Curriculum vitae

Dániel Gerbner

Date and place of birth: October 5. 1980., Budapest

Nationality: Hungarian

E-mail: gerbner.daniel@renyi.hu

Homepage: http://www.renyi.hu/∼gerbner/

Research interest: Extremal Combinatorics and Search Theory.

Education

1991-1999 Németh László Grammar School

1999-2004 Eötvös Loránd University
Faculty of Science
Msc. in Mathematics

2004-2007 Eötvös Loránd University
Faculty of Informatics
Ph.D program
Supervisor: Gyula O.H. Katona
Title of thesis: Extremal Combinatorial Problems
Date of Defense: 2009. Dec. 9.

Current position

Senior research fellow at the Alfréd Rényi Institute of Mathematics in Budapest, Hungary, September 2016 – present

Earlier positions

OTKA postdoctoral fellow at the Alfréd Rényi Institute of Mathematics in Budapest, Hungary, 2013–2016.

Young researcher (postdoc) and research fellow at the Alfréd Rényi Institute of Mathematics in Budapest, Hungary, January 2008–Augustus 2013.

Teaching Assistant, University of South Carolina, August–December 2007.

Teaching experience

Teaching assistant, Discrete Mathematics, Eötvös Loránd University, Budapest 2005–2007

Teaching assistant, Calculus, Math 141, University of South Carolina, 2007.

Teaching assistant, Foundations of Computer Science, Technical University, Budapest, 2013.

Scientific Awards, Grants

2009. Géza Grünwald Commemorative Prize

2013–2016. OTKA (Hungarian National Scientific Fund) Postdoctoral Grant

2016–2019. Bolyai scholarship

2020. Pál Turán prize

2021. Rényi prize

Publications

BOOK

D. Gerbner, B. Patkós, Extremal Finite Set Theory, Chapman and Hall/CRC, (2018) 336 pages.

PAPERS

1. D. Gerbner, Egy extremális probléma, *Matematikai Lapok* 2000–2001/2 (2005), 5–12.

2. A. Bernáth, D. Gerbner, Chain intersecting set families, *Graphs and Combinatorics, 23 (2007), no. 4, 353–366.*

3. D. Gerbner, B. Patkós, l-chain profile vectors, *SIAM J. Discrete Math. 22 (2008), no. 1, 185–193.*

4. D. Gerbner, B. Patkós, Profile vectors in the lattice of subspaces, *Discrete Mathematics, 309 (2009), no. 9, 2861–2869*

5. D. Gerbner, D. Pálvölgyi, B. Patkós, G. Wiener, Finding the maximum and minimum elements with one lie, *Discrete Appl. Math. 158 (2010), no. 9, 988–995.*

6. D. Gerbner, B. Keszegh, N. Lemons, B. Patkós, C. Palmer, D. Pálvölgyi, Polychromatic colorings of arbitrary rectangular partitions, *Discrete Mathematics 310 (2010), no. 1, 21–30*

7. D. Gerbner, N. Lemons, B. Patkós, C. Palmer, V. Szécsi, Cross-Sperner families, *Studia Sci. Math. 49 (2012), 44–51.*

8. P.L. Erdős, D. Gerbner, N. Lemons, D. Mubayi, C. Palmer, B. Patkós, Two-part set systems *Electronic Journal of Combinatorics 19 (2012) P52, 10pp.*

9. D. Gerbner, B. Keszegh, C. Palmer, Generalizations of the Tree Packing Conjecture, *Discussiones Mathematicae Graph Theory 32 (2012) 569–582.*

10. D. Gerbner, B. Keszegh, Path-search in the pyramid and in other graphs, *Journal of Statistical Theory and Practice 6 (2012) 303–314.*

11. D. Gerbner, N. Lemons, C. Palmer, B. Patkós, V. Szécsi, Almost intersecting families of sets *SIAM J. Discrete Math. 26 (2012) 1657–1699.*

12. D. Gerbner, G.O.H. Katona, D. Pálvölgyi, B. Patkós, Majority and plurality problems, *Discrete Applied Mathematics, 161 (2013) 813–818.*

13. D. Gerbner, N. Lemons, C. Palmer, D. Pálvölgyi, B. Patkós, V. Szécsi, Almost Cross-Intersecting and Almost Cross-Sperner Pairs of Families of Sets *Graphs and Combinatorics 29 (2013) 489–498.*

14. D. Gerbner, B. Keszegh, N. Lemons, C. Palmer, D. Pálvölgyi, B.Patkós, Saturating Sperner Families, *Graphs and Combinatorics, 29 (2013) 1355–1364.*

15. D. Gerbner, B. Keszegh, D. Pálvölgyi, G. Wiener, Density-based group testing, *Information Theory, Combinatorics and Search Theory, in Memory of Rudolf Ahlswede, LNCS 7777 (2013) 543–556.*

