CURRICULUM VITAE
Morteza Kimiaei

Personal Information

Research Office:	Faculty of Mathematics, University of Vienna, Oskar-Morgenstern-Platz 1, 1090, Vienna, Austria
Birth:	December 25, 1983, Tehran, Iran
Cell:	+43 681 8149 3786
Email:	morteza.kimiaei@gmail.com, kimiaeim83@univie.ac.at
Homepage	`https://www.mat.univie.ac.at/~kimiaei`
ORCID:	`https://orcid.org/0000-0002-7973-3770`
Github page:	`https://github.com/GS1400`

Positions

2021–2024	**Postdoc in Computational Optimization**
	University of Vienna
Project title	Derivative-Free Optimization
	(Austrian Science Foundation, Project No. P 34317)
2017–2021	**PhD Student in Computational Optimization**
	Vienna Graduate School on Computational Optimization (VGSCO)
	`https://vgsco.univie.ac.at/`
PhD thesis	Unconstrained & bound-constrained optimization in high dimensions
	(Austrian Science Foundation, Project No. W1260-N35)
Date of defense	15.06.2021

Education

2006–2008 **Master of Science in Applied Mathematics (Optimization)**

Department of Mathematics, Razi University, Kermanshah, Iran

MSc thesis Active set trust region method for bound-constrained optimization

2002–2006 **Bachelor of Science in pure Mathematics**

Department of Mathematics, Bu-Ali Sina University, Hamedan, Iran

1998–2001 **Diploma in Mathematics and Physics**

Engelab High School, Asadabad, Iran

Teaching

2009–2016 Azad Islamic University, Asadabad, Mathematics Teacher

Operation Research, Calculus and Analytic Geometry, Differential Equation

2009–2016 Payame Noor University, Asadabad, Mathematics Teacher

Operation Research, Calculus and Analytic Geometry, Differential Equation

2012–2016 Seyyed Jamaleddin Asadabadi University, Mathematics Teacher

Operation Research, Calculus and Analytic Geometry, Differential Equation

Scientific talks

1. M. Kimiaei, A. Neumaier. Effective matrix adaptation strategy for noisy derivative-free optimization, 19th Workshop on Advances in Continuous Optimization (EUROPT 2022), Caparica, Portugal.

2. M. Kimiaei. VSBBON – Line search in noisy black box optimization, INFORMS 2021 Annual Meeting, Oct. 24-27, at the Anaheim Convention Center & Anaheim Marriott, USA.

3. M. Kimiaei. Efficient noisy unconstrained black box optimization, the Sixth International Conference on Continuous Optimization, ICCOPT 2019, Berlin, Germany.

4. M. Kimiaei, A. Neumaier. Efficient black box optimization with complexity guarantees, the Sixth International Conference on Continuous Optimization, ICCOPT 2019, Berlin, Germany.

5. M. Kimiaei, A. Neumaier. Competitive derivative-free optimization with optimal complexity, ISMP, Bordeaux, French, July 1-6, (2018).

6. M. Kimiaei, A. Neumaier. Comparing solvers for unconstrained and box constrained optimization, 18th FGI Conference on Optimization, Paderborn, Germany, September, (2017).

Software

Morteza Kimiaei is the main developer of the following software packages:

1. `MATRS`: A noisy derivative-free bound constrained mixed-integer optimization (Matlab): available at `https://github.com/GS1400/MATRS`

2. `IMATRS`: A noisy derivative-free bound constrained integer optimization (Matlab): available at `https://github.com/GS1400/IMATRS`

3. `MADFO`: A matrix adaptation strategy for noisy unconstrained DFO problems (Matlab): available at `https://github.com/GS1400/MADFO`

4. `SSDFO`: A subspace technique for unconstrained DFO problems (Matlab): available at `https://github.com/GS1400/SSDFO`

5. `LMLS`: A limited memory method for derivative-free least squares problems (Matlab): available at `https://github.com/GS1400/LMLS`

6. `VRDFON`: A randomized algorithm for unconstrained noisy DFO problems (Matlab): available at `https://github.com/GS1400/VRDFON`

7. `VRBBO`: A randomized algorithm for unconstrained BBO problems (Matlab): available at `https://github.com/GS1400/VRBBO`

8. `LMBOPT`: A limited memory for bound constrained optimization (Matlab): available at `https://github.com/GS1400/LMBOPT`

9. `GSCG`: A generalized shrinkage conjugate gradient method for sparse recovery (Matlab): available at `https://github.com/GS1400/GSCG`

Computer Skills

Programming Language	**C++, Python**
Mathematical Software	**Matlab**
Operating System	**Linux, Windows**
Applied Software	**Latex, Office**

