CURRICULUM VITAE

Ali Taherkhani

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PERSONAL DATA

- Birth Date: September 22, 1982.

- Country of Citizenship: Iran.

RESEARCH INTERESTS

- Graph Theory and Combinatorics: Graph Partitioning, Graph Coloring, Extremal Combinatorics, Probabilistic Methods in Combinatorics, Algebraic Combinatorics, Topological Combinatorics and Their Interconnections.

- Computer Science and Cryptography.

ACADEMIC BACKGROUND

Ph.D.   **Shahid Behshti University**, Tehran, Iran.
Doctor of Philosophy in Combinatorics, July, 2010.
Title of Thesis: Graph Powers and Graph Homomorphisms
Cumulative GPA: 19.70 out of 20.
My Supervisor: Professor Hossein Hajiabolhassan.

M.S.   **Sharif University of Technology**, Tehran, Iran.
Master of Science in Mathematics, 2004-2006.
Title of Thesis: The Relationship Between Chromatic Number,
Maximum Degree, and Clique Number in Graphs
Cumulative GPA: 17.86 out of 20.
My Supervisor: Professor Amir Daneshgar.

B.S.   **Shahid Behshti University**, Tehran, Iran.
Bachelor of Science in Mathematics, June, 2004.
Cumulative GPA: 15.96 out of 20.

PUBLICATIONS and PREPRINTS

1. Amir Daneshgar, Hessam Firouzi, and Ali Taherkhani, *Commutative Subgraph Decompositions and Association Schemes,* preprint.

2. Yaser Rowshan, Ali Taherkhani, *Partitioning of a graph into induced subgraphs not containing prescribed cliques,* Discrete Applied Mathematics, 344, 68–80, 2024.

3. Yaser Rowshan and Ali Taherkhani, *Catlin-type theorem for graph partitioning avoiding prescribed subgraphs,* Discrete Math., 345 (8), 112911, 2022.

4. Ali Taherkhani, *Size and structure of large (s,t)-union intersecting families,* Electron. J. Combin., 29(2), P2.25, 2022.

5. Ali Taherkhani, *An upper bound for the size of a cross t-almost ntersecting family,* Mathematical Researches, 8(1), 205–2014, 2022 (In Persian).

6. Amir Daneshgar and Ali Taherkhani, *On the spectra of cylindrical constructs,* Discrete Math., 342(1), 96–112, 2019.

7. Meysam Alishahi and Ali Taherkhani, *On the random version of the Erdős matching conjecture*, Discrete Applied Mathematics, 254, 1–9, 2019.

8. Meysam Alishahi and Ali Taherkhani, *On G-free induced subgraphs of Kneser graphs*, Journal of Combinatorial Theory, Series A, 159, 269–282, 2018.

9. Roya Abyazi Sani, Meysam Alishahi, and Ali Taherkhani, *Coloring Properties of Categorical Product of General Kneser Hypergraphs,* Ars Mathematica Contemporanea, 15(1), 113–126, 2018.

10. Meysam Alishahi and Ali Taherkhani, *Circular chromatic number of induced subgraphs of Kneser graphs,* Ars Mathematica Contemporanea, 15(1), 161–172, 2018.

11. Ali Taherkhani, *On r- Dynamic Chromatic Number of Graphs*, Discrete Applied Mathematics, 201, 222–227, 2016.

12. Hossein Hajiabolhassan and Ali Taherkhani, *On the Circular Chromatic Number of Graph Powers*, Journal of Graph Theory, 75, 48–58, 2014.

13. Meysam Alishahi and Ali Taherkhani, *A Note on Chromatic Sum*, Ars Combinatoria, Volume CXVI, 49–54, 2014.

14. Meysam Alishahi, Ali Taherkhani, and Carsten Thomassen *Rainbow paths with prescribed ends*, Electron. J. Combin., 18(1):Research Paper 86, 5, 2011.

15. Meysam Alishahi, Hossein Hajiabolhassan and Ali Taherkhani, *A Generalization of the Erdős-Ko-Rado Theorem*, Discrete Math., 310(1), 188–191, 2010.

16. Hossein Hajiabolhassan and Ali Taherkhani, *Graph Powers and Graph Homomorphisms*, Electron. J. Combin., 17(1):Research Paper 17, 16, 2010.

HONORS

- I won the **Bronze Medal** in the "Mathematics Competition for Undergraduate University Students". This Competition is held annually by the **Iranian Mathematical Society**, and the participants are the distinguished students from the universities throughout the country, 2004.

- Received the **14th** place in the **Nationwide Entrance Examination** for the MS degree, 2004.

- Graduated with **rank 2** among B. Sc. Students in Pure Mathematics **Shahid Beheshti University**, Tehran, Iran.

SABBATICAL LEAVE

- I spent my six months sabbatical leave at the Technical University of Denmark (November 2009- April 2010).

- I spent my one month sabbatical leave at the Technical University of Denmark (September 2013).

- I spent my 3 months sabbatical leave at the Institute of Computer Science of University of Tartu, Estonia (July-September 2015).

- I have 1 month research visit from Zhejiang Normal University, China, (December 2020).

TALKS:

1. Partial List Coloring, Sharif University, 2005.

2. Talagrand's Inequality and Graph Coloring, Shahid Beheshti University, 2007.

3. Some Applications of Borsuk-Ulam Theorem, in Workshop on Topological Combinatorics, Shahid Beheshti University, October 2009.

