CURRICULUM VITAE

Saman Babaie–Kafaki
(February 2, 2023)

Positions

- Professor of Semnan University from July 2019

- Associate Professor of Semnan University: June 2015–July 2019

- Assistant Professor of Semnan University: September 2010–June 2015

- Non–Resident Researcher of IPM–Institute for Research in Fundamental Sciences: September 2011–September 2015 (for three years)

Research Interests

Numerical Optimization, Matrix Computations, Linear Regression, Signal Processing

Education

- B.Sc.: Applied Mathematics, University of Mazandaran, 1999–2003 (Average: 18.05)

- M.Sc.: Applied Mathematics, Sharif University of Technology, 2003–2005 (Average: 18.88)
  Thesis: A Primal–Dual Interior–Point Algorithm for Semidefinite Programming
  Supervisor: Professor Nezam Mahdavi–Amiri

- Ph.D.: Applied Mathematics, Sharif University of Technology, 2005–2010 (Average: 18.03)
  Thesis: New Conjugate Gradient Methods for Unconstrained Optimization
  Supervisor: Professor Nezam Mahdavi–Amiri

Honors

- The best teacher of the Faculty of Mathematics, Statistics and Computer Science, Semnan University, 2021.

- The best researcher of the Faculty of Mathematics, Statistics and Computer Science, Semnan University in 2012, 2014, 2016, 2018, 2020 and 2022.

- The best researcher in the field of Mathematics in Semnan Province, 2016.

- Scored first rank among the M.Sc. alumni of Faculty of Mathematical Sciences, Sharif University of Technology, 2005.

- Earned second country wide rank in the entrance examination out of more than 5000 applicants seeking admission to graduate studies in Applied Mathematics in Iran, 2003.

- Scored first rank among the B.Sc. alumni of Faculty of Mathematical Sciences, University of Mazandaran, 2003.

Grants

- Memoryless Descent Algorithms for Solving Large–Scale Continuous Optimization Problems, Iranian National Science Foundation (INSF), Grant No. 4005578, 2022.

- Developing Gradient Based Methods for Optimization, Iranian National Science Foundation (INSF), Grant No. 97022259, 2019.

- New Approaches in Adaptive Trust Region Methods for Solving Large–Scale Unconstrained Optimization Problems, Iranian National Science Foundation (INSF), Grant No. 95849086, 2018.

- Hybrid Approaches for Solving Large–Scale Unconstrained Nonlinear Optimization Problems, Iranian National Science Foundation (INSF), Grant No. 2014537332, 2016.

- Modified Nonlinear Three–Term Conjugate Gradient Methods for Unconstrained Optimization, Institute for Research in Fundamental Sciences (IPM), Grant No. 93650051, 2014.

- Adaptive Nonlinear Conjugate Gradient Methods, Institute for Research in Fundamental Sciences (IPM), Grant No. 91900051, 2012.

- Hybrid Conjugate Gradient Methods, Institute for Research in Fundamental Sciences (IPM), Grant No. 90900023, 2011.

- Talented Students Grant, Faculty of Mathematical Science, Sharif University of Technology, 2005.

Lectures

- Modified Conjugate Gradient Methods Based on Singular Value Analysis, International Conference on Computational Science and Numerical Algorithms (CSMA 2021), May 29-31, 2021.

- Some Matrix Aspects of Memoryless Nonlinear Programming Algorithms, Sharif University of Technology, 23 May 2021.

- Modified Optimization Models in Linear Regression, Ferdowsi University of Mashhad, October 2020.

- Recent Approaches in Large–Scale Nonlinear Optimization, Semnan University, April 2015.

- Recent Approaches in Nonlinear Conjugate Gradient Methods, Institute for Research in Fundamental Sciences (IPM), February 2015.

Teaching Experiences

- Graduate: Advanced Operations Research, Nonlinear Programming, Advanced Mathematical Programming, Numerical Methods for Decision Making, Numerical Linear Algebra, Advanced Linear Programming, Quantitative Modeling in Management, Computational Data Mining.

