Curriculum Vitae

Contact Information

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Date of the CV November 2021

Education

Sept. 2010 – Jan. 2015 **Ph.D.**, Applied Mathematics (majoring in Numerical Analysis, Numerical Linear Algebra, and Data Mining), Shahid Bahonar University of Kerman, Kerman, Iran

Sept. 2006 – Sept. 2009 **M.Sc.**, Applied Mathematics (majoring in Optimization, and Numerical Linear Algebra), Shahid Bahonar University of Kerman, Kerman, Iran

Sept. 2002 – Sept. 2006 **B.Sc.**, Applied Mathematics, Shahrood University of Technology, Shahrood, Iran

Research Experience

- **Bioinformatics Techniques, Machine Learning Models, and Data Mining:**
  - Application of Machine Learning Methods for Predictive Cancer Diagnoses and COVID-19 Survival Rates
  - Feature Selection Problems, Multi-Label Feature Selection Problems
  - Manifold Learning and Graph Learning
  - Extreme Learning Machine
  - Distance Learning
  - Deep Learning
- **Mathematical Techniques for Reducing System Complexity:**
  - Mathematical Modeling
  - Iterative Methods for Solving Large Sparse Matrix Equations
  - Tensor Calculus and Sylvester Tensor Equations

Teaching Experience

June 2015 – Present: Department of Applied Mathematics, Graduate University of Advanced Technology

- Advanced Numerical Analysis
- Matrix Analysis
- Matrix Methods in Data Mining
- Numerical Methods in Linear Algebra
- Numerical Analysis
- Operation Research
- Topics on Numerical Analysis

Peer-Reviewed Journal Papers

Selected Papers in Machine Learning:

1. A. Mehrpooya, **F. Saberi-Movahed**, N. Azizizadeh, M. Rezaei-Ravari, F. Saberi-Movahed, M. Eftekhari, I. Tavassoly, High dimensionality reduction by matrix factorization for systems pharmacology, Briefings in Bioinformatics, Accepted, 2021.
2. Mahla Mokhtia, Mahdi Eftekhari, **Farid Saberi-Movahed**, Dual-manifold regularized regression models for feature selection based on hesitant fuzzy correlation, Knowledge-Based Systems, Volume 229, 11 October 2021, 107308, https://doi.org/10.1016/j.knosys.2021.107308.
3. M. Rezaei, M. Eftekhari, **F. Saberi-Movahed**, Regularizing extreme learning machine by dual locally linear embedding manifold learning for training multi-label neural network classifiers, Engineering Applications of Artificial Intelligence, Volume 97, January 2021, 104062, https://doi.org/10.1016/j.engappai.2020.104062.
4. M. Rezaei, M. Eftekhari, **F. Saberi-Movahed**, ML-CK-ELM: An efficient Multi-layer Extreme Learning Machine using Combined Kernels for Multi-label classification, Scientia Iranica, 27 (6), 3005–3018, 2020, https://doi.org/10.24200/sci.2020.53490.3263.
5. M. Mokhtia, M. Eftekhari, **F. Saberi-Movahed**, Feature selection based on regularization of sparsity based regression models by hesitant fuzzy correlation, Applied Soft Computing, Volume 91, June 2020, 106255, https://doi.org/10.1016/j.asoc.2020.106255.
6. M. Mokhtia, M. Eftekhari, **F. Saberi-Movahed**, Proposing a method for regression based on feature extraction and hesitant fuzzy sets, Electronic Industries, 10 (4), 87-98, 2020, https://www.magiran.com/paper/2094589/?lang=en.
7. **F. Saberi-Movahed**, M. Najafzadeh, A. Mehrpooya, Receiving more accurate predictions for Longitudinal Dispersion Coefficients in water pipelines: Training Group Method of Data Handling using Extreme Learning Machine conceptions, Water Resources Management, 34, 529-561, 2020, https://doi.org/10.1007/s11269-019-02463-w.