Language Skills

Persian	**Native Language**
English	**Advanced Knowledge**
Deutsch	**Basic Knowledge**

Research interest

1. Nonlinear Optimization

2. Derivative-Free Optimization

3. Mixed-Integer Optimization

4. Least-Squares Optimization

5. Non-smooth Optimization

6. Heuristic Optimization

7. Monotone Equations

8. Machine Learning

9. Compressed Sensing

List of publications

Published

1. A. Brilli, **M. Kimiaei**, G. Liuzzi, S. Lucidi.
   Worst case complexity bounds for linesearch-type derivative-free algorithms.
   Accepted for publication in *Journal of Optimization Theory and Applications* (2024).

2. **M. Kimiaei**, A. Neumaier.
   Effective matrix adaptation strategy for noisy derivative-free optimization.
   Mathematical Programming Computation 16 (2024), 459–501.
   https://doi.org/10.1007/s12532-024-00261-z

3. A. Neumaier, **M. Kimiaei**.
   An improvement of the Goldstein line search.
   accepted for *Optimization Letters*, 18 (2024), 1313–1333.

4. A. Neumaier, **M. Kimiaei**, B. Azmi.
   Globally linearly convergent nonlinear conjugate
   gradients without Wolfe line search.
   Numerical Algorithms, (2024).
   https://doi.org/10.1007/s11075-024-01764-5.

5. A. Neumaier, B. Azmi, **M. Kimiaei**.
   An active set method for bound-constrained optimization.
   Accepted for *Optimization Methods and Software*, (2024).
   https://doi.org/10.1007/s11590-024-02110-3

6. **M. Kimiaei**, A. Neumaier, P. Faramarzi.
   A new subspace technique for unconstrained black box optimization.
   ACM Transactions on Mathematical Software 49(4) (2023), 1–25.

7. A. Hassan Ibrahim, **M. Kimiaei** and P. Kumam.
A new black box method for monotone nonlinear equations.
Optimization, 72(5) (2023), 1119–1137.

8. **M. Kimiaei**, A. Hassan Ibrahim, S. Ghaderi.
A subspace inertial method for derivative free
nonlinear monotone equations.
Optimization (2023).
`https://doi.org/10.1080/02331934.2023.2252849`

9. **M. Kimiaei**, A. Neumaier.
Efficient unconstrained black box optimization.
Mathematical Programming Computation 14 (2022), 365–414.

10. **M. Kimiaei**, A. Neumaier, B. Azmi.
LMBOPT: a limited memory method for bound-constrained optimization.
Mathematical Programming Computation 14 (2022), 271–318.

11. **M. Kimiaei**, A. Neumaier.
A new limited memory method for unconstrained nonlinear least squares.
Soft Computing 26 (2022), 465–490.

12. **M. Kimiaei**.
An active set trust-region method for bound-constrained optimization.
Bull. Iran. Math. Soc. 48 (2022), 1721–1745.

13. **M. Kimiaei**, H. Esmaeili, F. Rahpeymaii.
A trust-region method using extended nonmonotone
technique for unconstrained optimization.
Iranian Journal of Mathematical Sciences and Informatics
16(1) (2021), 15–33.

14. K. Amini, **M. Kimiaei**, H. Khotanlou.
A nonmonotone pattern search approach for systems of nonlinear equations.
International Journal of Computer Mathematics, 96(1) (2019), 33–50.

15. **M. Kimiaei**, F. Rahpeymaii.
A new nonmonotone line search adaptive trust region for nonlinear systems.
TOP, 27(2) (2019), 192–232.

16. **M. Kimiaei**, F. Rahpeymaii.
Impulse noise removal by an adaptive trust-region method.
Soft Computing, 23 (2019), 11901–11923.

17. H. Esmaeili, S. Shaebani, **M. Kimiaei**.
A new conjugate gradient methods for compressive sensing problems.
Calcolo, 56 (1) (2019).

18. **M. Kimiaei**.
Nonmonotone self-adaptive Levenberg-Marquardt approach
for solving systems of nonlinear equations.
Numerical Functional Analysis and Optimization, 39(1) (2018), 47–66.

19. H. Esmaeili, M. Rostami, **M. Kimiaei**.
    Combining line search and trust-region methods for ℓ_1-minimization.
    International Journal of Computer Mathematics, 95(10) (2018), 1950–1972.

20. H. Esmaeili, M. Rostami, **M. Kimiaei**.
    Extended Dai-Yuan conjugate gradient strategy for large-scale unconstrained
    optimization with applications to compressive sensing.
    FILOMAT , 32(6) (2018), 2173–2191.

