

Europass Curriculum Vitae



Personal information

Surname(s) / First name(s)

Email(s)

Nationality(-ies)

Date of birth

Ghaffari-Hadigheh, Alireza

hadigheha@azaruniv.edu, hadigheha@gmail.com, hadigheha@yahoo.com

Iranian

30 march, 1961

Professional experience

2017 (Dec.- ...)	Professor, Azarbaijan Shahid Madani University, Tabriz, Islamic Republic of Iran
2019 (Jan.)-2019(July)	Part-time lecturer, Tilburg University, Dept. of Econometrics and Operations Research
2018 (Dec.)-2019(July)	Sabbatical in Tilburg University, Dept. of Econometrics and Operations Research
2018 (June)-2018(July)	Visiting researcher in Uncertainty Laboratory, Tsinghua University, Beijing, China
2015 (Aug.)	Visiting researcher in Uncertainty Laboratory, Tsinghua University, Beijing, China
2014 - ...	Managing Editor and editorial board member of <i>Communications in Combinatorics and Optimization</i>
2009 (Nov.)- 2017 (Dec.)	Associate professor, Azarbaijan Shahid Madani University, Tabriz, Islamic Republic of Iran
2009- 2013	Adjunct Lecturer of postgraduate department (MBA Program), University College of Nabi Akram, Tabriz, Iran
2004- ...	Adjunct Lecturer of postgraduate department, Payam-e-Noor University, Tabriz, Iran
2007 (Aug.)	Visiting researcher in Department of Computing and Software, McMaster University, Hamilton, Canada.
2006 (Jul.)	Visiting researcher in Department of Computing and Software, McMaster University, Hamilton, Canada.
2006 (Mar.)-2009 (Nov.)	Assistant professor of Mathematic Department, Azarbaijan University of Tarbiat Moallem (former name for Azarbaijan Shahid Madani University), Tabriz, Iran.
2004-2006	Assistant Professor, Department of Basic Science and Statistics, Imam Hossain University, Tehran, Iran.
2004 (Aug.-Sep.)	Visiting researcher in Department of Computing and Software, McMaster University, Hamilton, Canada.
2003 (Mar.- Dec.)	Visiting Ph.D. student in Department of Computing and Software, McMaster University, Hamilton.
1995-1999	Lecturer, Department of Basic Science and Statistics, Imam Hossain University, Tehran, Iran.
1993-1995	Visiting lecturer in Department of Mathematics, Sahand University of Technology , Tabriz, Iran.
1992-1993	Lecturer, Department of Basic Science and Statistics, Imam Hossain University, Tehran, Iran.

Administrative experience

2012- 2014(June)
2010 (May)- 2013(May)
2008(Dec.)- 2011(May)
2007(Dec.)- 2008(Dec.)
2006(Feb.)- 2007(Dec.)

Head of Department of Applied Mathematics.
Member of Steering Committee, Iranian Operations Research Society
Head of University Budget Office.
Head of Department of Mathematics.
Vice President of University in Students Affair.

Reviewer for (selection)

- Annals of Operations Research
- Advanced Modeling and Optimization
- Optimization Methods and Software
- Optimization and Engineering
- European Journal of Operational Research
- Journal of Industrial and Management Optimization
- Neural Computing and Applications

Education and training

1999-2004
1989-1991
1980-1986

Ph.D. Student in department of Mathematic, Tabriz University, Tabriz, Iran. Ph.D. Thesis title: *Sensitivity Analysis in linear and convex quadratic optimization.*
Master Student in department of Mathematic, Tabriz University, Tabriz, Iran. M.S. Thesis title: On the existence of Hadamard Tournaments.
B.S. student, Mathematics, University of Tabriz, Tabriz, Iran.