- Under Graduate: Calculus, Differential Equations, Operations Research, Linear Programming and Network Flows, Nonlinear Programming, Numerical Linear Algebra, Scientific Computing, Numerical Analysis, Mathematical Software.

Professional Experiences

- Editor of the Iranian Journal of Numerical Analysis and Optimization from 2023.

- Administrator of the Office of Talented Students in Semnan University, 2015–2021.

- Editor of the International Journal of Nonlinear Analysis and Applications, 2012-2022.

- Reviewer of Mathematical Reviews (MathSciNet), 2014–2022.

Refereeing Activities

▶European Journal of Operational Research ▶Computational Optimization and Applications ▶Optimization Methods & Software ▶4OR–A Quarterly Journal of Operations Research ▶Journal of Computational and Applied Mathematics ▶Optimization ▶Engineering Optimization ▶Numerical Algorithms ▶Pacific Journal of Optimization ▶Journal of Industrial and Management Optimization ▶International Journal of Computer Mathematics ▶Computers and Mathematics with Applications ▶RAIRO–Operations Research ▶Journal of Inequalities and Applications ▶Applied Mathematics–A Journal of Chinese Universities ▶Iranian Journal of Science and Technology–Transactions A: Science ▶Computational and Applied Mathematics ▶Iranian Journal of Numerical Analysis and Optimization ▶Applied Mathematics and Computation ▶Bulletin of the Iranian Mathematical Society ▶Mediterranean Journal of Mathematics ▶Far East Journal of Mathematical Sciences ▶Numerical Functional Analysis and Optimization ▶IEEE Access ▶Applied Soft Computing ▶Calcolo ▶International Journal of Computational Methods ▶PLOS One ▶Operations Research Letters ▶Optimization Letters ▶Journal of Optimization Theory and Applications ▶Numerical Linear Algebra with Applications ▶Mathematical Sciences ▶Applied Numerical Mathematics ▶Journal of Nonlinear Functional Analysis.

Postdoctoral Research Fellows

- Zohre Aminifard: Applying New Optimization Approaches for Solving Compressed Sensing Problem, Iranian National Science Foundation (INSF), Grant No. 99031532, November 2021–November 2022.

- Zohre Aminifard: Developing New Approaches for Solving Sparse Reconstruction Problem, Semnan University, October 2020–September 2021.

Ph.D. Students Supervised

- Nasrin Mirhoseini: Improving the Structure of Polak–Ribière–Polyak Conjugate Gradient Method with Application to Image Restoration, February 2023.

- Zohre Aminifard: Developing Matrix Approaches for Iterative Methods in Unconstrained Optimization, July 2019.

- Nahid Dorostkar Ahmadi: An Optimal Model for Green–Knowledge Based Product Portfolio with Emphasis on Customer and Engineering Transaction (Case study: Behran Oil Company), March 2019. (Joint with Dr. Mohsen Shafie Nikabadi as the first supervisor)

- Ali Sorourkhah: Proposing a Three–Dimensional Robustness Analysis for Using in Strategic Planning–Case Study: Saipa Automotive Research and Innovation Center, October 2017. (Joint with Professor Adel Azar as the second supervisor and Dr. Mohsen Shafie Nikabadi as the advisor)

- Saeed Rezaee: Modified Trust Region Algorithms, October 2017.

- Mohammad Reza Arazm: Using Quasi–Newton Equations in Conjugate Gradient Methods, May 2017. (Joint with Dr. Reza Ghanbari as the advisor)

M.Sc. Students Supervised

1. Fatemeh Zahra Mohseni: On Spectral Properties of the Steepest Descent Methods, September 2021.

2. Saeed Ebrahimi: On a Nonmonotone Trust Region Method for Unconstrained Optimization, January 2019.

3. Jalal Vardan: Studying Global Convergence of the BFGS and PRP Methods under a Modified Wolf Line Search, September 2018.