8. **F. Saberi-Movahed**, M. Eftekhari, M. Mohtashami, Supervised feature selection by constituting a basis for the original space of features and matrix factorization, International Journal of Machine Learning and Cybernetics, 11, 1405-1421, 2020, https://doi.org/10.1007/s13042-019-01046-w.
9. M. Dehtaghi Zadeh, **F. Saberi-Movahed**, M. Eftekhari, Feature selection method based on subspace learning and factorization of basis matrix for DNA micro-array datasets, Iranian Journal of Biomedical Engineering, 13 (3), 223-234, 2019, http://www.ijbme.org/article_36697_en.html, https://dx.doi.org/10.22041/ijbme.2019.104143.1454.
10. M. Najafzadeh, **F. Saberi-Movahed**, GMDH-GEP to predict free span expansion rates below pipelines under waves, Marine Georesources & Geotechnology, 37 (3), 375–392, 2019, https://doi.org/10.1080/1064119X.2018.1443355.
11. M. Najafzadeh, **F. Saberi-Movahed**, S. Sarkamaryan, NF-GMDH based self-organized systems to predict bridge pier scour depth under debris flow effects, Marine Georesources & Geotechnology, 36 (5), 589–602, 2018, https://doi.org/10.1080/1064119X.2017.1355944.

Selected Papers in Applied Mathematics:

1. **F. Saberi-Movahed**, A. Tajaddini, M. Heyouni, L. Elbouyahyaoui, Some iterative approaches for Sylvester tensor equations, Part I: A tensor format of truncated Loose Simpler GMRES, Applied Numerical Mathematics, Accepted, 2021.
2. **F. Saberi-Movahed**, A. Tajaddini, M. Heyouni, L. Elbouyahyaoui, Some iterative approaches for Sylvester tensor equations, Part II: A tensor format of Simpler variant of GCRO-based methods, Applied Numerical Mathematics, Accepted, 2021.
3. A. Tajaddini, G. Wu, **F. Saberi-Movahed**, N. Azizi-Zadeh, Two new variants of the simpler block GMRES method with vector deflation and eigenvalue deflation for multiple linear systems, Journal of Scientific Computing, 86 (9), 2021, https://doi.org/10.1007/s10915-020-01376-w.
4. L. Elbouyahyaoui, M. Heyouni, A. Tajaddini, **F. Saberi-Movahed**, On restarted and deflated block FOM and GMRES methods for sequences of shifted linear systems, Numerical Algorithms, 87, 1257–1299, 2021, https://doi.org/10.1007/s11075-020-01007-3.
5. M. Heyouni, **F. Saberi-Movahed**, A. Tajaddini, A tensor format for the generalized Hessenberg method for solving Sylvester tensor equations, Journal of Computational and Applied Mathematics, Volume 377, 15 October 2020, 112878, https://doi.org/10.1016/j.cam.2020.112878.
6. M. Heyouni, **F. Saberi-Movahed**, A. Tajaddini, On global Hessenberg based methods for solving Sylvester matrix equations, Computers & Mathematics with Applications, 77, 77–92, 2019, https://doi.org/10.1016/j.camwa.2018.09.015.
7. F.P.A. Beik, **F. Saberi-Movahed**, S. Ahmadi-Asl, On the Krylov subspace methods based on tensor format for positive definite Sylvester tensor equations, Numerical linear algebra with applications, 23, 444–466, 2016, https://doi.org/10.1002/nla.2033.

8. M. Mohseni Moghadam, A. Rivaz, A. Tajaddini, **F. Saberi-Movahed**, Convergence analysis of the global FOM and GMRES methods for solving matrix equations $AXB = C$ with SPD coefficients, Bulletin of the Iranian Mathematical Society, 41 (4), 981–1001, 2015, http://bims.iranjournals.ir/article_667.html.