16. D. Gerbner, Profile polytopes of some classes of families, *Combinatorica 33 (2013) 199–216.*

17. D. Gerbner, G. Tóth, Separating families of convex sets, *Computational Geometry 46 (2013) 1056–1058.*

18. D. Gerbner, The Magnus-Derek game in groups, *Discrete Mathematics and Theoretical Computer Science 15 (2013) 119–126.*

19. J. Balog, J. Barát, D. Gerbner, A. Gyárfás, G. Sárközy, Partitioning edge-2-colored graphs by monochromatic paths and cycles, *Combinatorica 34 (2014) 507–526.*

20. J. Barát, D. Gerbner, Edge-decomposition of graphs into copies of a tree with four edges, *Electronic J. of Combinatorics 21 (2014) paper 1.55, 11 pages*

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23. Z. Füredi, D. Gerbner, M. Vizer, A discrete isodiametric result: the Erdős-Ko-Rado theorem for multisets, *European J. Combin. 48 (2015) 224–233.*

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26. D. Gerbner, A. Methuku, C. Tompkins, Intersecting P-free families, *Journal of Combinatorial Theory Series A, 151, (2017) 61 – 83.*

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32. F. Benevides, D. Gerbner, C. Palmer, D. Vu, Identifying defective sets using queries of small size, *Discrete Mathematics, 341(1) (2018) 143–150.*

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36. D. Gerbner, A. Methuku, M. Vizer, Asymptotics for the Turán number of Berge-$K_{2,t}$, *JCTB, 137 (2019), 264–290.*

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60. D. Gerbner, B. Patkós, Zs. Tuza, M. Vizer: On saturation of Berge hypergraphs, *European Journal of Combinatorics 102 (2022), 103477*

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77. D. Gerbner, A. Methuku, D.T. Nagy, D. Pálvölgyi, G. Tardos, M. Vizer: Turán problems for edge-ordered graphs, *JCTB, 160, 66-113, 2023*

78. D. Gerbner: Generalized Turán problems for small graphs, *DMGT, 43(2) (2023) 549-572*

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80. D. Gerbner: Generalized Turán problems for $K_{2,t}$, *Electronic J. Comb, 30(1), 2023, P1.34*

81. D. Gerbner: A non-aligning variant of generalized Turán problems, *Annals of Combinatorics, available online*

82. D. Gerbner, The covering lemma and q-analogues of extremal set theory problems, *Ars Math. Contemp., available online*

83. D. Gerbner: Some stability and exact results in generalized Turán problems, *STUDIA SCI. MATH. HUNGARICA, accepted*

84. D. Gerbner, Between the deterministic and non-deterministic query complexity, *submitted*

85. D. Gerbner, B. Patkós, Zs. Tuza, M. Vizer: Some exact results for regular Turán problems, *submitted*

86. D. Gerbner: Counting multiple graphs in generalized Turán problems, *submitted*

87. D. Gerbner, D.T. Nagy, B. Patkós, M. Vizer, Supersaturation, counting, and randomness in forbidden subposet problems, *submitted*

88. D. Gerbner, D.T. Nagy, B. Patkós, N. Salia, M. Vizer: Stability of extremal connected hypergraphs avoiding Berge-paths, *submitted*

89. D. Gerbner, B. Patkós: Generalized Turán results for intersecting cliques, *submitted*

90. D. Gerbner: The profile polytope of non-trivial intersecting families, *submitted*

91. D. Gerbner: The Turán number of Berge book hypergraphs, *submitted*

92. D. Gerbner: A note on the number of triangles in graphs without the suspension of a path on four vertices, *submitted*

93. D. Gerbner: Paths are Turán-good, *submitted*

94. X. Zhu, Y. Chen, D. Gerbner, E. Győri, H. Hama Karim: The maximum number of triangles in F_k-free graphs, *submitted*

95. D. Gerbner: On weakly Turán-good graphs, *submitted*

96. D. Gerbner: Some exact results for non-degenerate generalized Turán problems, *submitted*

97. D. Gerbner: On the extremal graphs in generalized Turán problems, *submitted*

98. D. Gerbner, B. Keszegh, D. Lenger, D.T. Nagy, D. Pálvölgyi, B. Patkós, M. Vizer, G. Wiener: On graphs that contain exactly k copies of a subgraph, and a related problem in search theory, *submitted*

99. D. Gerbner: Rainbow copies of F in families of H, *submitted*

100. D. Gerbner: On Turán problems with bounded matching number, *submitted*

101. J. Barát, D. Gerbner, A. Halfpap: On the number of A-transversals in hypergraphs, *submitted*

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103. D. Gerbner, A note on strongly and totally chain intersecting families, *submitted*