

CURRICULUM VITAE

Dr. Maziar Salahi

Associate Professor

November 2, 2014

- **Personal Data**

- **Date of birth:** August 24, 1976.
- **Marital Status:** Married, one son and one daughter.
- **Nationality:** Iranian.
- **Contact Information:** Department of Applied Mathematics, Faculty of Mathematical Sciences, University of Guilan, Rasht, Iran, salahim@guilan.ac.ir, salahi.maziar@gmail.com.

- **Affiliations:**

- Assistant Prof., Department of Applied Mathematics, University of Guilan, Jan 2007- Feb 2011.
- Associate Prof., Department of Applied Mathematics, University of Guilan, Feb 2011- Now.

- **Education**

- **Post Doctoral Fellow** at School of Computational Engineering and Science, McMaster University. April first 2006 till June 30, 2006
Sponsor: Prof. Tamás Terlaky.

- **Ph.D.** in Applied Mathematics, McMaster University, March 2006,
Thesis: New Adaptive Interior Point Algorithms for Linear Optimization,
Advisor: Professor Tamás Terlaky (Canada Research Chair in Optimization).
- Visiting Scholar at the Department of Computing and software, October 2002
till September 2003,
Advisor: Professor Tamás Terlaky (Canada Research chair in Optimization).
- **M.S:** Applied Mathematics, Sharif University of Technology, Tehran, Iran,
1998-2000.
Thesis: Quasi Newton ABS Method for Solving Nonlinear Algebraic Equations.
Advisor: Professor Nezam Mahdavi-Amiri.
- **B.S:** Applied Mathematics, Department of Mathematics, University of Guilan,
Rasht, Iran, 1994-1998.

- **Honors**

- Ranked number one among all graduating students, Department of Mathematics, University of Guilan, 1998.
- Ranked Number six in the entrance examination among more than 10000 applicants seeking admission to graduate studies in applied Mathematics in Iran, 1998.
- Winner of the **best student paper prize of MITACS** (Mathematics of information technology and complex systems, www.mitacs.ca), 2005. The prize was a certificate with 1000 dollars. The paper is published in a leading journal of optimization, **Computational Optimization and Application**.
Title of paper: The Complexity of self-regular proximity based infeasible interior point methods for Linear Optimization. Joint work with T. Terlaky and G. Zhang. **Computational Optimization and Applications (ISI)**, 33, pp. 157–185, 2006.

- Winner of **Prof. Riazi Kermani Award** which is awarded to the best paper submitted to the annual Iranian math conference, 2009. The prize was a certificate with three gold coins.

- **Published and Accepted Papers**

1. Optimization algorithm using the ABS class of methods (in persian), Sharif University of Technology Research Reports (Mathematical Sciences Volume). Joint work with Nezam Mahadvi-Amiri. 55-63, 2000-2001.
2. Karmarkar's interior point algorithm and the ABS-type algorithm for solving linear programming problems (in Persian), Sharif University of Technology Research Reports (Mathematical Sciences Volume). Joint work with Nezam Mahadvi-Amiri. 12 pages, 2001-2002.
3. M. Salahi, T. Terlaky and G. Zhang, The Complexity of self-regular proximity based infeasible interior point methods for Linear Optimization, **Computational Optimization and Applications (ISI)**, 33, pp. 157-185, 2006. (This paper won the best student paper prize of MITACS in Canada, 2005).
4. M. Salahi, T. Terlaky, An adaptive self-regular proximity based large-update IPM for linear optimization, **Optimization Methods and Software (ISI)**, 20(1), pp. 163-179, 2005.
5. M. Salahi, R. Sotirov, T. Terlaky, On self-regular interior point methods, Invited article to: **TOP (Spanish Journal of operations research (ISI))**, 12(2), pp. 209-300, 2004.
6. M. Salahi, T. Terlaky, Adaptive large neighborhood self-regular predictor-corrector IPMs for LO, **Journal of Optimization theory and Applications (ISI)**, 2007.
7. M. Salahi, T. Terlaky, Postponing the choice of the barrier parameter in Mehrotra-type algorithms, **European Journal of Operational Research (ISI)**, 182, pp. 502-513, 2007.

