Curriculum vitae

Updated:2025/09



Davood Shahsavani

Ph.D. in Statistics
Associate Professor,
Division of Statistics,
Faculty of Mathematical Sciences
Shahrood University of Technology,
Shahrood, Iran.

Phone/Fax: +98 23 3200235

E-mail: dshahsavani@shahroodut.ac.ir, davoodshah@yahoo.com

University Education:

1986-1991 B.Sc. Mathematical Statistics, Ferdowsi Univ. of Mashhad, Mashhad, Iran
 1991-1994 M.Sc. Mathematical Statistics, Ferdowsi Univ. of Mashhad, Mashhad, Iran

2003-2008 Ph.D. Statistics, Linköping Univ., Linköping, Sweden (Under supervision of Prof. Anders Grimvall)

Employments:

1994-2003 Lecturer, Shahrood university of technology. Shahrood, Iran
 2003-2008 Educational leave
 2008- 2016 Assistant Prof., Shahrood university of technology, Shahrood, Iran
 2016-present Associate Prof., Shahrood university of technology, Shahrood, Iran

Academic Positions

Head of central library, Shahrood University of Technology, 2013-2019

Teaching experiences:

Course name	Level
Statistics and Probability 1 & 2	B.Sc Mathematics
Time Series Analysis	"
Random Processes	"
Programming (Pascal and C)	"
Calculus 1	"
Differential Equations	"
Regression Analysis	B.Sc Statistics
Design and Analysis of Experiments	"
Time Series Analysis	"
Mathematical Statistics	"
Statistical Methods	"
Statistics 1 & 2	B.Sc Management & Agriculture
Engineering Statistics	B.Sc Civil & Mining Eng.
Engineering Statistics	B.Sc Electrical Eng.
Statistical Learning	M.Sc. and Ph.D - Statistics
Reliability	M.Sc. – Mechanical engineering

Professional Services:

Member of the Scientific and Executive Committee, 14th Iranian Statistics Conference, Shahrood University of Technology, Iran, August 2018.

Executive director of the 2nd Seminar on Spatial Statistics and Its Applications, Shahrood University of Technology, Iran, October 2017

List of the research activities:

Journal papers

- 1) R, Lotfi, **D. Shahsavani**, M. Arashi (2025). Classifying elliptically distributed observations using the Ledoit–Wolf shrinkage approach. *Journal of Multivariate Analysis* (JMVA), 210, Article 105495.
- 2) V. Goudarzi, **D. Shahsavani**, M. Kazemi (2025). A robust partial linear model combining a modified Huber loss function and variable selection. *Statistical Papers*, 66, 124, 1-28.
- 3) S. E. Hosseini, **D. Shahsavani**, M. R. Rabiei, M. Arashi (2024) Small area estimation with partially linear mixed-t model with measurement error. *Journal of Computational and Applied Mathematics*, 446 (15), Article No. 115871.
- 4) S. E. Hosseini, **D. Shahsavani**, M. R. Rabiei, M. Arashi, H. Baghishani (2022). Small Area Estimation Using a Semiparametric Spatial Model with Application in Insurance. *Symmetry*, 14, 1-13.

- 5) R. Lotfi, **D. Shahsavani**, M. Arashi (2022) Classification in High Dimension Using the Ledoit–Wolf Shrinkage Method. Mzthematics, 10 (21).
- 6) M. Kazemi, **D. Shahsavani**, M. Arashi, PC. Rodrigues (2021). Identification for partially linear regression model with autoregressive errors. *Journal of Statistical Computation and Simulation*, 91(7), 1441-1454.
- 7) M. Kazemi, **D. Shahsavani**, M. Arashi, PC. Rodrigues (2021). Estimation in partial linear model with spline modal function, *Communications in Statistics-Simulation and Computation*, 50 (11), 3256-3272.
- 8) M. Beglari, N. Goudarzi, **D. Shahsavani**, M. Arab Chamjangali, Rahele Dousti (2020). QSAR modeling of anti-HIV activity for DAPY-like derivatives using the mixture of ligand-receptor binding information and functional group features as a new class of descriptors, *Network Modeling Analysis in Health Informatics and Bioinformatics*, 9, 59.
- 9) M. Beglari, N. Goudarzi, **D. Shahsavani**, M. Arab Chamjangali, Z. Mozafari (2020). LM-ANN-based QSAR model for the prediction of pEC₅₀ for a set of potent NNRTI using the mixture of ligand–receptor interaction information and drug-like indexes, *Network Modeling Analysis in Health Informatics and Bioinformatics*, 9, 53.
- 10) M. Beglari, N. Goudarzi, **D. Shahsavani**, M. Arab Chamjangali, Z. Mozafari (2020). Combination of radial distribution functions as structural descriptors with ligand-receptor interaction information in the QSAR study of some 4-anilinoquinazoline derivatives as potent EGFR inhibitors. *Structural Chemistry*, 31, 1481–1491.
- 11) M. Kazemi, **D. Shahsavani**, M. Arashi (2018). A sure independence screening procedure for ultra-high dimensional partially linear additive models. *Journal of Applied Statistics*, 46 (8), 1385-1403
- 12) M. Kazemi, **D. Shahsavani**, M. Arashi (2018). Variable Selection and Structure Identification in High Dimension for Partial Linear Additive Models. *Journal of statistical science*, 12(2), 485-512
- 13) M. Kazemi, **D. Shahsavani**, M. Arashi (2018). Variable selection and structure identification for ultrahigh-dimensional partially linear additive models with application to cardiomyopathy microarray data. *Statistics, Optimization and Information Computing (SOIC)*, 6,373-382
- 14) N. Goudarzi, **D. Shahsavani**, F. Emadi, M. Arab chamjangali (2016). Quantitative structure-property relationships of retention indices of some sulfur organic compounds using random forest technique as a variable selection and modeling method. *Journal of separation sciences*, 39(19), 3835-3842.
- 15) E. Es'haghi, H. Baghishani, **D. Shahsavani** (2016). Time-varying coefficients models for recurrent event data when different varying coefficients admit