4. On Coloring Properties of Generalized Mycielski Construction, in Workshop on Topological Combinatorics, Shahid Beheshti University, October 2009.

5. On Circular Chromatic Number of Kneser Graphs, Weekly Seminar on Combinatorics and Computing, IPM, December 2010.

6. Rainbow paths with prescribed ends, IPM, Mrach 2012.

7. Graph powers and circular chromatic number, ICTP-IPM Workshop and Conference in Combinatorics and Graph Theory, ICTP, September 2012.

8. Some properties of graph powers, IASBS Combinatorics and Graph Theory Workshop 2014, IASBS, September 2014.

9. Dynamic chromatic number of graphs, Sharif University of Technology, November 2014.

10. Categorical product of hypergraphs and its coloring properties, IPM, October 2017.

11. On Circular Coloring of Some Induced Subgraphs of Kneser Graphs, Sharif University of Technology, November 2017.

12. Chromatic number of categorical product of hypergraphs, IASBS, November 2017.

13. A stability theorem for $K_{1,t}$-free subgraphs of Kneser graphs, 50th Annual Iranian Mathematics Conference, 26–29 August 2019.

14. Extremal Combinatorics, Erdős-Ko-Rado Theorem and some of its Generalizations, IASBS, September 2018.

15. Size and structure of large G-free induced subgraphs of Kneser graphs, Zhejiang Normal University, December 2019.

16. Hedetniemi's Conjecture, summer school for Bsc students, online, 2020.

17. Stability results for (s,t)-union intersecting families, 43rd Australasian Combinatorics Conference, 13–17 December 2021.

18. A Catlin-type Theorem for G-free Coloring of Graphs, IPM, April 2022.

19. A general framework for Erdős-Ko-Rado type problems, joint work with Javad B. Ebrahimi, 54th Annual Iranian Mathematics Conference, 23–25 August 2023.

20. G-free coloring of graphs: a Catlin-type result and a generalization of the Borodin-Kostochka Conjecture, **Invited Speaker**, Graph Theory and Algebraic Combinatorics Conference (GTACC12) Feb. 7-8, 2024, Tafresh University, Tafresh, Iran.

TEACHING EXPERIENCES

1. **Some Aspects in Combinatorics** (Institute for Advanced Studies in Basic Sciences, 2023)

2. **Some Aspects in Probabilistic Methods** (Institute for Advanced Studies in Basic Sciences, 2017)

3. **Probabilistic Methods** (Institute for Advanced Studies in Basic Sciences, 2012-2023)

4. **Combinatorics** (Institute for Advanced Studies in Basic Sciences, 2015-2023)

5. **Graph Theory(2)** (Institute for Advanced Studies in Basic Sciences, 2012-2023)

6. **Some Aspects in Topology(Topological Combinatorics)** (Institute for Advanced Studies in Basic Sciences, 2012)

7. **Some Aspects in Cryptography** (Institute for Advanced Studies in Basic Sciences, 2012)

8. **Graph Theory(1)** (Institute for Advanced Studies in Basic Sciences, 2012, 2023)

9. **Cryptography Theory(1)** (Institute for Advanced Studies in Basic Sciences, 2011-2022)

10. **Cryptography Theory(2)** (Institute for Advanced Studies in Basic Sciences, 2017, 2020, 2022)

11. **Algebraic Graph Theory(1)** (Institute for Advanced Studies in Basic Sciences, 2011, 2013, 2017, 2019)

12. **Discrete Mathematics** (Shahid Beheshti University, 2008),

13. **Organizing and Teaching** the Training of the "Mathematics Competition for Undergraduate University Students" in Shahid Beheshti University. This Competition is Held Annually by the Iranian Mathematical Society, and the Participants are the Distinguished Students from the Universities Throughout the Country (2009).

14. **T.A.; Probabilistic Methods** (Shahid Beheshti University, 2008).

SOME OTHER WORK EXPERIENCES

1. **Chairman** of Department of Mathematics, IASBS, Feb 2020– Apr 2022.

2. **Organizer** of IASBS Combinatorics and Graph Theory Workshop 2014 in Institute for Advanced Studies in Basic Sciences.

3. **Organizer** of 36th Iranian Mathematics Competition in Institute for Advanced Studies in Basic Sciences. This Competition is Held Annually by the Iranian Mathematical Society, and the Participants are the Distinguished Students from the Universities Throughout the Country (2012).

4. A member of **the scientific committee** of Iranian Mathematics Competition 2019-present.

5. A member of the **scientific committee** of 54th Annual Iranian Mathematics Conference 2023.

6. A member of the **Research Council of IASBS**, Sep 2014– Mar 2017..

7. A member of the **organising committee** the IASBS Mathematical Schools for Undergraduate University Students 2017, 2019.

8. A member of the **organising committee** the Summer Mathematical Schools for Students 2016, 2017, 2018, 2019.

9. A member of the **organising committee** CIMPA-WAMS Summer Research Schools on Algebraic Geometry and Commutative Algebra 2017, 2018.

10. A member of the **organising committee** of 45th Iranian Mathematics Competition in Institute for Advanced Studies in Basic Sciences July 2023.

11. **Organizer** of Weekly Seminars of Department of Mathematics 2013–2014.