4. Babak Shojae–Shafie: On Some Nonmonotone Trust Region Methods with Simple Quadratic Models, April 2018.

5. Mohammad Hasan Kazemi: On Some Symmetric Rank–One Updates for the Hessian Approximation, July 2017.

6. Amir Hossein Nafei: On Some Proposed Step Lengths for Improving the Gradient Method, July 2017.

7. Nasrin Mirhosseini: On a Nonlinear Conjugate Gradient Method which is Globally Convergent for Nonconvex Functions, July 2016.

8. Hossein Mehdizadeh: A Class of Descent Nonlinear Three–Term Conjugate Gradient Methods Based on Secant Conditions, June 2016.

9. Shayesteh Moradi: Some Descent Modified Fletcher–Reeves Conjugate Gradient Methods, September 2015.

10. Mazaher Bagheri Sabet Khesmakhi: Some Descent Modified Polak–Ribière–Polyak Conjugate Gradient Methods, September 2015.

11. Kolsoum Hosseinpour Saloukolaie: Multistep Nonlinear Conjugate Gradient Methods for Unconstrained Optimization, March 2015.

12. Parisa Abolghasemi: Scaled Conjugate Gradient Algorithms for Unconstrained Optimization, October 2014.

13. Esmaieel Davoudi Nia: A Modified Quasi–Newton Method for Structured Optimization with Partial Information on the Hessian, October 2014.

Journal Articles

1. Z. Aminifard, S. Babaie–Kafaki and N. Mirhoseini, An accelerated three–term extension of a descent nonlinear conjugate gradient method, **Asia–Pacific Journal of Operational Research**, DOI: 10.1142/S0217595922500476, 2022.

2. Z. Aminifard, S. Babaie–Kafaki and F. Dargahi, Nonmonotone quasi–Newton–based conjugate gradient methods with application to signal processing, **Numerical Algorithms**, DOI: 0.1007/s11075–022–01477–7, 2022.

3. Z. Aminifard and S. Babaie–Kafaki, An approximate Newton–type proximal method using symmetric rank–one updating formula for minimizing the nonsmooth composite functions, **Optimization Methods and Software**, DOI: 10.1080/10556788.2022.2142587.

4. S. Babaie–Kafaki, N. Mirhoseini and Z. Aminifard, A descent extension of a modified Polak–Ribière–Polyak method with application in image restoration problem, **Optimization Letters**, DOI: 10.1007/s11590–022–01878–6.

5. Z. Aminifard and S. Babaie–Kafaki, A restart scheme for the memoryless BFGS method, **Optimization**, DOI: 10.1080/02331934.2022.2051506.

6. M. Roozbeh, S. Babaie–Kafaki and Z. Aminifard, A nonlinear mixed–integer programming approach for variable selection in linear regression model, **Communications in Statistics–Simulation and Computation**, DOI: 10.1080/03610918.2021.1990323.

7. A. Ebrahimnejad, Z. Aminifard and S. Babaie–Kafaki, A scaled descent modification of the Hestense–Stiefel conjugate gradient method with application to compressed sensing (in Persian), **Journal of New Researches in Mathematics**, DOI: 10.30495/jnrm.2022.65570.2211.

8. S. Babaie–Kafaki, A survey on the Dai–Liao family of nonlinear conjugate gradient methods, **RAIRO–Operations Research**, 57(1) (2023) 43–58.

9. Z. Aminifard and S. Babaie–Kafaki, Diagonally scaled memoryless quasi–Newton methods with application to compressed sensing, **Journal of Industrial and Management Optimization**, 19(1) (2023) 437–455.

10. M. Roozbeh, S. Babaie–Kafaki and Z. Aminifard, Improved high–dimensional regression models with matrix approximations applied to the comparative case studies with support vector machines, **Optimization Methods and Software**, 37(5) (2022) 1912–1929.