Personal skills and competences

Mother tongue(s)
Other language(s)

Self-assessment
European level

English
Farsi

Computer skills and competencies

Azeri

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
Good	Good	Good	Good	Good
Native	Native	Native	Native	Native

MatLab, CPLEX

Research Projects

2003
2004
2005

Parametric Programming and Its Applications to Portfolio Models, (joint work with O. Romanko), supervised by T. Terlaky.
Sensitivity analysis in linear and convex quadratic optimization: Invariant active constraint set and invariant set intervals (Joint work with T. Terlaky and K. Mirnia) Supported by Research Institute for Fundamental Sciences.
Support set expansion sensitivity analysis in convex quadratic optimization (joint work with K. Mirnia), supported by the research department of Tabriz University.

Publication

Book

- 2019 Persian translation of Uncertainty Theory, Ed. 5, Joint work with Prof. B. Fathi Vajargah
- 2011 Discrete Mathematics and Application [Second edition of the Introduction to Discrete Mathematics] (In Persian) - Tehran, Iran, Imam Hossain University Publishing.
- 2001 Introduction to Discrete Mathematics (In Persian) - Tehran, Iran, Imam Hossain University Publishing.
- 2000 Introduction to Cryptography (In Persian), Tehran, Iran, Imam Hossain University Publishing.

Book Chapter Contribution

- 2012 Romanko, O., Ghaffari-Hadigheh, A., and Terlaky, T. Multiobjective Optimization via Parametric Optimization: Models, Algorithms and Applications. Chapter 5 in Springer Proceedings in Mathematics and Statistics, Volume 21, pp. 77-119.

Published Papers

- 2020 Advances in induced optimal partition invariancy analysis in uni-parametric linear optimization (joint work with N. Mehanfar), To be published in Journal of Mathematical Modeling
- 2020 Network Data Envelopment Analysis in Uncertain Environment (joint work with W. Lio), To be published in Computers & Industrial Engineering, <https://doi.org/10.1016/j.cie.2020.106657>.
- Optimal Pricing Strategy in Uncertain Dual Distribution Channel with Retail Services (joint work with Saied Farham-Nia), Journal of modelling in management, accepted
- Identification of Minimum Set of Master Regulatory Genes in Gene Regulatory Networks, (joint work with S. Bakhteh and N. Chaparzadeh) in IEEE/ACM Transactions on Computational Biology and Bioinformatics, vol. 17, no. 3, pp. 999-1009, 1 May-June 2020, doi: 10.1109/TCBB.2018.2875692.
- Roman domination problem with uncertain positioning and deployment costs, Soft Computing, Vol. 24, No. 4, pp. 2637-2645, DOI:10.1007/s00500-019-03811-z, 2020
- 2019 Application of Dempster-Shafer theory in combining the experts' opinions in DEA, Journal of the Operational Research Society, Vol. 70 (6) . pp. 915-925, 2019
- 2018 One-Stage Uncertain Linear optimization (joint work with Zeinab Zarea), Journal of Hyperstructures, Vol. 7, pp 36-49, 2018
- Uncertain network interdiction problem (joint work with M. Soleimani-Alyar), Journal of Uncertain Systems, 12 (2), pp. 141-150, 2018
- A novel DEA model based on Uncertainty Theory (joint work with Zahra Mohammad-Nejad), Ann Oper Res Vol. 264, pp. 367-389, 2018
- Determining Optimum premiums for homogenous risk groups, A case study (joint work with Mahnaz Manteqipour and Amir Safari), (In Persian), Journal of operations research in its Application, Volume 15, Issue 1 (4-2018)
- Dynamic network interdiction problem with uncertain data (joint work with M. Soleimani-Alyar), Int. J. of Uncertainty, Fuzziness & Knowledge-Based Systems (IJUFKS), 2018, Vol. 26. No. 2, pp. 327-342