- different degrees of smoothness: application to heart disease modeling. *Statistics in Medicine*. 35 (23), 4073-4280.
- 16) S. Emamgholi, S. Bateni, **D. Shahsavani**, T. Ashrafi, H. Ghorbani (2015). Estimation of soil cation exchange capacity using Genetic Expression Programming (GEP) and Multivariate Adaptive Regression Splines (MARS). *Journal of Hydrology*, 529, 1590-1600.
- 17) H. Taheri, **D. Shahsavani**, S.Sargazi, M. Habibi (2015). Evaluation of MARS for the spatial distribution modeling of carbon monoxide in urban area. *Atmospheric pollution Research* 6, 581-588.
- 18) N. Goudarzi, **D.Shahsavani**, F. Emadi, M. Arab (2014). Application of random forests to predict the retention indices of some polyciclyc aromatic hydrocarbons. *Journal of Chromatography A*, 1333, 25–31
- 19) E. Esaghi, H. Baghishani, **D. Shahsavani** (2014). Estimation of Semiparametric Survival Models with Time Varying Effects for Recurrent Event Data by Using Kernel Method. *Journal of statistical science* 7(1), 1-24.
- 20) N. Goudarzi, **D. Shahsavani** (2012). Application of a random forests (RF) method as a new approach for variable selection and modelling in a QSRR study to predict the relative retention time of some polybrominated diphenylethers (PBDEs). *Anlalythical Methods* 4, 3733-3738.
- 21) M. Gholipoor, S. Emamgholizadeh, H. Hassanpour, **D. Shahsavani**, H. Shahoseinia, M. Baghib, A. Karimi (2012). The optimization of root nutrient content for increased sugar beet productivity using an artificial neural network. *International Journal of Plant Production* 6 (4), 429-442.
- 22) **Shahsavani, D.**, Taheri Shahraiyni, H. (2011). Introduction of MARS as a new method for modelling of spatial distribution of annual precipitation. *Engineering e-Transaction*, 6(2), 90 -98.
- 23) **Shahsavani, D.**, Grimvall, A. (2011). Variance-based sensitivity analysis of model outputs using surrogate models. *Environmental Modelling and Software* 26(6), 723-730.
- 24) **Shahsavani**, **D**. and Grimvall, A. (2009). An adaptive design and interpolation technique for extracting highly nonlinear response surfaces from deterministic models. *Reliability Engineering and System Safety* 94(7), 1173-1182.
- 25) **Shahsavani, D.** and Grimvall, A. (2008). Surrogate models composed of locally estimated neural networks. *Technical Report* LiU-IDA-STAT-02/08, Linköping University, Linköping, Sweden (*Submitted in Computer Physics and Communication*).

26) **Shahsavani, D. (1999)**. Probability and epidemiology. *Andisheye Amari (2), 4 th year.*

International Conference papers

- 1) Davood Shahsavani, Hamid Taheri Shahrayni (2012). Machine learning methods for hyperspectral image classification and progress in the insurance and food production industries. *Oral presentation at the International Symposium on Business and Industrial Statistics (ISBIS 2012)*, Bangkok, Thailand, 17-21 June 2012.
- 2) Davood Shahsavani, Stefano Tarantola, Marco Ratto (2010). Evaluation of MARS modeling technique for sensitivity analysis of model output. *Procedia Social and Behavioral Sciences 2, 7737-7738*, Sixth International Conference on Sensitivity Analysis of Model Output (*SAMO* 2010). Milan, Italy.
- 3) Ghavami- Riabi, R., Shahsavani, D. (2009). Estimation of the gold concentration using MARS model in shear zone mineralization-SW of Sagquez, Iran. *Goldschmidt conference*, Davos, Switzerland, 21-26 June 2009.
- 4) Shahsavani, D, Grimvall, A. (2007). Extracting complex nonlinear response surfaces from deterministic models with multiple inputs, *Oral presentation at the Fifth International Conference on Sensitivity Analysis of Model Output (SAMO 2007)*, Budapest, Hungary, 18-22 June 2007.
- 5) Extracting complex nonlinear response surface from deterministic models with multiple inputs. *Poster presentation at the Annual Meeting of The International Environmetrics Society (TIES)*, Kalmar, Sweden, 18 22 June 2006.
- 6) Wahlin, K., Shahsavani, D., Grimvall, A. (2004). Reduced models of the retention of nitrogen in catchments, in: *Proceedings of the International Environmental Modelling and Software Society Conference* (iEMSs), Osnabrück, Germany, 14-17 June, 2004.
- 7) Wahlin, K., Shahsavani, D., Grimvall, A. (2004). Extracting the essence of process-based models of the flow of nitrogen through catchments. *TIES 2004*, Portland, USA.

