08/2022

CURRICULUM VITAE

UNIVERSITY EDUCATION

1. Ph.D (Computer Science): University of Nebraska at Lincoln, 1996.
2. M.S (Computer Science): University of Nebraska at Lincoln, 1994.
3. M.S (Mathematics): University of Nebraska at Lincoln, 1992.
4. B.S (Mathematics): Ege University, 1986.

ACADEMIC EXPERIENCE

1. Full Professor, Computer Science Program at School of Engineering and Applied Science, Western Kentucky University, 2008 -
2. Associate Professor, Computer Science Program at School of Engineering and Applied Science, Western Kentucky University, 2001-2008.
3. Associate Professor, International Computing Institute, Ege University, 1999-2001.
4. Assistant Professor, International Computing Institute, Ege University, 1996-1999.
5. Research assistant, Computer Science and Engineering, University of Nebraska, 1995-1996.
6. Teaching assistant, Computer Science and Engineering, University of Nebraska, 1994-1995.
7. Teaching assistant, Department of Mathematics, Ege University 1986-1988.

RESEARCH ARES

My main research interests are in Graph Theory, Combinatorics, Cryptography , and their interactions.

THESIS

1. Mustafa Atici, Optimal Information and Average Information Rates of the Connected Graphs on Six Vertices, M.Sc Thesis in Computer Science 1994. Under the supervision of Professor Douglas R. Stinson.

2. Mustafa Atici, Hash Families: Recursive Constructions and Application to Cryptography, Ph.D. Thesis 1996. Under the supervision of Professor Douglas R. Stinson.

PUBLICATIONS

PUBLISHED

1. F. Atici, M. Atici, N. Nguyen, T. Zhoroev, and G. Koch, A study on discrete and discrete fractional pharmacokinetics-pharmacodynamics models for tumor growth and anti-cancer effects,*Computational Mathematical Biophysics*, 7(2019), 10-24.

2. F. M. Atici, M. Atici, M. Belcher, and D. Marshall, A New Approach for Modeling with Discrete Fractional Equations, Fundamenta Informaticae, 151(2017), 313-324. doi:10.3233/FI-2017-1494

3. M. Atici. Efficient Algorithm to Construct Perfect Secret Sharing Scheme for a Given Access Structure, 2016 ACM digital library, DOI:dx.doi.org/10.1145.2897795.2897810

4. B. Knowles and M. Atici. Exact Solution for Pathnding under Visible Uncertainty using Dynamic Programming. CATA 2016 Proceeding. 4-6, 2016 Las Vegas, USA.

5. F. Atici, M. Atici, W. Hrushesky, and N. Nguyen. Modelling Tumor Volume with Basic Functions of Fractional Calculus. *Progr. Fract. Differ. Appl.* **1**, No. 4 (2015) pp 229-241.

6. M. Atici. Complexity of Extremal Set Decision Problem, *Journal of Combinatorial Mathematics and Combinatorial Computing*, Vol 88,(2014) pp 51-59.

7. M. Atici. Secret Sharing Scheme: Vector Space Secret Sharing and ϕ Function IEEE/ACM ASONAM 2012 August 26-29, Istanbul-Turkey, 2012, pp 946-950.

8. M. Atici. Graph Coloring: Color sequence and Algorithm for Color sequence, Proceedings of the 49-th Annual Association for Computing Machinery Southeast Conference, March 24-26 Kennesaw - Georgia, 2011, pp 150-154.

9. M. Atici and C.Ernst. On the Range of Possible Integrities of Graph $G(n, k)$, *Graphs and Combinatorics* (2011) 27: 475-485.

10. M. Atici, R. Crawford, and C. Ernst. The Integrity of small cage graphs, *Australasian Journal of Combinatorics* Volume 43(2009), pp 39-55.

11. M. Atici, Data Retrieval and Extremal Set, *International Journal: Mathematical Manuscripts (IJMM)* Volume 1, Number 1(2007),pp 27-32.