- Uncertain Weighted Dominating Set: A prototype Application on Natural Disaster Relief Management (joint work with Mehdi Djahangiri), *Soft computing, Soft Computing* 22 (3), pp. 1003-1012, 2018
- Grouping objects in homogeneous classes satisfying requisite mass (joint work with Mahnaz Mantqipour, MahmoodVand and Safari), *Journal of AI and Data Mining*, Vol 6, No 1, 2018, 163-175.
- 2017 Solving multi-period interdiction via generalized Bender's decomposition (Joint work with M. Soleimani), *Acta Mathematicae Applicatae Sinica*, 2017, Volume 33, Issue 3, pp 633–644.
- 2016 Linear Programming in Uncertain Environment (In Persian), *Journal of operations research in its Application*, 50:3, 27-50 (2016).
- A Novel Metaheuristics for Optimization Inspired by Mother-Infant Communication in Animal Colonies, *Journal of Hyperstructures*, 5 (2), 169-181, (2016).
- Two Linear Programming Models in Uncertain Environment (In Persian), *Journal of Operational Research in Its Applications* 50 (3), pp. 27–51, (2016).
- Short-Term Scheduling of Multiple Source Pipelines with Simultaneous Injections and Deliveries (Joint work with H. Mostafaei, P. M. Castro), *Computers & Operations Research*, Volume 73, September 2016, Pages 27–42.
- Controlling floods by optimization methods (Joint work with M. Soleimani and F.Sadeghi), *Water Resources Management*. September 2016, Volume 30, Issue 12, pp 4053–4062.
- 2015 Semidefinite relaxation for dominating set (Joint work with M. Djahangiri), *Iranian Journal of Operations Research*. Vol 6. No.1, 2015, Published: 2017/03/27.
- A Novel Monolithic MILP Framework for Lot-Sizing and Scheduling of Multiproduct Tree-like Pipeline Networks (Joint work with H. Mostafaei and P. M. Castro), *Industrial & Engineering Chemistry Research*. 2015, 54 (37), pp 9202–9221
- Matrix Perturbation and Optimal Partition Invariancy in Linear Optimization (Joint work with N. Mehanfar), *Asia Pac. J. Oper. Res*, Volume 32, Issue 03, June 2015
- On the scheduling of real world multiproduct pipelines with simultaneous delivery (Joint work with H. Mostafaei), *Optimization and Engineering*, September 2015, Volume 16, Issue 3, pp 571-604
- 2014 A General Modeling Framework for the Long-Term Scheduling of Multiproduct Pipelines with Delivery Constraints (Joint work with H. Mostafaei), *Industrial & Engineering Chemistry Research*, 2014, 53 (17), pp 7029–7042.
- Interpretation of Different Approaches to Sensitivity Analysis in Cash Flow Problem, *MATEMATIKA* 29 (1b), 1-9. 2013
- 2010 Bi-parametric convex quadratic optimization (Joint work with O. Romanko and T. Terlaky), *Optimization Methods & Software*, 25 (2), 229-245.
- 2008 Bi-Parametric Optimal Partition Invariancy Sensitivity Analysis in Linear Optimization, (Joint Work with H. Ghaffari-Hadigheh and T. Terlaky), *Central European Journal of Operations Research* (2008) 16:215-238.
- 2007 Sensitivity analysis in convex quadratic optimization: Simultaneous perturbation of the objective and right-hand-side vectors, (Joint work with O. Romanko and T. Terlaky), *Algorithmic Operations Research*, Vol.2 (2007), pages 1000-1017.
- Support set invariancy sensitivity analysis in bi-parametric linear optimization, (Joint work with M. Dehghan and K. Mirnia), *Advanced Modeling and Optimization, An Electronic International Journal*, Volume 9, No. 1, 2007, Pages 81-89.

Support set expansion sensitivity analysis in convex quadratic optimization, (Joint work with K. Mirnia) Optimization Methods and Software , Volume 22 Issue 4 2007, pages 601-616.

Active Constraint Set Invariancy Sensitivity Analysis in Linear Optimization. (Joint work with K. Mirnia and T. Terlaky), Journal of Optimization Theory and Application (JOTA), Volume 133, Number 3, June, 2007, pages 303-315.

2006 Generalized support set invariancy sensitivity analysis in linear optimization, (Joint work with T. Terlaky), Journal of Industrial and Management Optimization (JIMO), Volume: 2, No. 1, February 2006.