21. **M. Kimiaei**, S. Ghaderi.
    A new restarting adaptive trust-region
    method for unconstrained optimization.
    Journal of the Operations Research Society of China,
    5(4) (2017), 487–507.

22. **M. Kimiaei**.
    A new class of nonmonotone adaptive trust-region
    method for nonlinear equations with box constrained.
    Calcolo, 54(3) (2017), 769–812.

23. F. Rahpeymaii, **M. Kimiaei**.
    A Barzilai Borwein adaptive trust-region method
    for solving systems of nonlinear equation.
    International Journal of Research in Industrial Engineering,
    6(4) (2017), 339–349.

24. F. Rahpeymaii, **M. Kimiaei**, A. Bagheri.
    A limited memory quasi-Newton trust-region
    method for box constrained optimization.
    Computational and Applied Mathematics,
    303 (2016), 105–118.

25. K. Amini, **M. Kimiaei**, M.A.K. Shiker.
    A line search trust-region algorithm with nonmonotone
    adaptive radius for solving systems of nonlinear equations.
    4OR, 14(2) (2016), 133–152.

26. K. Amini, H. Esmaeili, **M. Kimiaei**.
    A nonmonotone trust-region-approach with
    nonmonotone adaptive radius for nonlinear systems.
    Iranian Journal of Numerical Analysis and Optimization,
    6(1) (2016), 101–121.

27. H. Esmaeili, **M. Kimiaei**.
    A trust-region method with improved adaptive
    radius for systems of nonlinear equations.
    Mathematical Methods of Operations Research,
    83 (2016), 109–105.

28. **M. Kimiaei**, H. Esmaeili.
    A trust-region approach with novel filter adaptive
    radius for systems of nonlinear equations.
    Numerical Algorithms, 73(4) (2016), 999–1016.

29. **M. Kimiaei**, M. Rostami.
    Impulse noise removal based on new hybrid
    spectral conjugate gradient approach.
    KYBERNETIKA, 52(5) (2016), 791–823.

30. H. Esmaeili, **M. Kimiaei**.
    An efficient adaptive trust-region method
    for systems of nonlinear equations.
    International Journal of Computer Mathematics,
    92(1) (2015), 151–166.

31. M. Ahookhosh, K. Amini, **M. Kimiaei**, M.R. Peyghami.
    A limited memory trust-region method with adaptive
    radius for large-scale unconstrained optimization.
    Bulletin of the Iranian Mathematical Society,
    42(4) (2015), 819–837.

32. H. Esmaeili, **M. Kimiaei**.
    An efficient implementation of a trust region
    method for box constrained optimization.
    Journal of Applied Mathematics and Computing,
    48 (2015), 495–517.

33. M. Ahookhosh, K. Amini, **M. Kimiaei**.
    A globally convergent trust-region method
    for large-scale symmetric nonlinear systems.
    Numerical Functional Analysis and Optimization,
    36 (2015), 830–855.

34. H. Esmaeili, **M. Kimiaei**.
    An improved adaptive trust-region method for unconstrained optimization.
    Mathematical Modelling and Analysis, 19(4) (2014), 469–490.

35. H. Esmaeili, **M. Kimiaei**.
    A new adaptive trust-region method for systems of nonlinear equations.
    Applied Mathematical Modelling, 38(11–12) (2014), 3003–3015.

36. M. Ahookhosh, H. Esmaeili, **M. Kimiaei**.
    An effective trust-region-based approach for symmetric nonlinear systems.
    International Journal of Computer Mathematics, 90 (3) (2013), 671–690.

37. **M. Kimiaei**, F. Rahpaymaii.
    A fixed point method for convex systems.
    Applied Mathematics, 3 (2012), 1327-1333.

Under review

1. **M. Kimiaei**.
   A developed randomized algorithm with noise level tuning
   for large-scale noisy unconstrained DFO problems.
   Revised in *Numerical Algorithms* (2024).
   `https://optimization-online.org/?p=16687`

2. **M. Kimiaei**, A. Neumaier.
   Heuristic methods for noisy derivative-free
   bound constrained mixed-integer optimization.
   Revised in *Mathematical Programming Computation* (2024).
   `https://optimization-online.org/?p=22724`

Work in progress

1. **M. Kimiaei**, A. Neumaier.
   A feasible point method for linearly constrained black box optimization.
   Manuscript (2024).

Unpublished

1. **M. Kimiaei**, A. Neumaier.
   Efficient composite heuristics for integer bound constrained noisy optimization.
   Unpublished manuscript (2022).
   `https://optimization-online.org/?p=19118`