12. M. Atici. (t,k)-Geodetic Set of a Graph.*Ars Combinatoria* **82**(2007), pp. 201-210.

13. M. Atici, R. Crawford, and C. Ernst. New Upper Bounds for the Integrity of Cubic Graphs.*International Journal of Computer Mathematics* Vol.**81**, No.11, November 2004, pp.1341-1348.

14. M. Atici. On the Edge Geodetic Number of a Graph. *International Journal of Computer Mathematics* Vol.**80**, No.7 (2003) pp 853-861.

15. M. Atici and A. Vince. Geodesics in graphs, an Extremal set problem, and Perfect Hash Families. *Graphs and Combinatorics*, **(18)**(2002) pp 403-413.

16. M. Atici. Computational Complexity of Geodetic Set. *International Journal of Computer Mathematics* Vol. **79**, No. 5,(2002) pp 587-591.

17. M. Atici. Integrity of Regular Graphs and Integrity Graphs. *Journal of Combinatorial Mathematics and Combinatorial Computing*, Vol. 37, (2001) pp 27-42.

18. M. Atici. Information and Average Information Rates of the Graph Access Structure on Six Vertices. *Turkish Journal of Electrical Engineering and Computer Sciences*, Vol 8, Number 1,(2000) pp 55-66.

19. M. Atici and A. Kirlangic. Counterexamples to the Theorems of Prisms and Ladders. *Journal of Combinatorial Mathematics and Combinatorial Computing*, Vol 34,(2000) pp 119-127.

20. M. Atici, D. Stinson, and W. Wei. A New Practical Algorithm for the Construction of a Perfect Hash Function. *Journal of Combinatorial Mathematics and Combinatorial Computing*, Vol 35,(2000) pp 127-145.

21. M. Atici. Small Hash Families, *Congressus Numerantium*, Vol 139,(1999) pp 139-149.

22. M. Atici. Graph Operations and Their Geodetic Number, *Congressus Numerantium*, Vol 141,(1999) pp 95-110.

23. M. Atici, M. Magliveras, D. Stinson, and D. Wei. Some Recursive Constructions for Perfect Hash Families. *Journal of Combinatorial Designs* Vol. 4, No. 5,(1996) pp 353-363.

CONFERENCE PAPERS AND PRESENTATIONS

1. A. Pinney and M. Atici, Finding the Information Rates of Secret Sharing Schemes Using Decomposition Construction, 51st Annual Student Research Conference, April 9-10 2021, Bowling Green KY

2. Kentucky Research Computing Cyberteam Briefing, July 21, 2020, Seminar over Zoom.

3. M.Atici, Geodetic Ratio and Minimum Geodetic Ration of a Simple Connected Graphs, MIGHTY-62, October 18-19, 2019, Marion - OH.

4. F. Atici, M. Atici, N. Nguyen, T. Zhoroev, and G. Koch, A study on discrete and discrete fractional pharmacokinetics-pharmacodynamics models for tumor growth and anti-cancer effects, NSF-CBMS conference on Mathematical Molecular Bioscience and Biophysics, May 13-17, 2019 Tuscaloosa, AL.

5. M. Atici. Huffman Data Compression Algorithm and SHA-1 hashing, KYMAA 2019, March 29-30, 2019 Danville KY.

6. M. Atici and L.Devulapalli. Application Of Huffman Data Compression Algorithm in Hashing Computation, Kentucky Science and Academy 2018, November 2-3, 2018 Bowling Green KY.

7. L. Devulapalli and M. Atici. Application Of Huffman Data Compression Algorithm in Hashing Computation, ACMSE'18, March 29-31, 2018 Richmond KY.

8. F. Atici and M. Atici. The 19th International Symposium on Bioinformatics and Ecology Education and Research, Oct 6-8, 2017, Normal, Illinois. (Poster Presentation)

9. KBRIN Bioinformatics, August 25th, 2017, Shaker Village, Lexington, KY

10. F. Atici and M. Atici. UT-KBIRN Bioinformatics Summit 2017, April 20-22, 2017, Montgomery Bell State Park, TN. (Poster Presentation)

11. M. Atici. Vector Space Based Secret Sharing Scheme for Non-complete Multipartite Graphs, 29-th Cumberland Conference May 20-21, 2017 Nashville TN.