8. M. Salahi, N. Mahdavi-Amiri, Polynomial time second order Mehrotra-type predictor-corrector algorithms, **Applied Mathematics and Computation (ISI)**, 183, pp. 646-658, 2006.
9. M. Salahi, R. Peyghami and T. Terlaky, New complexity analysis of infeasible IPMs for linear optimization, **European Journal of Operational Research (ISI)**, 186, pp. 466-485, 2008.
10. M. Salahi, A finite termination Mehrotra-type predictor-corrector algorithm. **Applied Mathematics and Computation (ISI)**, 190, pp. 1740-1746, 2007.
11. M. Salahi, J. Peng, T. Terlaky, On Mehrotra-type predictor-corrector algorithms, **SIAM Journal on Optimization (ISI)**, 18(4), pp. 1377-1397, 2007.
12. M. Salahi, T. Terlaky, Mehrotra-type Predictor-Corrector Algorithm Revisited. **Optimization Methods and Software (ISI)**, 23(2), 2008.
13. M. Salahi, A Hybrid Adaptive Algorithm for Linear Optimization. **Asia Pacific Journal of Operational Research (ISI)**, 26(2), pp. 235-256, 2009.
14. M. Salahi, S. Ketabchi, Correcting an inconsistent set of linear inequalities by generalized Newton method, **Optimization Methods and Software (ISI)**, 25(3), 2010.
15. M. Salahi, On ill-conditioned linear systems and regularized gmres method. **Applied Mathematics and Information Sciences (ISI)**, 3(1), pp. 4551, 2009.
16. M. Salahi, Introduction to second order conic optimization (in Farsi). **Farhang va Andisheh Riazi**, 2009.
17. M. Salahi, Nonnegative Ill-Conditioned Linear Systems and GMRES Method, **Journal of Applied Mathematics and Computing**, Springer, 31(1-2), pp. 507-515, 2009.
18. H. Ghazvini, M. Salahi, A new HPM for integral equations, **Applications and Applied Mathematics**, 4(1), pp. 122-133, 2009.

19. M. Salahi, A Short Note on $\min_{x \in R^n} \frac{\|Ax-b\|^2}{1+\|x\|^2}$, **Applied Mathematics and Computation (ISI)**, 212(1), pp. 270-272, 2009.
20. M. Salahi, H. Zareamoghaddam, Computational experiments on the Tikhonov regularization of the total least squares problem, **Computer Science Journal of Moldova**, 17(1), pp. 12-25, 2009.
21. M. Salahi, Inconsistent Linear Inequalities, Generalized Newton Method and Conic Optimization, **Journal of Applied Mathematics, Statistics and Informatics**, 5(1), 2009.
22. H. Aminikhah, M. Salahi, A new HPM for system of integro-differential equations, **International Journal of Computer Mathematics (ISI)**, 87(5), pp. 1186-1194, 2010.
23. M. Salahi, New Barrier Parameter Updating Technique in Mehrotra-Type Algorithm, **Bulletin of the Iranian Math. Society (ISI)**, 36(2), pp. 99-108 2010.
24. M. Salahi, Robust least squares solution of linear inequalities, **Applied Mathematics Letter (ISI)**, 23, pp. 605–608, 2010.
25. M. Salahi, A Self-Regular Newton Based Algorithm for Linear Optimization, **ANZIAM (ISI)** 51, pp. 286-301, 2009.
26. M. Salahi, An Adaptive Long Step Interior Point Algorithm for Linear Optimization, **Kybernetika(ISI)**46(4), pp. 722-729, 2010.
27. M. Salahi, M. Ganji, A generalized Newton-penalty algorithm for large scale ill-conditioned quadratic problems, **Applications and Applied Mathematics**,4(2), 2009.
28. M. Salahi, Convex Optimization Approach to a Single Quadratically Constrained Quadratic Minimization Problem, **Central European Journal of OR (ISI)**, 18(2), pp. 181-187, 2010.
29. M. Salahi, Correcting Inconsistency in Linear Inequalities by Minimal Change in the Right Hand Side Vector. **Computer Science Journal of Moldova**,