Sensitivity analysis in linear and convex quadratic optimization: Invariant active constraint set and invariant set intervals. Information Systems and Operations Research (INFOR). (Joint work with K. Mirnia and T. Terlaky), Volume 44, No. 2, May 2006, Pages 129-155.

Sensitivity Analysis in Linear Optimization: Invariant Support Set Intervals. (Joint work with T. Terlaky) European Journal of Operations Research. Volume 169, Issue 3, 16. March 2006, Pages 1158-1175.

2005 Sensitivity analysis in convex quadratic optimization: invariant support set intervals. (Joint work with T. Terlaky), Optimization, Vol.ume 54, No. 1. February 2005 , Pages 59-79.

2000 Homographic Interpolation (In Persian)- Farhang va Andishe-ye Riazi (An Expository Journal of Iranian Mathematical Society), Volume 19 (2), Fall 2000, Pages 11-22.

Submitted Manuscripts

2020 Approximation of the Uncertain Renewal Reward process with Application in the Belief of Ruin in Life Insurance (joint work with W. Vakili)

2020 Induced optimal partition invariancy in linear optimization: constraints perturbation (joint work with N. Mehanfar)

2020 A novel method for identification of chief master regulatory genes in weighted gene regulatory networks (joint work with S. Bakhteh, N. Chaparzadeh)

Published Reports

Sensitivity analysis in linear and convex quadratic optimization: Invariant active constraint set and invariant set intervals, (Joint work with K. Mirnia and T. Terlaky) AdvOL-Report No. 2004/12, 2004.

Sensitivity Analysis in Convex Quadratic Optimization: Invariant Support Set Intervals, (Joint work with T. Terlaky) AdvOL-Report No. 2003/7, 2003.

Simultaneous Perturbation Parametric Analysis in Convex Quadratic Optimization, (Joint work with O. Romanko and T. Terlaky) AdvOL-Report No. 2003/6.2003.

Sensitivity Analysis in Linear Optimization: Invariant Support Set Intervals (Joint work with T. Terlaky)AdvOL-Report No. 2003/5. 2003.

Talks at Universities and Conferences

Relation Between the Optimal Partition Invariance Interval in Linear Parametric Optimization and the Confidence Level in an Uncertain Linear Optimization, The Fourteenth International Conference on Information and Management Sciences, August 4-10, 2015, Guiyang, China.

Supply chain coordination with buyback contract in uncertain environment, 8th International Conference of the Iranian Society of Operations Research, Ferdowsi University of Mashhad, May 21-22, 2015.

Interpretation Of Different Approaches To Sensitivity Analysis In Cash Flow Problem, 1st ISM International Statistical Conference (ISM-1 2012)

Further developments in semidefinite relaxation for domination number of graphs, Mini EURO Conference EUROPT 2010, Izmir, Turkey, 2010.

NETWORK INTERDICTION, 2th workshop on Optimization and its Applications K.N. Toosi University of Technology, Tehran, Iran, May 4, 2010.

Semidefinite optimization approach towards domination number in graphs, 23rd European Conference on Operational Research Bonn, July 5 - 8, 2009.

Linear Optimization Relaxation for Dynamic Domination Number The 2nd International Conference of Iranian Operations Research Society May 20-22, 2009 Babolsar, Iran.

Subdivision number and Optimization, Veszprem Optimization Conference: Advanced Algorithms, Veszprem Hungary, 2008.

New Paradigms in Sensitivity analysis of Linear optimization, 38 th Iranian International Conferences on Mathematics, Zanjan, Iran, 2007.

Matrix perturbation and support set invariancy in linear optimization, ICCOPT-MOPTA2007, McMaster University, Ontario, Canada, August 13-16, 2007.

Bi-Parametric Optimal Partition Invariancy Sensitivity Analysis in Linear Optimization, MOPTA 06, University of Waterloo, Ontario, Canada, July 24-27, 2006.

Support Set Sensitivity Analysis in Bi-parametric Linear Optimization, International Symposium on Mathematical Programming (ISMP), Rio de Janeiro, Brazil, 2006.