12. M. Atici. Efficient Algorithm to Construct Perfect Secret Sharing Scheme for a Given Access Structure, CISRC'16. April 5-7, 2016. Oak Ridge, TN.

13. B. Knowles and M. Atici. Exact Solution for Pathnding under Visible Uncertainty using Dynamic Programming. CATA 2016. April 4-6, 2016 Las Vegas, NV.

14. Vector Space Secret Sharing and an Efficient Algorithm to Construct Secret Sharing Function, MIGHTY-56 October 3-4, 2014. Fort Wayne, IN.

15. Path Finder Under Uncertainty(Bryan Knowles has presented), Kentucky Academy of Science November 14, 2014. Frankfort, KY.

16. Poster presentation, Kentucky Innovation and Entrepreneurship Conference. September 5, 2014. Louisville, KY

17. Parameter Estimations of Sigmoidal Models of Cancer, UT-KBIRN Bioinformatics Summit 2014, April 11-13, 2014, Cadiz, Kentucky. (Poster Presentation)

18. Vector Space Secret Sharing and an Efficient Algorithm to Construct a ϕ Function, 2014 Annual Meeting of KYMAA, March 28-29 2014, Murray State University, Murray, Kentucky.

19. Parameter Estimations of Sigmoidal Models of Cancer, 9-th Kentucky Innovation and Entrepreneurship 2013 Conference, Lexington-KY, August 29th, 2013. (Poster Presentation)

20. Vector Space Secret Sharing Scheme and an Efficient Algorithm to Construct a ϕ Function, ACMSE'13, April 4-6,2013 Savanna GA.

21. Secret Sharing Scheme: Vector Space Secret Sharing and ϕ Function, IEEE/ACM ASONAM 2012 26-29 August 2012, Istanbul-Turkey.

22. Vector Space Secret Sharing Scheme, MIGHTY 52, April 27-28, 2012 Terre Haute IN.

23. Edge Geodetic Set-Extremal Set and its Complexity, 2-nd International Symposium on Computing in Science and Engineering, June 1-4, 2011 Izmir-Turkey.

24. Graph Coloring: Color sequence and Algorithm for Color sequence, Proceedings of the 49-th Annual Association for Computing Machinery Southeast Conference, March 24-26 Kennesaw - Georgia, 2011.

25. Color sequences and Algorithm. The first international symposium on computing in science and engineering. June 3-5, 2010 Kusadasi-Izmir-Turkey

26. Graph Coloring: Color sequences and Algorithm for color sequence. 23rd Cumberland Conference May 20-22, 2010, Oxford Mississippi.

27. Coloring and Color sequence of Graphs. International Symposium on Biomathematics and Ecology. June 13-17, 2009 Izmir, TURKEY.

28. Edge Geodetic Set: Extremal Set and its Complexity. 22th Cumberland Conference May 21-23, 2009 Bowling Green KY.

29. $(n, m)-$Graphs with Maximum Integrity. MIGHTY 47 November 8-9, 2008 Chicago, IL.

30. Graph Operations and (t,k)-geodetic. 21st Cumberland Conference May 15-17, 2008 Nashville TN.

31. (t,k)-Geodetic and Graph Coloring. MIGHTY 46 April 25-26, 2008 Morgantown WV.

32. Data Retrieval and Extremal Set, International Conference: 2007- Dynamical System and Applications. July 1-6, 2007 Selcuk, Turkey.

33. (t,k)-geodetic number of a Graph. MIGHTY 43. November 3-4, 2006. Indiana Purdue University, Fort Wayne IN.

34. Complexity of Extremal Set, Kentucky Section Mathematical Association of America Annual Meeting. March 31-April 1, 2006, Center College, Danville, KY.