- 17(2), pp. 179-192, 2009.
30. M. Salahi, Quadratically Constrained Quadratic Problem with an Additional Linear Constraint, **Iranian Journal of Operations Research (ISC)**, vol. 2, no. 2, 2011.
 31. J. Peng, M. Salahi, Interior Point Methods for Nonlinear Programs, Wiley Handbook, to appear, 2011.
 32. M. Salahi, T. Terlaky, Self-regular interior-point methods for cone linear optimization, SDP handbook by Springer, Chapter 15, 2012.
 33. M. Salahi, Regularization Tools and Robust Optimization for Ill-conditioned Least Squares Problem: A Computational Comparison, **Applied Mathematics and computations (ISI)**, 217(20), 7985-7990, 2011.
 34. M. Salahi, Optimal Correction of Infeasible Systems in the Second Order Conic Linear Setting, **Computer Science Journal of Moldova**, vol.19, no.1(55), 2011.
 35. M. Salahi, Robust L_1 and L_∞ solutions of Linear Inequalities, **Applications and Applied Mathematics**, 6(2), 522-528, 2011.
 36. M. Salahi, Some Results on the Optimal Correction of Infeasible Second Order Conic Linear Inequalities, **International Journal of Nonlinear Science**, 2011.
 37. A. Taati, M. Salahi, Strictly convex quadratic underestimator using Halton sequence and rand function, **J. of Adva. Res. Sci. Comput.**, 2012, vol 4(1), 24-35.
 38. M. Pirouz, M. Salahi, Operational risk evaluating and modeling for e-banking, **International Journal of advanced Research in Computer Science**, vol 3, no. 3, 136-139, 2012.
 39. M. Salahi, H. Ramzaninejad, Image deblurring using SVD and optimization algorithms (in Farsi), **Farhang va Andisheh Riazi**, no 50, Fall 2012.

40. M. Salahi, S. Fallahi, Linear Fractional Program Under Interval and Ellipsoidal Uncertainty, **Kybernetika (ISI)**, 49(1), 181-187, 2013.
41. H. Aliabadi, M. Salahi, Robust Geometric Programming Approach to Profit Maximization with Interval Uncertainty, **Computer Science Journal of Moldova**, 21(1), 86-96, 2013.
42. F. Kalantary, H. MolaAbasi, M. Salahi, M. Veiskarami, Prediction of liquefaction induced lateral displacements using robust optimization model, **Scientia Iranica (ISI)**, 20(2), 242-250,2013.
43. M. Salahi, A. Taati, A. Jamalian, Global minimization of multi-funnel functions using Particle Swarm Optimization, **Neural Computing and Applications (ISI)**, 23, pp. 2101-2106, 2013.
44. M. Salahi and S. Fallahi, A Semidefinite Optimization Approach to Quadratic Fractional Optimization with a Strictly Convex Quadratic Constraint, to appear in **Iranian Journal of Mathematical Sciences and Informatics (ISC, Scopus)**, 2014.
45. M. Pirouz, M. Salahi, Modeling Truncated Loss Data of Operational Risk in E-Banking, **I.J. Information Technology and Computer Science**, 5(12), PP. 64-69, 2013.
46. M. Salahi, F. Mehrdoust, F. Piri, CVaR Robust Mean-CVaR Portfolio Optimization, **ISRN Applied Mathematics**, 2013.
47. S. Fallahi, M. Salahi, On the indefinite quadratic fractional optimization with two quadratic constraints, **Journal of Optimization Theory and Applications**, 162(1), pp. 249256, 2014.
48. I. Shooshpasha1, H. Mola-Abasi, A. Jamalian, . Dikmen, M. Salahi, Validation and Application of Empirical Shear Wave Velocity Models based on Standard Penetration Test,**Computational Methods in Civil Engineering**, 4(1), pp. 25-41, 2013.
49. M. Salahi and A. Taati, Interior Point Gradient Algorithm for Totally Non-