11. N. Mirhoseini, S. Babaie–Kafaki and Z. Aminifard, A nonmonotone scaled Fletcher–Reeves conjugate gradient method with application in image reconstruction, **Bulletin of the Malaysian Mathematical Sciences Society**, 45 (2022) 2885–2904 .

12. S. Babaie–Kafaki, Z. Aminifard and S. Ghafoori, A hybrid quasi–Newton method with application in sparse recovery, **Computational and Applied Mathematics**, 41 (2022) 249.

13. S. Babaie–Kafaki, Z. Aminifard and S. Ghafoori, Nonmonotone diagonally scaled limited–memory BFGS methods with application to compressive sensing based on a penalty model, **Applied Numerical Mathematics**, 181 (2022) 618–629.

14. H. Aghababayi, M. Shafiei–Nikabadi, S. Babaie–Kafaki and M. Rahmanimanesh, Challenges of using block chain technology in the international markets, **Journal of Information Technology Management**, 14 (2022) 171–191.

15. M. Roozbeh, S. Babaie–Kafaki and M. Maanavi, A heuristic algorithm to combat outliers and multicollinearity in regression model analysis, **Iranian Journal of Numerical Analysis and Optimization**, 12(1) (2022) 173–186.

16. Z. Aminifard and S. Babaie–Kafaki, Improving the Dai–Liao parameter choices using a fixed point equation, **Journal of Mathematical Modeling**, 10(1) (2022) 11–20.

17. Z. Aminifard and S. Babaie–Kafaki, Dai–Liao extensions of a descent hybrid nonlinear conjugate gradient method with application in signal processing, **Numerical Algorithms**, 89 (2022) 1369–1387.

18. N. Dorostkar–Ahmadi, M. Shafiei–Nikabadi and S. Babaie–Kafaki, Optimization of knowledge transferring costs in designing product portfolio: a fuzzy binary linear programming model, **VINE Journal of Information and Knowledge Management Systems**, 52(1) (2022) 18–32.

19. Z. Aminifard, A. Hosseini and S. Babaie–Kafaki, Modified conjugate gradient method for solving sparse recovery problem with nonconvex penalty, **Signal Processing**, 193 (2022) 108424.

20. Z. Aminifard and S. Babaie–Kafaki, Analysis of the maximum magnification by the scaled memoryless DFP updating formula with application to compressive sensing, **Mediterranean Journal of Mathematics**, 18 (2021) 255.

21. M. Roozbeh, S. Babaie–Kafaki and Z. Aminifard, Two penalized mixed–integer nonlinear programming approaches to tackle multicollinearity and outliers effects in linear regression models, **Journal of Industrial and Management Optimization**, 17(6) (2021) 3475–3491.

22. Z. Aminifard and S. Babaie–Kafaki, An adaptive descent extension of the Polak–Ribière–Polyak conjugate gradient method based on the concept of maximum magnification, **Iranian Journal of Numerical Analysis and Optimization**, 11(1) (2021) 211–219.

23. Z. Aminifard, S. Babaie–Kafaki and S. Ghafoori, An augmented memoryless BFGS method based on a modified secant equation with application to compressed sensing, **Applied Numerical Mathematics**, 167 (2021) 187–201.

24. Z. Aminifard and S. Babaie–Kafaki, Modified spectral conjugate gradient methods based on the quasi–Newton aspects, **Pacific Journal of Optimization**, 16(4) (2020) 581–594.

25. S. Babaie–Kafaki, A modified scaled memoryless symmetric rank–one method, **Bollettino dell Unione Matematica Italiana**, 13 (2020) 369–379.

26. S. Babaie–Kafaki and S. Rezaee, A randomized adaptive trust region line search method, **An International Journal of Optimization and Control: Theories & Applications (IJOCTA)**, 10(2) (2020) 259–263.

27. M. Roozbeh, M. Maanavi and S. Babaie–Kafaki, Robust high–dimensional semiparametric regression using optimized differencing method applied to the vitamin B2 production data, **Iranian Journal of Health Sciences**, 8(2) (2020) 9–22.

