

Curriculum Vitae

PERSONAL INFORMATION

Name: **Behnaz Omoomi**

Date of Birth: August 1972

Current Position: Professor

Address: P.O. Box 84156-83111
Department of Mathematical Sciences,
Isfahan University of Technology
Isfahan, IRAN

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RESEARCH INTEREST

Graph Theory and Combinatorics.

ACADEMIC BACKGROUND

Ph.D. University Putra Malaysia
Doctor of Philosophy in Mathematics, 2001.
Title of Thesis: Chromatic equivalence classes and chromatic
defining numbers of certain graphs

M.Sc. Isfahan University of Technology (IUT), Iran
Master of Science in Pure Mathematics, 1997.

B.Sc. Isfahan University of Technology (IUT), Iran
Bachelor of Science in Mathematics, 1994.

HONOUR AND AWARD

- Distinguished Instructor, Isfahan University of Technology, 2018
- Distinguished Instructor, Isfahan University of Technology, 2008
- Silver Medal, Invention and Research Exhibition, UPM, 2002
- Graduated First in the Department, Convocation IUT, 1997
- Graduated First in the Department, Convocation IUT, 1994

ACADEMIC ACTIVITY

- American Mathematical Society Member, 2010- Present.
- Mathematical Reviewer (AMS), 2008-present.
- Journal Referee, Journal of Graph Theory, Discrete Math., Discrete Appl. Math. Discrete Math. and Theoretical Computer Sciences. Bull. of Iranian Math. Society.
- IT Committee Coordinator, Department of Mathematical Sciences, IUT, 2002-2009.
- Students Mathematical Competitions Team Leader, Department of Mathematical Sciences, IUT, 2002-2006.
- Scientific Committee Member, 36th Annual Iranian Mathematical Conference, 2006.
- Iranian Mathematical Society Member. 1380-present

TEACHING EXPERIENCE

Undergraduate Courses:

Calculus
Differential Equation
Fundamentals of Mathematics
Discrete Mathematics
Fundamentals of Combinatorics
Game Theory
Graph Theory
Mathematical Writing

Graduate Courses:

Graph Theory
Advanced Graph
Theory Algebraic
Graph Theory
Combinatorial
Analysis Topics in
Combinatorics
Probabilistic Method in Combinatorics
Spectral Graph Theory

1. Seyede Fatemeh Noorani, Mohammad Hossein Manshaei, Mohammad Ali Montazeri, Behnaz Omoomi, Fostering Peer Learning with a Game-Theoretical Approach in a Blended Learning Environment, *IEEE Transactions on Computational Social Systems*, doi: 10.1109/TCSS.2021.3101467.
2. Behnaz Omoomi, Elham Roshanbin and Marzieh Vahid Dastjerdi, A polynomial time algorithm to find the star chromatic index of trees, *The Electronic Journal of Combinatorics* 28(1), #P1.6, 2021. <https://doi.org/10.37236/9202>.
3. Behnaz Omoomi and Marziyeh Vahid Dastjerdi, Star edge coloring of the Cartesian product of graphs, *Australasian Journal of Combinatorics*, Volume 79(1), 15–30, 2021.
4. Behnaz Omoomi, Marziyeh Vahid Dastjerdi and Yasaman Yektaeian, Star edge coloring of Cactus graphs, *Iranian Journal of Science and Technology, Transactions A: Science*, <https://doi.org/10.1007/s40995-020-00829-z>, 2020.
4. Behnaz Omoomi and Maryam Taleb, Clique-coloring of K_3 , 3-minor free graphs, *Bulletin of the Iranian Mathematical Society*, <https://doi.org/10.1007/s41980-019-00341-0>, 2019.
5. Mahsa Mozafari-Nia and Behnaz Omoomi, Injective chromatic number of outer planar graphs, *Taiwanese Journal of Mathematics* 22 (6), 1309-1320, 2018.
6. Ali Ghiasian, Behnaz Omoomi and Hosein Saidi, Complexity reduction of throughput optimal link scheduling algorithm through topology control in wireless networks, *International Journal of Ad Hoc and Ubiquitous Computing* 27 (1), 69-79, 2017.
7. Behnaz Omoomi and Elham Roshanbin, Star coloring and tree-width of Kneser graph $KG(n, 2)$, *Utilitas Mathematica*. 102, 149-160, 2017.
8. Ali Behtoei, Akbar Davoodi, Mohsen Jannesari, and Behnaz Omoomi. A characterization of some graphs with metric dimension two, *Discrete Mathematics, Algorithms and Applications*, 9(2), DOI: 10.1142/S17938309175002764. 2017.
9. Zeinab Maleki and Behnaz Omoomi, Some lower bounds for the L-intersection number of graphs, *Bulletin of Iranian Mathematical Society*, 43(1): 69-78, 2017.
10. Behrouz Bagheri, Mohsen Janesari and Behnaz Omoomi, Uniquely dimensional graphs, *Ars Combinatoria*, 129: 249-259, 2016.
11. Mohsen Janesari and Behnaz Omoomi, Characterization of randomly k -dimensional graphs, *Ars Combinatoria*. 127: 357-372, 2016.