35. New Upper Bound for Integrity of 3-regular Graphs. MIGHTY 41. September 24-25, 2005, Middle Tennessee State University, Murfreesboro TN.

36. Integrity of 9-cage graphs. AMS sectional Conferences. March 18-19, 2005, Western Kentucky University, Bowling Green, KY.

37. Small Perfect Hash Families, 24-th Annual Mathematics Symposium, Department of Mathematics. September 28-29, 2004, Western Kentucky University, Bowling Green, KY.

38. Integrity of Cubic Graphs. MIGHTY 36. September 19-20, 2003, Valparaiso University, Valparaiso IN.

39. Integrity of Regular Graphs. MIGHTY 35. September 27-28, 2002, Illinois Sate University, Normal, IL.

40. Graphs and Geodetic Numbers, Turkish Mathematical Society XI. National Mathematics Symposium. September 7-11, 1998, Isparta Turkey.

41. Graph Operations and their Geodetic Numbers, *Kolloquim über Kombinatorik*. November 13-14, 1998, Braunschweig Germany.

42. Integrity of Regular Graphs and Integrity Graphs. Proceedings of the *Third Symposium on Computer Networks* (1998) pp 231-240 (Preliminary version).

43. Universal Hashing and Multiple Authentication. *Lecture Notes in Computer Science* 1109 (1996) 16-30. (Advances in cryptology- CRYPTO'96).

44. Perfect Hash Families, R.C. Bose Memorial Conference. June 7-11, 1995, Colorado State University, Forth Collins, Colorado.

SUPERVISED THESIS

1. Master Thesis,*Application of Huffman Data Compression Algorithm in Hashing Computation*, Lakshmi N. Devulapalli Venkata, May 2018.

2. Master Thesis, *In The Face Of Anticipation: Decision MAking Under Visible Uncertainity as Present in The Safest-With-Sight Problem*, Bryan A. Knowles 2016.

3. Master Thesis, *Efficient Algorithm to Construct Vector Space Secret Sharing Scheme and Application of Secret Sharing in Visual Cryptography*, Sunny Potay 2012.

4. Honor Thesis, *Quantifying Network Reliability Through Finding An Upper Bound For Graph Integrity Using Graph Coloring*, Ian Burchett 2009.

CURRENT WORK

1. Integrity of $G(n, m)$ Graphs.
2. Co-geodetic number of a Graph.
3. More about $(t, k) - geodetic$ of a Graph.
4. Graph coloring and color sequences.

GRANTS

1. A Study on Drug Effects using Discrete Fractional Pharmacokinetics - Pharmacodynamics model of Tumor Growth, KSEF-3904-RDE-20 (Co-PI), $50,000, 2017-2018.
2. Semantic Obfuscation as a Defense Against Cryptanalysis, NSF-Secure and Trustworthy Cyberspace (SaTC)(Co-PI),$416,381. Notfunded.
3. Modelling and Predicting Tumor Volume with Advanced Mathematical Techniques KBRIN-invesrigator development grand(Co-PI), $105,313. Not Funden
4. Advanced Optimal Solutions for Large-scale Sustainable Construction KSEF-13-RDE-017 (Co-PI) $28,290. Not Funded.
5. Parameter Estimation of Sigmodial Modules of Cancer KSEF-2488 RDE-014 (Co-PI),$60,000, 2011-2013
6. Western Kentucky University Summer Scholarship 2004. Grant total $5,000. Funded.
7. Intensive computer course for the high school teachers chosen by the Education Ministry. Turkish Education Ministry Grant in 1997. Grant Total $30,000. Funded.
8. Intensive computer course for the armed personals chosen by the Turkish Armed Forces. Turkish Military grant in 1998. Grant Total $60,000. Funded.
9. Establishment of a Rough Set Based Decision Support System for Quality Control of Surface Roughness in Machining Proces. NSF-CISE in 2003. Grant Total $258,725. Not funded.
10. Construction of a Perfect Hash Family. NSF 00-138 in 2003. Grant Total $25,620. Not funded.