- negative Least Squares Problems in Inequality Sense, **International Journal of Computer Mathematics (ISI)**, 91(7), pp. 1593-1600, 2014.
50. P. Sagheb Haghghi, M. Moradi, M. Salahi, Categorizing Suppliers Risk Performance Using Fuzzy LinPreRa based AHP and Fuzzy C-Means, **International Journal of Intelligent Systems and Applications**, 6(5), pp. 76-82, 2014.
 51. F. Piri, M. Salahi, F. Mehrdoust, Robust Mean-Conditional Value at Risk Portfolio Optimization, **International Journal of Economic Sciences**, 3(1), pp. 2-11, 2014.
 52. A. Jamalian, M. Salahi, Robust solutions to multi-facility weber location problem under interval and ellipsoidal uncertainty, **Applied Mathematics and Computation (ISI)**, 242, pp. 179-186, 2014.
 53. M. Salahi and A. Taati, Nonnegative least squares solution in inequality sense via LCP reformulation, **Advanced Modeling and Optimization**, 16(2), pp. 285-294, 2014.
 54. P. Sagheb Haghghi, M. Moradi, M. Salahi,, A method toward monitoring supplier risks using fuzzy linguistic preference relations based AHP and fuzzy C-Means, **International Journal of Operations Research**, 11(3), 69-81, 2014.
 55. M. Salahi and S. Fallahi, Parametric approach for solving quadratic fractional optimization with a linear and a quadratic constraint, accepted in **Computational and Applied Mathematics (ISI)**, 2014.
 56. M. Salahi, A. Jamalian, Multiple Capacitated Plant Location Problem with Customer and Supplier Matching, accepted in **Computational Mathematics and Modeling (Scopus)**, 2014.

- **Conference and Workshop Presentations**

1. The complexity of self-regular proximity based infeasible IPMs. Presented at SONAD, May 2003, McMaster university.

2. An adaptive self-regular proximity based large-update IPM for LO. Presented at the MITACS Annual Conference, poster presentation, May 2003, Ottawa.
3. An adaptive self-regular proximity based large-update IPM for LO. Presented at the MOPTA 03 conference, July 2003, McMaster university.
4. An adaptive self-regular proximity based large-update IPM for LO. Presented at the CORS/INFORMS Conference, banff, May 16-19, 2004.
5. Adaptive large neighborhood self-regular predictor-corrector IPM for LO. Presented at the MOPTA 04 conference, 2004, McMaster university.
6. An Adaptive Self-Regular predictor-corrector algorithm. SWORD, University of Windsor, 2004.
7. On Mehrotra-type predictor-corrector algorithms, MOPTA05, University of Windsor, July 25-27, 2005.
8. On Mehrotra-type predictor-corrector algorithms, Optimization Days, University of Montreal, May 9-11, 2005.
item Franco-Canadian Workshop on Combinatorial Algorithms, August 18-20, 2005, McMaster university.
9. On Mehrotra-type predictor-corrector algorithms (acted as the session chair), Informs annual meeting, November 13-16, San Francisco, USA, 2005.
10. Postponing the choice of barrier parameter in Mehrotra-type predictor-corrector algorithms, CORS annual meeting joint with Optimization Days, University of Montreal, May 8-10, 2006.
11. Postponing the choice of barrier parameter in Mehrotra-type predictor-corrector algorithms, MITACS Annual Meeting, York University, June 16-19, 2006, **invited talk**.
12. On Mehrotra-type Predictor-Corrector Algorithms, Algorithm Group Seminar, Delft University of Technology, Holland, June 26, **invited talk**, sponsor: Prof. Kees Roos.