- 8) Shahsavani, D. (2004). Statistical methods for the reduction of complex process-based models of the flow of nitrogen through catchments, in: *Proceeding of the seventh Iranian statistics conference*, Tehran, Iran, 23 25 Aug, 2004.
- 9) Shahsavani, D. (2002). Random walk and electrical network, in: *Proceeding of the sixth Iranian statistics conference*, Tehran, Iran, 26 28 Aug, 2002.
- 10) Shahsavani, D. (2000). A test of normality based on entropy, in: *Proceeding of the fifth Iranian statistics conference*, Isfahan, Iran, 22 24 Aug, 2000. Ph.D. supervision
- 1) Mirzaee, N. On Fuzzy regression methods, 2020 -present
- 2) Moradi, B. On variable selection methods, 2020- present
- 3) Goudarzi, V. On Robust Regression, 2018- present
- 4) Hosseini, S. E. On small area estimation, 2017- present
- 5) Dehnavi, H. On Functional linear regression, 2017- present
- 6) Lotfi, R. *Imroving Data Classification by Using Shrinkage Estimators*, 2016-present.
- 7) Beglari, M. "The application of new molecular descriptors in the development of QSAR models for some drug like compounds. Shahrood University of Technology, 2016-2020 (co-supervision)
- 8) Kazemi, M. Variable Selection and Structure Identification for Semiparametric Models, Shahrood University of Technology, 2015-2019.

MSc supervision

- 1) Meisami Pour, Shabnam, Survey and evaluation of thermal comfort in office buildings (case study: IT center building at Shahrood University of Technology)", 2018-2019 (advisor).
- 2) Alibeiki, Pedram, Evaluation of Thermal Comfort in Educational buildings (case study: Faculty of Architectural and Urbanism in Shahrood University of Technology), 2018-2019 (advisor).
- 3) <u>Salamati</u>, Elahe., *Application of Chemometircs methods to Predict the Retention index of some organic Compounds*, 2017-2018
- 4) <u>Maleki</u>, Sima, Regression Analysis of Proportion Data Using the Simplex Distribution, 2017-2018

- 5) Alibeygi, Mayam. *Improved random Forests for categorical response* variables, 2017-2018
- 6) Mohebbi, Mahboubeh (2017), Selection of variables in big data by nonlinear modeling, 2016-2017
- 7) Salimi Sani, Zinat, Dimension Reduction in Clustering by Gorup-Lasso Penalty Function, 2016-2017
- 8) Rahimiyan, Elham,. On a robust Fuzzy regression, 2017-2018
- 9) Mohammadi, Saeed. Recognition of effective interactions for high dimensional data, 2015
- 10) Hashemi, Amir. Change Point detection in variance of multivariate processes by using a two stage hybrid scheme, 2015
- 11) Farhadi, Zohreh. Clustering by using the Classification Method of Random Forests, 2014.
- 12) Norrmohammad Zadeh, Fatemeh. Sensitivity analysis of model output by using Bayesian surrogate models,2013.
- 13) Moghaddam, Maryam. Spatial outlier detection, 2013.
- 14) Emadi, Fereshteh. Application of Random Forests for variable selection and modelling of QSRP, 2013.
- 15) Eshaghi, Ehsan. Survival Semi-Parametric Models for Recurrent Event Data by using Kernel Method, 2013.
- 16) Hemmati Rad, O. Kolsom. Change Point Detection in Time Series Data 2011.
- 17) Afshari, Masoud. Application of Machine Learning Method for Extracting Water Qualitative Parameters from Hyperspectral data, 2012.
- 18) Mahdavi, S. Alireza. Churn Management by Using Advanced Statistical and Data Mining Methods, 2011.
- 19) Safari, Faezeh. Comparison Between Machine Learning Method and Traditional Methods for Classification of Satellite Images, 2012.
- 20) Valizadeh, Toktam. Adaptive and non-Adaptive Splines in Semi-Parametric Regression Models, 2012.
- 21) Rezaee, Sajjad. Fraud Detection by Using Data Mining Methods, 2012.
- 22) Janfada, Mohammad. Variance-based Sensitivity Analysis of Deterministic Computer Models, 2011.
- 23) Parsaee Tabar, Zahra. *The Solution of Ordinary Differential Equation by using B-Spline*, 2011.

- 24) <u>Dibaei</u>, A. *Investigation of the posibbility of multiple point geostatistical method application to facies simulation of Oil Reservoir*, 2011. (Advisor)
- 25) Azarbeyk, Samaneh. *Mathematical programming solution by using artificial neural networks*, 2010.