Duality theory in linear optimization and its relation to minimum wage and interest rate (In Persian). 37th Iranian International Conferences on Mathematics, Tabriz, Iran, 2006.

Generalized support set invariancy sensitivity analysis in linear optimization, 8th Conference of SIAM on Optimization, Stockholm, Sweden, 2005.

Sensitivity analysis in convex quadratic sensitivity analysis, 35th Iranian International Conferences on Mathematics, Ahwaz, Iran, 2004.

Sensitivity Analysis in Linear Optimization: What managers want to know? Second International Conference on Management , Tehran, Iran, 2004.

Sensitivity Analysis in Linear Optimization: Invariant Active Constraint Set and Invariant Partition Intervals, WindSOR/SWORD, Windsor, Ontario, Canada, August 2004.

Sensitivity Analysis In Linear Optimization: Invariant Active Constraint Set and Invariant Partition Intervals, MOPTA 04, Hamilton, Ontario Canada, 2004.

Sensitivity Analysis in Linear and Convex Quadratic Optimization Problems, Invariancy Intervals, MOPTA 03, Hamilton, Ontario Canada, 2003. (15) The Simplex Method and QR Decomposition, International Workshop on Numerical Linear Algebra, Numerical Methods for PDE, Optimization, Curitiba, Brazil, 2001.

Modified Gaussian Integration, Third Seminar on Numerical Analysis and its Application, Zahedan, Iran, 2000.

New Orthogonal Polynomials, International Conference of Applied Mathematics - Tehran - Iran - 2000.

Rational Semi-Quadratic Spline interpolation to functions of Class c_1 , International Conference on Computer and Imaging (CGIM2000), Las Vegas, USA- 2000.

Rational Spline Interpolation, 30th Iranian International Conferences on Mathematics, Ardebil, Iran, 1999.

An Extension of PLAYFAIR Cryptography Method, 29th Iranian International Conferences on Mathematics, Tehran, Iran, 1998.

Graduated Master Students:

As Adviser

2018: Zeinab Zarea, Roghayeh Shakouri

2016: Nasim Mongeri, Fatemeh Safvati, Firozeh Mardi, Zahra Abdeli, Fakhfri-Sadat MirShafiee

2015: Saleh Sajadmanesh

2014: Reza madadi, Mirabdollahi

2013: Sahar Kavian, Samaneh Rouhani, Moloud Ranjnar, Zakieh Nikofar

2012: Solmaz Ahmadi, Zahra Firouzi, Worya Vakili

2011: Atefeh Ranjbaran, Arefeh Bayaz, Samaneh Mohajeri

2010: Raana Ahmadi, Mina Ahmadi

2009: Mehdi Dghangiri, Leila Jalalzadeh, Mina Ahmadi

2008: Fatemeh FaridKhah, Behzad Ashayeri, Tahereh Boodaghi

Tabriz University: Dehghan(2006), Faghan(2008)

Payame-Nour University: Sarieh Hoseinpour(2012), JalilZadeh(2009), Tajbakhsh (2008), Jahangiri(2008), Mehanfar(2008), Ghobadi(2007), Dadashi (2007), Barati (2006), Tajedini (2006), Nikbakht (2005), Farid(2004)0

As Co-Adviser

2012: Zahra Ashrafi

2009: Momivand, MohammadNejad, Razavi.

2008: NaghshBandi, Haghi, Chameh, Mahaki, AghajanZadeh (Electric Engineering Dept.)

2007: Rahmani

2006:HasanZadeh, Aram

Graduated PhD Students:

2018: Zahra MohammadNejad, Omid Yaghobi-Aghre, Somayyeh Bakhteh

2017: Mahnaz Manteqipour

2016: Mehdi Djahangiri, Mariam Solymani Alyar, Hossein Mostafaiee

2010: Hakimeh Mohammadi

**Current Master
Students:**

2016: Afsaneh Namdar

Current Ph.D. Students:

2018: Worya Vakili, Nasim Mongeri

2014: Nayyer Mahanfar

Potential Ph.D. Students:

2017: Parastoo Ram, Majid Ahmadi