13. Postponing the Choice of Barrier Parameter in Mehrotra-type Algorithms, CORE Mathematical Programming Seminar, CORE, University of Luvian, Belgium, June 28, **invited talk**, Sponsor: Prof. F. Gleniur.
14. On Mehrotra-type Predictor-Corrector Algorithms. Annual Iranian Mathematics Conference, Sep. 2-5, 2006, Tabriz, Iran.
15. Introduction to conic optimization, University of Guilan Conference, October 3-5, 2007.
16. On single quadratically constrained quadratic minimization problem, Annual Iranian Math conference, 3-6 Shahrivar, Kerman, Iran, 1387.
17. On regularization of ill-conditioned linear systems, Lahijan University Conference, 16 Esfand, 1386.
18. Introduction on MATLAB, University of Guilan, April 28, 2008.
19. Introduction on Latex, University of Guilan, December 5, 2008.
20. An interior point algorithm with adaptive choice of barrier parameter for LO, University of Guilan, Feb. 2009.
21. On the least squares solution of linear inequalities, Annual Iranian OR conference, Mazandaran University, May 20-22, 2009.
22. The Optimal Correction of Infeasible Second Order Conic Linear Systems, 40th annual Iranian Math conference, Sharif University of Technology, 19 August 2009.
23. Semidefinite Relaxations of Some Nonconvex Quadratic Problems, ICMS 10, American University of Sharjah, March 2010, Sharjah.
24. On the Optimal Correction of Infeasible Second Order Conic Linear Inequalities, International Conference of Operations Research and Optimization, IPM, Tehran, Iran, Jan. 2011.
25. Robust short run profit maximization with geometric program, Annual Iranian Math Conference, Sep. 2011, Rafsanjan, Iran.

26. Conic and Robust Optimization: Some Applications, **Invited Talk**, Annual Iranian Math Conference, Sep. 2011, Rafsanjan, Iran.
27. On fractional linear and quadratic optimization, 4th Workshop on optimization, May 15, KTH University, Tehran, Iran (**invited talk**).
28. On the Quadratic Fractional Optimization with a Strictly Convex Quadratic Constraint, Second International Conference on Operations Research and Optimization, Jan. 19, 2013, University of Tehran, Iran.
29. Robust Mean-Conditional Value at Risk Portfolio Optimization, 3rd Conference on Financial Mathematics Applications, 30,31 January 2013, Semnan University, Semnan.
30. Robust Mean-Value at Risk: A Numerical Approach, 7th Iranian Operations Research Conference, Semnan, Iran, May 2014.
31. Robust Mean-Value at Risk Model: Solution and Structure Robustness, 45th Iranian annual Math conference, August 2014, Semnan, Iran.

- **Research Interests**

- Linear and Nonlinear Programming.
- Conic Optimization.
- Interior Point Methods for Linear, Nonlinear and Conic Programming.
- Global Optimization.
- Integer Programming.
- Application of Optimization in Engineering.
- Financial Optimization
- Location Theory
- Numerical Linear Algebra.
- Scientific Computing.

- **Teaching Experience**

- Interior point algorithms (Msc course), Operations Research I, II (undergraduate course), Spring 2014.
- Special topics (PhD course), Interior point algorithms (Msc course), Operations Research II (undergraduate course), Spring 2013.
- Conic Optimization (PhD course), Integer Program (Msc course), Operations Research I (undergraduate course), Fall 2012.
- Special topics (PhD course), Interior point algorithms (Msc course), Operations Research II (undergraduate course), Spring 2012.
- Conic Optimization (PhD course), Integer Program (Msc course), Operations Research I (undergraduate course), Fall 2011.
- Numerical Linear Algebra (graduate course), Calculus II, Operations Research II, Spring 2010.
- Data Structure, Scientific Computation, Interior Point Methods (graduate course) Winter 2009.
- Numerical Linear Algebra, Optimization over Cones, Introduction on Matlab, Spring 2009.
- Integer programming, Introduction on MATLAB, Numerical Analysis , Calculus I, fall 2008, University of Guilan.
- Numerical linear algebra, graduate course, spring 2008, University of Guilan.
- Introduction on MATLAB, Operations Research II, Scientific Computing, undergraduate courses, spring 2008, University of Guilan.
- Integer Programming and Network Flows, University of Guilan, fall 2007.
- Calculus I, II, University of Guilan, fall 2006.
- Numerical Analysis, University of Guilan, fall 2006.
- Advanced Operations Research for Management Science, University of Guilan, fall 2006.
- Scientific Computation, University of Guilan, fall 2006.