28. Z. Aminifard and S. Babaie–Kafaki, A restart scheme for the Dai–Liao conjugate gradient method by ignoring a direction of maximum magnification by the search direction matrix, **RAIRO–Operations Research**, 54(4) (2020) 981–991.

29. A. Sorourkhah, S. Babaie–Kafaki, A. Azar and M. Shafiei–Nikabadi, A fuzzy–weighted approach to the problem of selecting the right strategy using the robustness analysis (Case study: Iran Automotive Industry), **Fuzzy Information and Engineering**, 11(1) (2019) 39–53.

30. S. Babaie–Kafaki and Z. Aminifard, Two–parameter scaled memoryless BFGS methods with a nonmonotone choice for the initial step length, **Numerical Algorithms**, 82(3) (2019) 1345–1357.

31. Z. Aminifard and S. Babaie–Kafaki, An optimal parameter choice for the Dai–Liao family of conjugate gradient methods by avoiding a direction of the maximum magnification by the search direction matrix, **4OR–A Quarterly Journal of Operations Research**, 17(3) (2019) 317–330.

32. S. Babaie–Kafaki and S. Rezaee, A randomized nonmonotone adaptive trust region method based on the simulated annealing strategy for unconstrained optimization, **International Journal of Intelligent Computing and Cybernetics**, 12(3) (2019) 389–399.

33. Z. Aminifard and S. Babaie–Kafaki, Matrix analyses on the Dai–Liao conjugate gradient method, **ANZIAM Journal**, 61(2) (2019) 195–203.

34. S. Rezaee and S. Babaie–Kafaki, An adaptive nonmonotone trust region method based on a modified scalar approximation of the Hessian in the successive quadratic subproblems, **RAIRO–Operations Research**, 53 (2019) 829–839.

35. Z. Aminifard and S. Babaie–Kafaki, A modified descent Polak–Ribière–Polyak conjugate gradient method with global convergence property for nonconvex functions, **Calcolo**, 56(2) (2019) 16.

36. S. Babaie–Kafaki, A hybrid scaling parameter for the scaled memoryless BFGS method based on the ℓ_∞ matrix norm, **International Journal of Computer Mathematics**, 96(8) (2019) 1595–1602.

37. S. Rezaee and S. Babaie–Kafaki, An adaptive nonmonotone trust region algorithm, **Optimization Methods and Software**, 34(2) (2019) 264–277.

38. N. Dorostkar–Ahmadi, M. Shafiei–Nikabadi and S. Babaie–Kafaki, Environmental assessment of vehicle lubricants by life cycle assessment approach (in Persian), **Iranian Journal of Health and Environment**, 11(4) (2019) 547–562.

39. S. Babaie–Kafaki and R. Ghanbari, A linear hybridization of the Hestenes–Stiefel method and the memoryless BFGS technique, **Mediterranean Journal of Mathematics**, 15(3) (2018) 86.

40. S. Rezaee and S. Babaie–Kafaki, An adaptive retrospective trust region method based on a hybridization of the monotone and nonmonotone aspects, **Pacific Journal of Optimization**, 14(4) (2018) 621–633.

41. A. Sorourkhah, S. Babaie–Kafaki, A. Azar and M. Shafiei–Nikabadi, Matrix approach to robustness analysis for strategy selection, **International Journal of Industrial Mathematics**, 10(3) (2018) 261–269.

42. S. Babaie–Kafaki and R. Ghanbari, Two adaptive Dai–Liao nonlinear conjugate gradient methods, **Iranian Journal of Science and Technology–Transactions A: Science**, 42(3) (2018) 1505–1509.

43. A. Sorourkhah, A. Azar, S. Babaie–Kafaki and M. Shafiei–Nikabadi, Using weighted–robustness analysis in strategy selection (Case study: Saipa Automotive Research and Innovation Center (in Persian), **Industrial Management Journal**, 9(4) (2018) 665–690.