12. Ali Behtoei and Behnaz Omoomi, On the locating chromatic number of the Cartesian product of graphs, *Ars Combinatoria*, 126: 221-235, 2016.
13. Malihe Modalelian and Behnaz Omoomi, Critical Hamiltonian connected graphs, *Ars Combinatoria*, 126: 13-27, 2016.
14. Akbar Davoodi, Ramin Javadi and Behnaz Omoomi, Edge clique covering sum of graphs, *Acta Math. Hungar.*, DOI: 10.1007/s10474-016-0586-1.
15. Ramin Javadi, Zeinab Maleki and Behnaz Omoomi, Local clique covering of claw-free graphs, *Journal of Graph Theory*, 81(1), 92–104, 2016.
16. Akbar Davoodi, Ramin Javadi and Behnaz Omoomi, Pairwise balanced designs and sigma clique partitions, *Discrete Mathematics*, 339(5):1450–1458, 2016.
17. Behrouz Bagheri and Behnaz Omoomi, Small oriented cycle double cover of graphs, *Bulletin of the Malaysian Mathematical Sciences Society*, 39(1): 219-225, 2016.
18. Hamed Fahimi and Behnaz Omoomi, On incidence coloring for some graphs of maximum degree 4, *Ars Combinatoria*, 125:33-45, 2016.
19. Akbar Davoodi and Behnaz Omoomi, On the 1-2-3-conjecture, *Discrete Mathematics and Theoretical Computer Sciences*, 17(1): 67-78, 2015.
20. Behrouz Bagheri and Behnaz Omoomi, On the oriented perfect path double cover conjecture, *Bulletin of Iranian Mathematical Society*, 41(1): 189-200, 2015.
21. Behrouz Bagheri and Behnaz Omoomi, On the simultaneous edge coloring of graphs, *Discrete Mathematics, Algorithms and Applications*, 6(4):1450049-1—1450049-16, 2014.
22. Toraj Shabanian, Massoud Reza Hashemi, ahmad Askarian and Behnaz Omoomi, An Optimal Traffic Distribution Method Supporting End-to-End Delay Bound, *Journal of computing and Security*, 1(1): 61-71, 2014.
23. Mohsen Janesari and Behnaz Omoomi, Characterization of n -vertex graphs with metric dimension $n-3$, *Mathematica Bohemica*, 139(1):1-23, 2014.
24. K.M. Koh, Zeinab Maleki and Behnaz Omoomi, Max-min total restrained domination number, *Ars Combinatoria*, 112:161-174, 2013.
25. K.M. Koh, Zeinab Maleki and Behnaz Omoomi, On the total restrained domination edge critical graphs, *Ars Combinatoria*, 109:97-112, 2013.
26. K.M. Koh, Zeinab Maleki and Behnaz Omoomi, An upper bound for the total restrained domination number of graphs, *Graphs and Combinatorics*, 29:1443–1452, 2013.