Conference Papers

1. M. Eftekhari, **F. Saberi-Movahed**, A. Mehrpooya, Supervised feature selection via information gain, maximum projection and minimum redundancy, in Proceeding of the 10th Seminar on Linear Algebra and its Applications, Shahid Bahonar University of Kerman, Kerman, 2020.
2. B. Ebrahimi, M. Eftekhari, **F. Saberi-Movahed**, Multi-label feature selection via feature correlation, minimum redundancy and sparsity regularization, Bojnourd, Iran, 2019.
3. M. Mohseni Moghadam, A. Rivaz, A. Tajaddini, **F. Saberi-Movahed**, New convergence results for the Conjugate Gradient method, in Proceeding of the 7th Seminar of Numerical analysis and its applications, Kerman, Iran, 2018.
4. F.P.A. Beik, **F. Saberi-Movahed**, FOM-BTF: Full orthogonalization method based on tensor format, in Proceeding of the 5th Seminar of Numerical analysis and its applications, Rafsanjan, Iran, 2014.
5. A. Tajaddini, **F. Saberi-Movahed**, Convergence results for generalized Conjugate Gradient method for the matrix equation $AXB = C$, in Proceeding of the 7th Seminar on Linear Algebra and its Applications, Mashhad, Iran, 2014.
6. A. Rivaz, **F. Saberi-Movahed**, Some applications of T-matrices in symmetric positive definite matrices, 6th Seminar on Linear Algebra and its Applications, Arak, Iran, 2011.
7. **F. Saberi-Movahed**, M. Neyestani, M.A. Yaghoubi, Combining a feasible method with the penalty function in PSO algorithm and its application in constrained optimization problems, 40th Annual Iranian Mathematics conference, Sharif University of technology, Tehran, Iran, 2008.

Ongoing and Under Review Research Works

• Under Review Article

1. F. Saberi-Movahed, M. Mohammadifard, A. Mehrpooya, M. Rezaei-Ravari, K. Berahmand, M. Rostami, S. Karami, M. Najafzadeh, D. Hajinezhad, M. Jamshidi, F. Abedi, M. Mohammadifard, E. Farbod, F. Safavi, M. Dorvash, M. Eftekhari, S. Vahedi, **F. Saberi-Movahed**, I. Tavassoly, Decoding Clinical Biomarker Space of Covid-19: Exploring Matrix Factorization-based Feature Selection Methods, Under Review, https://www.medrxiv.org/content/10.1101/2021.07.07.21259699v1.

Journal Review Activity

Reviewer for: Mathematical Reviews, Briefings in Bioinformatics, IEEE Transactions on Neural Networks and Learning Systems, Computers in Biology and Medicine, Applied Mathematics and Computation, BMC Research Notes, Bulletin of the Iranian Mathematical Society, American Institute of Mathematical Sciences, Iranian Journal of Numerical Analysis and Optimization, and Caspian Journal of Mathematical Sciences.

Honors

2018 Selected paper among 150 papers in the 7th Seminar on Numerical Analysis and its Applications, Shahid Bahonar University of Kerman, Kerman, Iran

2015 First Rank Student at Shahid Bahonar University of Kerman in all Graduate (Ph.D.) Students of Applied Mathematics

2010 First Rank in Ph.D. Entrance Exam of Applied Mathematics, Numerical Analysis, Shahid Bahonar University of Kerman

2009 First Rank Student at Shahid Bahonar University of Kerman in all Graduate (Master) Students of Applied Mathematics

Invited Talks

Jan. 2021 Department of Applied Mathematics, Faculty of Mathematics and Computer, Shahid Bahonar University of Kerman, Kerman, Iran

Talk: *Applied Mathematics and Machine Learning*

Dec. 2020 Institute of Science and High Technology and Environmental Sciences, Graduate University of Advanced Technology, Kerman, Iran

Talk: *The Importance of Dimensionality Reduction Methods in Data Mining*

Professional Services

Jan. 2021 I presented the workshop entitled: The Workshop of Machine Learning, Department of Applied Mathematics, Faculty of Mathematics and Computer, Shahid Bahonar University of Kerman, Kerman, Iran.

Sep. 2019 I presented the workshop entitled: The First Workshop of Applied Mathematics in Machine Learning and Data Mining, Department of Applied Mathematics, Graduate University of Advanced Technology, Kerman, Iran.

June 2015 – Present: I have been presenting the workshop entitled: Workshop of LaTeX and Xepersian, Department of Applied Mathematics, Graduate University of Advanced Technology, Kerman, Iran.

Nov. 2015: I presented the workshop entitled: First Workshop of LaTeX and Xepersian, Department of Applied Mathematics, Shahid Bahonar University of Kerman, Kerman, Iran.

Mentoring and Advising

June 2015 – Present: I am currently serving as advisor to two PhD students, and I have served as supervisor for nine master students.

2020 – **Nadimeh Naseri**, *Title of thesis: Unsupervised feature selection via Self-Representation*.