44. S. Babaie–Kafaki and S. Rezaee, Two accelerated nonmonotone adaptive trust region line search methods, **Numerical Algorithms**, 78(3) (2018) 911–928.

45. S. Rezaee and S. Babaie–Kafaki, A modified nonmonotone trust region line search method, **Journal of Applied Mathematics and Computing**, 57(1) (2018) 421–436.

46. M. Roozbeh, S. Babaie–Kafaki and A. Naeimi Sadigh, A heuristic approach to combat multicollinearity in least trimmed squares regression analysis, **Applied Mathematical Modelling**, 57 (2018) 105–120.

47. S. Babaie–Kafaki and M.R. Arazm, An extension of a three–term conjugate gradient method based on the objective function values with guaranteeing global convergence without convexity assumption (in Persian), **Journal of Operational Research and its Applications**, 15(1) (2018) 19–28.

48. S. Babaie–Kafaki, A monotone preconditioned gradient method based on a banded tridiagonal inverse Hessian approximation, **UPB Scientific Bulletin–Series A: Applied Mathematics and Physics**, 80(1) (2018) 55–62.

49. S. Babaie–Kafaki and R. Ghanbari, Extensions of the Hestenes–Stiefel and Polak–Ribière–Polyak conjugate gradient methods with sufficient descent property, **Bulletin of the Iranian Mathematical Society**, 43(7) (2017) 2437–2448.

50. M.R. Arazm, S. Babaie–Kafaki and R. Ghanbari, An extended Dai–Liao conjugate gradient method with global convergence for nonconvex functions, **Glasnik Matematicki**, 52(72) (2017) 361–375.

51. S. Babaie–Kafaki and R. Ghanbari, An optimal extension of the Polak–Ribière–Polyak conjugate gradient method, **Numerical Functional Analysis and Optimization**, 38(9) (2017) 1115–1124.

52. S. Babaie–Kafaki and M. Roozbeh, A revised Cholesky decomposition to combat multicollinearity in multiple regression models, **Journal of Statistical Computation and Simulation**, 87(12) (2017) 2291–2297.

53. S. Babaie–Kafaki and R. Ghanbari, A class of adaptive Dai–Liao conjugate gradient methods based on the scaled memoryless BFGS update, **4OR–A Quarterly Journal of Operations Research**, 15(1) (2017) 85–92.

54. S. Babaie–Kafaki and R. Ghanbari, A class of descent four–term extension of the Dai–Liao conjugate gradient method based on the scaled memoryless BFGS update, **Journal of Industrial and Management Optimization**, 13(2) (2017) 649–658.

55. S. Babaie–Kafaki and R. Ghanbari, An adaptive Hager–Zhang conjugate gradient method, **FILOMAT**, 30(14) (2016) 3715–3723.

56. M. Roozbeh, S. Babaie–Kafaki and M. Arashi, A class of biased estimators based on QR decomposition, **Linear Algebra and its Applications**, 508(1) (2016) 190–205.

57. S. Babaie–Kafaki, On optimality of two adaptive choices for the parameter of Dai–Liao method, **Optimization Letters**, 10(8) (2016) 1789–1797.

58. X.L. Dong, H.W. Liu, Y.B. He, S. Babaie–Kafaki and R. Ghanbari, A new three–term conjugate gradient method with descent direction for unconstrained optimization, **Mathematical Modelling and Analysis**, 21(3) (2016) 399–411.

59. S. Babaie–Kafaki and R. Ghanbari, A descent hybrid modification of the Polak–Ribière–Polyak conjugate gradient method, **RAIRO–Operations Research**, 50(3) (2016) 567–574.

60. S. Babaie–Kafaki, Computational approaches in large–scale unconstrained optimization, In: **Big Data Optimization: Recent Developments and Challenges**, A. Emrouznejad (Ed.), Vol. 18, Springer, Switzerland, pp. 391–417, 2016.