27. Ali Ghiasian, Hussein Saidi, Behnaz Omoomi and Soodeh Amiri, The impact of network topology on delay bound in wireless Ad Hoc networks, *Wireless Network*, 19:237-24, 2013.
28. Ramin Javadi and Behnaz Omoomi, On b-coloring of cartesian product of graphs, *Ars Combinatoria*, 107:521-536, 2012.
29. Mohsen Janesari and Behnaz Omoomi, The metric dimension of the lexicographic product of graphs, *Discrete Mathematics*, 312(22): 3349-3356, 2012.
30. Mahdi Sajadieh, Mohamad Dakhilalian, Hamid Mala and Behnaz Omoomi, On construction of involutory MDS matrice from Vandermonde Matrices in $GF(2q)$, *Des. Codes Cryptogr.*, 64:287–308, 2012.
31. Mohsen Janesari and Behnaz Omoomi, On randomly k-dimentional graphs, *Applied Mathematics Letters*, 24: 1625-1629, 2011.
32. Ali Behtoei and Behnaz Omoomi, On the locating chromatic number of Kneser graphs, *Discrete Applied Mathematics*, 159: 2214-2221, 2011.
33. Ramin Javadi and Behnaz Omoomi, On b-coloring of Kneser graphs, *Discrete Mathematics*. 309: 4399-4408, 2009
34. Behnaz Omoomi and Ali Pourmiri, Locally rainbow graphs, *Utilitas Mathematica*. 79: 267-275, 2009
35. Behnaz Omoomi and Nasrin Solatnkhah, Constructing regular graphs with smallest defining number, *Ars Combinatoria*. 91: 19-31, 2009.
36. Behnaz Omoomi and Ali Pourmiri, Local coloring of the Kneser graphs, *Discrete Mathematics*, 308: 5922-5927, 2008.
37. Behnaz Omoomi and Ali Pourmiri, On the local colorings of graphs, *Ars Combinatoria*, 86: 147-159, 2008.
38. E.S. Mahmoodian, Behnaz Omoomi, and Y.H. Peng, On the defining sets of some special graphs. *Australian Journal of Combinatorics*, 35: 69-81, 2006.
39. E.S. Mahmoodian, Behnaz Omoomi, and Nasrin Soltankhah, Smallest defining number of r-regular k-chromatic graphs: $r \neq k$. *Ars Combinatoria*, 78: 211-223, 2006.
40. Behnaz Omoomi and Y.H. Peng, Chromatic equivalence classes of certain generalized polygon trees, III. *Discrete Mathematics*, 271:223-234, 2003.

41. Behnaz Omoomi and Y.H. Peng, Chromatic equivalence classes of certain generalized polygon trees, II. *Ars Combinatoria*, 68:115-124, 2003.
42. Behnaz Omoomi and Y.H. Peng, Chromatic equivalence classes of certain cycles with edges. *Discrete Mathematics*, 232:175-183, 2001.

PUBLICATIONS IN FARSI

- Behnaz Omoomi and Ramin Javadi, *Combinatorial Games*, Book, Second Edition, Jahad Daneshgahy Publisher, 1394.
- Behnaz Omoomi and Ramin Javadi, *Combinatorial Games*, Book, Jahad Daneshgahy Publisher, 1389.
- Ramin Javadi and Behnaz Omoomi, *Strategy of Conflict in Game Theory*, *Farhang va Andishe Riyazi*. 40: 47-62, 1387.
- Behnaz Omoomi, *Fundamentals of Combinatorics*, Lecture note, IUT, 1394.
- Behnaz Omoomi, *Algebraic Graph Theory*, Lecture note, IUT, 1392.
- Behnaz Omoomi, *Graph theory*, Lecture note, IUT, 1387.
- Behnaz Omoomi, *Guide to Latex and FTeX*, IUT, 1386.

PAPERS PRESENTED AT NATIONAL AND INTERNATIONAL CONFERENCES

1. Graph Coloring: Various Types, Applications and Open Problems, The 50th Annual Iranian Mathematics Conference, Shiraz University, 26-29 August 2019. (Keynote Speaker)
2. Star Edge Coloring of Cactus Graphs, The 50th Annual Iranian Mathematics Conference, Shiraz University, 26-29 August 2019.
3. A Havel-Hakimi type problem for oriented graphs, The 50th Annual Iranian Mathematics Conference, Shiraz University, 26-29 August 2019.
4. Star Edge Coloring of Cartesian Product of Graphs, Building Bridges II. Conference to celebrate 70th birthday of László Lovász, Budapest, Hungary, July 2 - 6, 2018