11. Convexities in Graph. NSF International Research Grant 2004. PD: Dr. Mustafa Atici, Computer Science Program. CoPD: Dr. Ignacio M. Pelayo, Universitat Politecnica de Catalunya Barcelona - Spain. $15,240.00 Not funded

12. A Software Package for Computations on Time Scale Calculus. NSF 06-353 in 2007. PD: Ferhan Atici, Department of Mathematics. CoPD: Mustafa Atici, Computer Science Program. $219,491 Not funded.

13. Network Reliability: (t,k)-geodetic and integrity. KY/NSF-EBSCoR 2007. PD: Mustafa Atici, Computer Science Program. $25,000 Not funded.

SERVICES

DEPARTMENTAL/PROGRAM

1. SEAS Amalgamation Committee member 2021-2022
2. SEAS Outreach Committee member 2019-2020
3. SEAS Defining Success member 2019-2020
4. ABET Committee member 2012-2019
5. Planning and Assessment(Chair) 2008-2009, 2012-2016
6. Planning and Assessment Committee 2008-2009
7. Graduate Committee (Chair) 2016-2017
8. Graduate Committee 2003-2007, 2009-2012
9. Undergraduate Committee (Chair) 2005-2006, 2008-2009
10. Undergraduate Committee 2002-2005
11. Retention Committee 2003-2004
12. Outreach Committee 2008-2012, 2013-1015, 2019-present
13. Faculty Search Committee 2009 and 2014
14. By-law committee 2008-2009
15. Computer Science Program Coordinator 2017-2019

COLLEGE

1. Ogden Collage Faculty award committee 2003
2. Homecoming Committee 2014
3. Graduate Committee 2016-2017
4. Recruitment Task force 2017-Present

UNIVERSITY

1. Senate member 2004-2007
2. Salary Survey Committee 2006-2007
3. Focus on Western 2010-2012

PROFESSIONAL

1) Advising:

1.	2007-2008	22 (Undergraduate)	0 (Graduate)
2.	2008-2009	27 (Undergraduate)	0 (Graduate)
3.	2009-2010	5 (Undergraduate)	3 (Graduate)
4.	2010-2011	19 (Undergraduate)	1 (Graduate)
5.	2011-2012	24 (Undergraduate)	0 (Graduate)
6.	2012-2013	19 (Undergraduate)	0 (Graduate)
7.	2013-2014	33 (Undergraduate)	0 (Graduate)
8.	2014-2015	31 (Undergraduate)	1 (Graduate)
9.	2015-2016	38 (Undergraduate)	1 (Graduate)
10.	2016-2017	3 (Undergraduate)	50 (Graduate)
11.	2017-2018	24 (Undergraduate)	1 (Graduate)
11.	2018-2019	20 (Undergraduate)	0 (Graduate)
12.	2020-2021	31 (undergraduate)	0 (Graduate)
13.	2021-2022	80 (Undergraduate)	0 (Graduate)

2) Undergraduate research:

1. Abbott Pinney August 2020 - May 2021
2. Christopher Dumond January 2015 - May 2015
3. Nolan Hughes January 2015 - May 2015
4. Daniel Dilger January 2011 - May 2011
5. Derek Fox August 2009 - December 2009

3) Graduate research/Theisis committee member:

1. Fang Wu, August 2012-December 2012
2. Varun Palli, August 2011-December 2012
3. Anoop Rao Paidipally, April 2010-December 2010
3. Jen-Fu Tung, May 2010
4. Gyuchoon Cho, May 2009
5. Vamsi Atluri, August 2007-December 2007

4) Others:

1. Reviewer for American Mathematical Society(AMS)
2. Referee for several Scientific journals
3. Organized sections in regional conferences in WKU: AMS Regional and MIGTHY

COURSES

1. High-level Programming Language
5. Data Structure
6. Cryptography
7. Automata Theory
8. Combinatorics
9. Discrete Mathematics
10. Algorithm Design and Analysis

11. Complexity NP-Completeness
12. Computer Organization
13. Graph Theory and Graph Algorithms
14. Coding Theory