61. S. Babaie–Kafaki, R. Ghanbari and N. Mahdavi–Amiri, Hybridizations of genetic algorithms and neighborhood search metaheuristics for fuzzy bus terminal location problems, **Applied Soft Computing**, 46(1) (2016) 220–229.

62. S. Babaie–Kafaki, A modified scaling parameter for the memoryless BFGS updating formula, **Numerical Algorithms**, 72(2) (2016) 425–433.

63. M. Fatemi and S. Babaie–Kafaki, Two extensions of the Dai–Liao method with sufficient descent property based on a penalization scheme, **Bulletin of Computational Applied Mathematics**, 4(1) (2016) 7–19.

64. S. Babaie–Kafaki and R. Ghanbari, Descent symmetrization of the Dai–Liao conjugate gradient method, **Asia–Pacific Journal of Operational Research**, 33(1) (2016) 1650008 (10 pages).

65. M. Roozbeh and S. Babaie–Kafaki, Extended least trimmed squares estimator in semiparametric regression models with correlated errors, **Journal of Statistical Computation and Simulation**, 86(2) (2016) 357–372.

66. S. Babaie–Kafaki and R. Ghanbari, Two optimal Dai–Liao conjugate gradient methods, **Optimization**, 64(11) (2015) 2277–2287.

67. S. Babaie–Kafaki, On optimality of the parameters of self–scaling memoryless quasi–Newton updating formulae, **Journal of Optimization Theory and Applications**, 167(1) (2015) 91–101.

68. S. Babaie–Kafaki and R. Ghanbari, A hybridization of the Polak–Ribière–Polyak and Fletcher–Reeves conjugate gradient methods, **Numerical Algorithms**, 68(3) (2015) 481–495.

69. S. Babaie–Kafaki, A modified three–term conjugate gradient method with sufficient descent property, **Applied Mathematics–A Journal of Chinese Universities**, 30(3) (2015) 263–272.

70. S. Babaie–Kafaki and R. Ghanbari, An extended three–term conjugate gradient method with sufficient descent property, **Miskolc Mathematical Notes**, 16(1) (2015) 45–55.

71. S. Babaie–Kafaki and R. Ghanbari, A hybridization of the Hestenes–Stiefel and Dai–Yuan conjugate gradient methods based on a least–squares approach, **Optimization Methods and Software**, 30(4) (2015) 673–681.

72. S. Babaie–Kafaki and R. Ghanbari, A descent extension of the Polak–Ribière–Polyak conjugate gradient method, **Computers and Mathematics with Applications**, 68(12) (2014) 2005–2011.

73. S. Babaie–Kafaki and R. Ghanbari, Two modified three–term conjugate gradient methods with sufficient descent property, **Optimization Letters**, 8(8) (2014) 2285–2297.

74. S. Babaie–Kafaki, An adaptive conjugacy condition and related nonlinear conjugate gradient methods, **International Journal of Computational Methods**, 11(4) (2014) 1350092 (18 pages).

75. S. Babaie–Kafaki, On the sufficient descent condition of the Hager–Zhang conjugate gradient methods, **4OR–A Quarterly Journal of Operations Research**, 12(3) (2014) 285–292.

76. S. Babaie–Kafaki and R. Ghanbari, A modified scaled conjugate gradient method with global convergence for nonconvex functions, **Bulletin of the Belgian Mathematical Society–Simon Stevin**, 21(3) (2014) 465–477.

77. S. Babaie–Kafaki and R. Ghanbari, Two hybrid nonlinear conjugate gradient methods based on a modified secant equation, **Optimization**, 63(7) (2014) 1027–1042.

78. S. Babaie–Kafaki, An eigenvalue study on the sufficient descent property of a modified Polak–Ribière–Polyak conjugate gradient method, **Bulletin of the Iranian Mathematical Society**, 40(1) (2014) 235–242.

79. S. Babaie–Kafaki and R. Ghanbari, The Dai–Liao nonlinear conjugate gradient method with optimal parameter choices, **European Journal of Operational Research**, 234(3) (2014) 625–630.