- Operations Research I(Spring 2001, Sharif University of Technology).
- Numerical analysis I(Fall 2001, Sharif University of Technology).
- Calculus I and II(TA, Spring 1999, Sharif University of Technology).
- Numerical analysis I (Lab TA , McMaster University, Winter 2004).
- Lab TA for ‘Numerical solutions for ODE and PDE,’ spring 2006, McMaster University.

Referee for the following Journals:

- SIAM Journal On Optimization
- Optimization Methods and Software
- Journal of Optimization Theory and Applications
- Algorithmic Operations Research
- European Journal of Operations Research
- Journal of Computational and Applied Mathematics
- Journal of Applied Mathematics and Computing
- Computational Optimization and Applications
- Journal of Industrial and Management Optimization
- Mathematics of Operations Research
- Many others

• Graduate students supervised:

- PhD
 - * Saeed Fallahi, started Sep 2011, he is working on fractional optimization.
 - * Ali Jamlian, started Sep 2011, he is working on location problems.
 - * Somayeh Lotfi, started Sep 2012, she is working on financial optimization.
 - * Akram Taati, started Sep 2012, she is working on quadratic optimization.

- * Moslem Ganji, started Sep. 2007, graduated Jan 2010. He worked on 'Ill-condition quadratic programs'.
- * Akram Taati, graduated on Dec. 2010. Her thesis was about 'Convex approximation.'
- * Fatemeh Yeganeh, graduated on Dec. 2010. Her thesis was about 'Quadratically constrained quadratic optimization.'
- * Yaser Shiri, graduated on Sep. 2010. His thesis was about 'Financial optimization.'
- * Eslam Hoseini, graduated on Sep. 2010. His thesis was about 'L1 solution of linear inequalities.'
- * Hossein Aliabadi, graduated on Sep. 2011. His thesis was about 'geometric programming with some applications.'
- * Kaveh Mehdi, graduated on Sep. 2011. His thesis was about 'Robust optimization approach to location problem'
- * Marieh Promohammadi, graduated on Dec 2011. Her thesis was about 'Interior point algorithm for large scale ill-conditioned systems.'
- * Zahra Deravi, graduated on Dec 2011. Her thesis was about 'total variation image deblurring.'
- * Mir-Eissa Sanaei, graduated on July 2012. His thesis was about 'nonlinear least squares problems.'
- * Farzaneh Piri, graduated on Sep 2012. Her thesis was about 'portfolio optimization using var and cvar.'
- * Mojtaba Golestanipour, graduated on Sep 2012. His thesis was about 'sparse solution of underdetermined linear systems.'
- * Kobra Pakmanesh, graduated on Sep 2013. Her thesis was about 'polynomial optimization.'
- * Pegah Sagheb Haighighi, graduated on Oct 2013. Her thesis was about

'Proposing a model for monitoring risk in a supply chain.'

- * Sepideh Farrokhirad, graduated on March 2014. Her thesis was about 'gradient algorithms for totally Nonnegative linear systems.'
- * Milad Daemi, graduated on Jul 2014. His thesis was about 'cardinality constrained portfolio optimization.'
- * Narges Torabi, graduated on Sep 2014. Her thesis was about 'Robust DEA.'
- * Arezo Zare, graduated on Sep 2014. Her thesis was about 'Efficient algorithms for fractional quadratic optimization.'

● **Activities involved:**

- Director of University of Guilan Press office from Dec. 2008 to Oct. 2014.
- Research representative of Mathematics Department from March 2007 to March 2011.
- Iranian Operations Research Society's representative at the University of Guilan.
- Scientific committee member of 2nd and 3th annual Iranian OR conference.
- Chair of the scientific committee member of 4th annual Iranian OR conference 2011.
- Scientific committee member of 42nd annual Iranian Math conference 2011.
- Scientific committee member of 45th annual Iranian Math conference 2014.

● **Societies Membership**

- Mathematical Optimization Society
- Iranian Operations Research Society
- Iranian Mathematical Society