibi S. M.** Application of Shape Analysis in protein Classification. 14th Iranian Statistics Conference, Shahrood University of Technology, Shahrood, Iran, 2018.
4. **Najibi S. M.**, Batouli S.A.H. Strategies for Application of Directional Statistics in Probabilistic Machine Learning. *Modern Method in Insurance Pricing and Industrial Statistics*, Bu-Ali Sina University, Hamedan, Iran, 2017.
5. Saleh E., Zare-Sadeghi A., **Najibi S. M.**, Applications of Statistical Machine Learning in Neuroimaging. *Modern Method in Insurance Pricing and Industrial Statistics*, Bu-Ali Sina University, Hamedan, Iran, 2017.
6. **Najibi S. M.**, Faghihi M. R., Golalizadeh M., Arab S., Maadooliat M., Bayesian Alignment of Proteins Using Delaunay Tetrahedralization. *Second International Conference on Mathematics and Statistics*, American University of Sharjah, Shajah, UAE, 2015.
7. **Najibi S.M.**, Maadooliat M., Faghihi M.R., *Nonparametric Joint Estimation of Multiple Bivariate Densities of Protein Backbone Angles Using Spherical Spline*, Joint Statistical Meeting, Boston, MA, US, 2014.
8. **Najibi S.M.** and Golalizadeh M., Bayesian Matching in structural alignment of protein, *8th Seminar on Probability and Stochastic Processes*, Rasht, Gilan, Iran, in Persian, 2011.
9. Golalizadeh M. and **Najibi S.M.**, On Matching in Structural Bioinformatics via Statistical Shape Analysis, *The 3rd conference and workshop on Mathematic Chemistry*, Tarbiat Modares University, Tehran, Iran, 2010.
10. **Najibi S.M.** and Golalizadeh M., Statistical Analysis of directed wind angles, *10th conference of Statistics*, Tabriz university, Tabriz, in Persian, 2010.
11. **Najibi S.M.**, Mazarei H., Hosseinpouri M., Stochastic Processes on Spheres, *7th Seminar on Probability and Stochastic Processes*, Isfahan University of Technology, Isfahan, appeared in conference proceeding, 103, in Persian, 2009.
12. **Najibi S.M.**, Tazykeh N. and Qytuly A., Framework, Environment and Scope in R and Splus, *4th Conference of Statistics*, University of Payamenoor, Tehran, appeared in conference proceeding (extended abstract), pp.10-12, in Persian, 2009.

TALK &  
PRESENTATIONS

- How to find our value as a statistician, Invited Talk, Statistic Day in Iran, Department of Statistics, Yazd University, Iran, October 2019.
- Necessities of Developing as an Elite Data Scientists Team, Invited talk, Department of Computer, Shiraz University, Iran, May 2019.
- Non-Parametric Joint Estimation of Neighbor-Dependent Ramachandran Distributions
  - MSCS Department Colloquium, Marquette U.; Milwaukee, WI, US, Sep 2014
  - IPM - Institute for Research in Fundamental Sciences, Tehran, Iran, Oct. 2014
  - Monthly Seminar at Department of Statistics, Shahid Beheshti University, Tehran, Iran, Oct. 2014
- *Statistical Bioinformatics via Statistical Shape Analysis*, Journal Club Meeting, Apr. 2014, Marquette University, Milwaukee, WI, US.
- *Directional Statistics in Bioinformatics*, Weekly seminar, Jun. 2010, Tarbiat Modares University, Tehran, Iran
- *Could Statistical Shape Analysis Play a Role in Bioinformatics?*, joint work with Dr. Goalizadeh M., Monthly seminar, Feb.2010, IPM - Institute for Research in Fundamental Sciences, Tehran, Iran.

WORKSHOP  
ATTENDANCE

- *Risk Management with Big Data and Applications in Industry* Workshop by David Rios Insua in Modern Method in Insurance Pricing and Industrial Statistics conference, Bu-Ali Sina University, Hamedan, Iran, 4th Sep. 2017.
- *IPM - NUS Workshops on Bioinformatics and Computer Science*, Apr. 2011, IPM, Tehran, Iran
- *The 1<sup>st</sup> workshop in Phylogeny tree*, Apr. 2010, IPM, Zirab, Mazandaran, Iran

LANGUAGE

- English: fluent; Swedish: basic; Persian: native;