5. Set Intersection Representations of Graphs, 8th Conference and Workshop on Algebraic Combinatorics and Graph Theory, Imam Khomeini International University, 7-8 October 2015.
6. An Enforced Hill Climbing Based System for General Game Playing, Computational Intelligence and Games (CIG), 2015 IEEE Conference, Tainan, 31 August- 2 September. 2015.
7. Bounds on Some Variants of Clique Cover Numbers, 46th Annual Iranian Mathematical Conferences. Yazd University, 25-28 August 2015.
8. Metric Dimension of Graphs, The first IPM- Isfahan Workshop on Combinatorics, IPM- Isfahan, 20-22 May 2014.
9. Bike Share Station Location using Graph Domination Set in Graphs, 14th International Conference on Traffic and Transportation Engineering, Tehran, 24-25 February 2014.
10. 2-Trees with Metric Dimension Two, 44th Annual Iranian Mathematical Conferences. Ferdowsi University of Mashhad, 27-30 August 2013.
11. Some Graphs with Vertex-Coloring 2-Edge Weighting, 44th Annual Iranian Mathematical Conferences. Ferdowsi University of Mashhad, 27-30 August 2013.
12. On Vertex-Coloring 2-Edge-Weighting of Graphs, International Conference on Discrete Mathematics and Computer Sciences, University of Beirut, Lebanon, 16th November, 2012.
13. Randomly Dimensional Graphs, 43th Annual Iranian Mathematical Conferences. University of Tabriz, 27-30 August 2012.
14. Locating Chromatic Number of Graphs, 43th Annual Iranian Mathematical Conferences. University of Tabriz, 27-30 August 2012.
15. Application of Line Graph for Link Scheduling in Wireless Networks under M-hope Interference Model, The Third International Conference on advances in Mesh Networks, 2010.
16. Characterization of a Class of Hamiltonian Connected Graphs, 41th Annual Iranian Mathematical Conferences. University of Urmia, 12-15 September 2010.
17. The Incidence Chromatic Number of Graphs with Maximum Degree Four, 41th Annual Iranian Mathematical Conferences. University of Urmia, 12-15 September 2010.
18. A Note on the p-Prime Algorithm for Solving the Maximum Independent Set Problem, 2th Conference on Data Mining and Optimization. Selangor, Malaysia, 27-28 October 2009.

19. On the Star Coloring of Graphs, 40th Annual Iranian Mathematical Conferences. Sharif University, 17-20 August 2009.
20. On the Total Restrained Domination Number, 39th Annual Iranian Mathematical Conference Shahid Bahonar University of Kerman, 24-28 October 2008.
21. On the Dominating Coloring, 38th Annual Iranian Mathematical Conference. University of Zanjan, 3-6 September 2007.
22. On the b-Coloring of Some Special Graphs, 21st British Combinatorial Conference. University of Reading, 8-13 July 2007.
23. Local Chromatic Number of Graphs, 37th Annual Iranian Mathematical Conference. Azarbaijan University of Tarbiat Moalem, 2-5 September 2006.
24. Distance Locating Sets in Graphs, 35th Annual Iranian Mathematical Conference. Shahid Chamran University Ahvaz, 26-29 January 2005.
25. On the Defining Numbers of Cartesian Product of Cycles. 19th British Combinatorial Conference. University of Wales, 29th June- 4th July 2003.
26. Chromatic Classes of Certain 2-Connected Graphs. 33rd Annual Iranian Mathematical Conference. Mashhad Ferdosi University, 30th -2nd September 2002.
27. Chromaticity of Generalised Polygon Trees. International Conference on Mathematics and its Applications in the New Millennium, University Putra Malaysia, 18-19 July 2000.
28. A New Bound for Defining Numbers of Regular Graphs. The First Seminar of Women and Mathematics in Iran. Az-zahra University, 2nd March 2000.

RESEARCH PROJECTS

- Star Edge Coloring of Graphs, Iran National Science Foundation, 1396-1398
- Defining Set of Cartesian Product of Cycles, Department of Mathematical Sciences, IUT, 1380-1381
- On the b-coloring of graphs, Department of Mathematical Sciences, IUT, 1387-1388

SUPERVISED PH.D. STUDENTS

1. Star Chromatic Index of Graphs, Marzieh Vahid Dastjerdi, 2020 (1399)

2. Clique Coverings and Clique Partitions of Graphs, Akbar Davoodi, 2016 (1395)
3. On the Set Intersection Representation of Graphs, Zeinab Maleki, 2015 (1394)
4. On the Cycle Double Cover of Graphs, Behrouz Bagheri, 2013 (1392).
5. The Metric Dimension of Graphs, Mohsen Jannesari, 2012 (1391)
6. Locating Coloring of Graphs, Ali Behtoei, 2012 (1391)