80. S. Babaie–Kafaki and R. Ghanbari, A descent family of Dai–Liao conjugate gradient methods, **Optimization Methods and Software**, 29(3) (2014) 583–591.

81. S. Babaie–Kafaki, Two modified scaled nonlinear conjugate gradient methods, **Journal of Computational and Applied Mathematics**, 261(1) (2014) 172–182.

82. S. Babaie–Kafaki, A modified scaled memoryless BFGS preconditioned conjugate gradient method for unconstrained optimization, **4OR–A Quarterly Journal of Operations Research**, 11(4) (2013) 361–374.

83. S. Babaie–Kafaki and M. Fatemi, A modified two–point stepsize gradient algorithm for unconstrained minimization, **Optimization Methods and Software**, 28(5) (2013) 1040–1050.

84. S. Babaie–Kafaki, A hybrid conjugate gradient method based on a quadratic relaxation of Dai–Yuan hybrid conjugate gradient parameter, **Optimization**, 62(7) (2013) 929–941.

85. S. Babaie–Kafaki, On the sufficient descent property of the Shanno's conjugate gradient method, **Optimization Letters**, 7(4) (2013) 831–837.

86. S. Babaie–Kafaki, A new proof for the sufficient descent condition of Andrei's scaled conjugate gradient algorithms, **Pacific Journal of Optimization**, 9(1) (2013) 23–28.

87. S. Babaie–Kafaki and N. Mahdavi–Amiri, Two modified hybrid conjugate gradient methods based on a hybrid secant equation, **Mathematical Modelling and Analysis**, 18(1) (2013) 32–52.

88. S. Babaie–Kafaki, A quadratic hybridization of Polak–Ribière–Polyak and Fletcher–Reeves conjugate gradient methods, **Journal of Optimization Theory and Applications**, 154(3) (2012) 916–932.

89. S. Babaie–Kafaki, A note on the global convergence theorem of the scaled conjugate gradient algorithms proposed by Andrei, **Computational Optimization and Applications**, 52(2) (2012) 409–414.

90. S. Babaie–Kafaki, R. Ghanbari and N. Mahdavi–Amiri, An efficient and practically robust hybrid metaheuristic algorithm for solving fuzzy bus terminal location problems, **Asia–Pacific Journal of Operational Research**, 29(2) (2012) 1–25.

91. S. Babaie–Kafaki, M. Fatemi and N. Mahdavi–Amiri, Two effective hybrid conjugate gradient algorithms based on modified BFGS updates, **Numerical Algorithms**, 58(3) (2011) 315–331.

92. S. Babaie–Kafaki, R. Ghanbari and N. Mahdavi–Amiri, Two effective hybrid metaheuristic algorithms for minimization of multimodal functions, **International Journal of Computer Mathematics**, 88(11) (2011) 2415–2428.

93. S. Babaie–Kafaki, A modified BFGS algorithm based on a hybrid secant equation, **Science China Mathematics**, 54(9) (2011) 2019–2036.

94. S. Babaie–Kafaki, R. Ghanbari and N. Mahdavi–Amiri, Two new conjugate gradient methods based on modified secant equations, **Journal of Computational and Applied Mathematics**, 234(5) (2010) 1347–1386.

Conference Papers

1. Z. Aminifard and S. Babaie–Kafaki, An adaptive descent extension of the Polak–Ribière–Polyak conjugate gradient method based on the concept of maximum magnification, Proceedings of the 13th International Conference of Iranian Operations Research Society, pages 25–29, Shahrood University of Technology, Shahrood, Iran, September 6–9, 2020.

2. M. Roozbeh, S. Babaie–Kafaki and M. Manavi, A heuristic nonlinear penalty model for linear regression, Proceedings of the 13th International Conference of Iranian Operations Research Society, pages 41–46, Shahrood University of Technology, Shahrood, Iran, September 6–9, 2020.

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