2019 – **Mahsa Samareh Jahani**, *Title of thesis: Unsupervised feature selection based on using matrix factorization forms*.

2019 – 2021 **Ebrahim Ghajari**, *Title of thesis: Unsupervised feature selection based on using the regularized graph in matrix factorization*.

2019 – 2021 **Atefeh Salari Jaeini**, *Title of thesis: Unsupervised feature selection by matrix factorization and inner product-based regularizer*.

2018 – 2020 **Haniyeh Emad-ol-Eslami**, *Title of thesis: The application of dimensionality reduction methods into the GMDH method for selection of effective input variables*.

2018 – 2020 **Reza Ghaderi**, *Title of thesis: Improvement of filtering partial descriptions in GMDH method and its applications in water engineering*.

2017 – 2018 **Hakimeh Hasaniyeh**, *Title of thesis: Embedded multi-label feature selection method based on manifold learning and sparsity regularization*.

2016 – 2017 **Atena Bagheri**, *Title of thesis: Non-Hermitian iterative methods for solving linear systems*.

2016 – 2017 **Mahla Dehtaghi Zadeh**, *Title of thesis: Proposing an unsupervised feature selection method based on matrix algebra*.

2015 – 2016 **Fatemeh Abdolrezaei**, *Title of thesis: Global Krylov subspace methods for image restoration*.

2014 – 2015 **Azam GolGolzadeh**, *Title of thesis: Deflated and augmented global Krylov subspace methods for matrix equations*.

2019 – 2020 **Mohammad Rezaei**, *Title of thesis: Proposing a multi label learning method using Extreme Learning Machine*.

2019 – 2020 **Mahla Mokhtia**, *Title of thesis: Proposing Hesitant Fuzzy Models for Regression and Classification*.

2018 – 2019 **Behzad Ebrahimi**, *Title of thesis: Multi-label feature selection via minimizing the redundancy, maximum the correlation between the selected features and the labels and sparsity regularization*.

2018 – 2019 **Maryam Gheisari**, *Title of thesis: Joint Feature selection and subspace learning*.

2016 – 2017 **Fatemeh Samadi**, *Title of thesis: A characterization of inner product spaces related to the p-angular distance*.

Memberships

2021 Member of Publication Committee of 52nd Annual Iranian Mathematics Conference, Shahid Bahonar University of Kerman, Kerman, Iran

2020 Member of Publication Committee of 10th Seminar on Linear Algebra and its Applications, Shahid Bahonar University of Kerman, Kerman, Iran

2018 Member of Scientific Committee of 7th Seminar on Numerical Analysis and its Applications, Shahid Bahonar University of Kerman, Kerman, Iran

2018 Member of Publication Committee of 7th Seminar on Numerical Analysis and its Applications, Shahid Bahonar University of Kerman, Kerman, Iran

2017 Member of Publication Committee of 6th Iranian joint congress on Fuzzy and Intelligent Systems, Shahid Bahonar University of Kerman, Kerman, Iran.

Technical Skills

Programming Matlab, Python (Numpy, SciPy, PyTorch, Scikit-learn, and Tensorflow)

Software LaTeX, XePersian

References

1. Prof. Abbas Salemi Parizi, Director, Mahani Mathematical Research Center, Shahid Bahonar University of Kerman, Kerman, Iran
   Email: salemi@uk.ac.ir, asalemip@gmail.com

2. Prof. Mahdi Eftekhari, Department of Computer Engineering, Shahid Bahonar University of Kerman, Kerman, Iran
   Email: m.eftekhari@uk.ac.ir, mahdi.eftekhari591@gmail.com

3. Prof. Mohammed Heyouni, L.M.P.A, Université du Littoral Côte d'Opale, 50 rue F. Buisson BP. 699, F-62228 Calais Cedex, Dunkirk, France
   Email: mohammed.heyouni@univ-littoral.fr, mohammed.heyouni@gmail.com

4. Dr. Iman Tavassoly, Physician-Scientist working on Precision and Quantitative Medicine and Scientific Director of C2i Genomics, Manhattan, New York, United States
   Email: tavassoly@gmail.com

5. Dr. Davood Hajinezhad, Machine Learning and Reinforcement Learning Researcher & Developer at SAS Institute, Durham, North Carolina, United States
   Email: dhajinezhad@yahoo.com