SUPERVISED M.SC. STUDENTS

1. Algorithms for Frequent Subgraph Mining in Graph Mining, Maedeh Asady, 2021 (1400)
2. Nonrepetitive Colorings of Graphs, Mahtab Motamedy, 2021 (1400)
3. Optimum Invariants of Graphs with Given Degree Sequence, Fateme Sadat Khademi, 2020 (1399)
4. Locating-Dominating Sets in Graphs, Narges Mohajery, 2020 (1399)
5. The Impact of the Structure of Directed Graphs on Designing Optimal Algorithms, Yasaman Yektaeian, 2019 (1397)
6. Maximum Clique Problem, Effat Hashemi, 2018 (1397)
7. Cycle Basis and its Application in Structural Analysis, Elham Sirazbakhti, 2017 (1396)
8. Web Graphs, Elham Molodian, 2017 (1396)
9. On the Injective Coloring of Graphs, Mahsa mozafarinia, 2017 (1396)
10. On a Traffic Control Problem Using Interval Graph, Roza Nasr, 2016 (1395).
11. Preserving the Privacy on Social Networks by Clustering Based Anonymization, Malihe Abdolah, 2016 (1395).
12. Clique Coloring of Graphs, Maryam Taleb, 2016 (1395).
13. Application of Graph Theory to Analysis Complex Biological Networks, Mojgan Saedi, 2015 (1394).
14. The Star Edges Coloring of Graphs, Marzieh Vahid Dastjerdi, 2015 (1394).
15. Application of Graph Theory in Privacy Preserving in Social Networks. Hourie Mehrabiun, 2015 (1394).
16. Equitable Coloring of Graphs, Fateme Kiyani, 2014 (1393).
17. List Equitable Coloring of Graphs, Azam Naghizadeh, 2014 (1393).
18. Application of Graph Theory in Transportation, Nasrin Mohammad Soltan, 2014 (1393).
19. Resolving Sets of Kneser and Johnson Graphs, Mohamad Banavand, 2014 (1393).
20. Orthogonal Vector Coloring, Fateme Modalelian, 2013 (1392).
21. Vector Representation of Graph Domination, Zahra Ghaeli, 2013 (1392).
22. Characterization of Claw-free Graphs, Alireza Sadeghpour, 2013 (1392).
23. Line Hypergraphs, Tayebe Safarpour, 2013 (1392)
24. Biclique Covering of Graphs, Somaye Beygi, 2012 (1391)
25. Vertex- Coloring Edge-Weighting of Graphs, Akbar Davoodi, 2012 (1391)
26. Application of Graph Theory in Molecular Biology, Mahboobeh Jannesari, 2012 (1391)
27. Incidence Coloring of Graphs, Hamed Fahimi, 2010 (1389)
28. Hamiltonian Coloring of Graphs, Malihe Modalelian, 2010 (1389)
29. $[r,s,t]$ -Coloring of Graphs, Sara Salehirad, 2010 (1389)

30. Star Coloring of Graphs, Elham Roshanbin, 2009 (1388)
31. Total Restrained Domination Number of Graphs, Zeinab Maleki, 2008 (1387)
32. Chip Firing Game and b-Coloring, Ramin Javadi, 2007 (1386)
33. Generalizations of Ramsey Number, Mansoreh Sajadi, 2007 (1385)
34. Domination Coloring of Graphs, Fahimeh Ramezani, 2007 (1385)
35. Local Colorings of Graphs, Ali Pourmiri, 2007 (1385)
36. Locating Sets and Locating Numbers in Graphs, Amir Khamseh, 2004 (1383)
37. Interval Graphs and Prob Interval Graphs, Fatemeh Amini, 2004 (1383)
38. DNA Graphs, Elham Hajarizadeh, 2004 (1383)

SUPERVISED B.SC. STUDENTS

1. Brain Network Similarity Methods and Applications, Saba Ghasemi, 2021 (1400)
2. Graph Modeling for Tracking the Covid-19 Pandemic Spread, Hadis Haghshenas, 2021 (1400)
3. Timetabling via Graph Coloring, Panian Shams, 2020 (1399)
4. Algorithms in Graph Theory, Ali Yar Ahmadi, 2018 (1397)
5. Metric Dimension of Honeycomb Graphs, Motahereh Hob Ali, 2016 (1396)
6. Linear Spaces Associated to G, Marzieh Vahid Dastjerdi, 2013 (1392)
7. Polya Counting Method, Hourie Mehrabiun, 2013 (1392)
8. Game Chromatic Number of Graphs, Majid Karimi, 2010 (1389)
9. Eigenvalues of Graphs, Akbar Davoodi, 2009 (1388)
10. Efficient Graph Topologist in Network Routing Games, Mohammad Ahangari, 2009 (1387)
11. Matroid Theory, Elham Roshanbin, 2006 (1385)
12. Graph Theory and Biomathematics, Farnoosh Hafezi, 2004 (1383)
13. Graph Theory and Operation Research, Mahdiye Golrangi, 2003 (1382)
14. Graph Theory in Maple, Fatemeh Atoof, 2003 (1382)
15. Chromatically Unique Graphs, Marziye Taher, 2003 (1382)
16. Chromatic Polynomial, Atefeh Moinipor, 2003 (1382)
17. Eigenvalues of Graphs, Nilofar Hatami, 2002 (1381)
18. Graph Labeling, Zeinab Arab, 2002 (1381)
19. Ramsey Theory, Mehdi Sajadi, 2002 (1381)