

Magnús Már Halldórsson

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Research Interests

Algorithms, Wireless Networks, Distributed Computing, Combinatorics, Bioinformatics.

Education

- Rutgers University** New Brunswick, NJ
Ph.D. in Computer Science, September 1986 to June 1991
Thesis title: *Frugal Methods for the Independent Set and Graph Coloring Problems*
Thesis advisor: Ravi Boppana
- University of Oregon** Eugene, OR
B.S. in Computer Science, and in Mathematics, September 1982 to June 1985
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Experience

Academic

- School of Computer Science, Reykjavik University** Reykjavik
Professor, August 2007 –
- Department of Computer Science, University of Iceland** Reykjavik
Professor, Dec 2001 – July 2007
- Institutt for Informatikk, University of Bergen** Bergen, Norway
Adjunct Professor II, Feb 1997 – July 2000
- Science Institute** Reykjavik
Research Professor, June 1998 – December 2000
- Science Institute** Reykjavik
Research Associate Professor, July 1995 – May 1998
- Japan Advanced Institute of Science and Technology** Ishikawa, Japan
Visiting Associate Professor, April 1992 – March 1995
- Tokyo Institute of Technology** Tokyo, Japan
Visiting Assistant Professor, August 1991 – March 1992

Industry

- Iceland Genomics Corp. (UVS)** Reykjavik
Director of Informatics, Jan 2001 – Feb 2004
- Kristjan O Skagfjord** Reykjavik
Software Consultant, June 1985 – August 1986, and summers of 1984, 1987

Long-Term Visiting and Affiliate Appointments

- Research Institute for Mathematical Sciences** Kyoto, Japan
Visiting Professor, April – July 2015
- Research Institute for Mathematical Sciences** Kyoto, Japan
Visiting Professor, Dec. 2008 – March 2009

Graduate School of Informatics, Kyoto University
Visiting Professor, April – June 2007

Kyoto, Japan

Department of Information Science, Tokyo Institute of Technology
Visiting Professor, December 2004 – March 2005

Tokyo, Japan

Graduate School of Informatics, Kyoto University
Visiting Professor, July – December 1999

Kyoto, Japan

Max Planck Institut fuer Informatik
Visiting Scientist, May – June 1995

Saarbruecken, Germany

Students Advised

- 2012-15 Marijke Bodlaender, Ph.D. studies, Reykjavik University.
- 2013 Hörður I. Björnsson, M.S., Reykjavik University.
- 2009 Elena Losievskaja, Ph.D., Reykjavik University.
- 2009 Unnar Th. Bachmann, M.S., Reykjavik University.
- 2009 Enrico Rossomando, M.S., University of Salerno.
- 2006 Ragnar Karlsson, M.S., University of Iceland.
- 2005 Haukur Thorgeirsson, M.S., University of Iceland.
- 2005 Ymir Vigfusson, B.S. honors project, University of Iceland.

Ph.D. Committee Membership and Evaluation

- 2015 Fabian Fuchs, Karlsruhe Institute of Technology (reviewer).
- 2014 Dongxiao Yu, University of Hong Kong (examiner).
- 2013 Christian Konrad, Université Paris Sud (committee member).
- 2013 Yuli Ye, University of Toronto (examiner).
- 2012 Kristján Valur Jónsson, Reykjavik University (committee member).
- 2012 Thomas Kesselheim, TU Aachen (examiner).
- 2008 Pascal von Rickenbach, ETH Zurich (committee member).
- 2007 Gwenaël Joret, Université Libre de Bruxelles (committee member).
- 2004 Petteri Sevon, Helsinki University (evaluator).
- 2004 Daniel Kral', Charles University (opponent).
- 2001 Anna Östlin, Lund University (opponent).

Domestic Professional Activities

Board member Icelandic Research Fund, 2012. Vice-board member, 2009 – 2011.

Treasurer Science Society of Iceland, 2011 – 2014.

Member of evaluation board Research Fund, Icelandic Research Council, 2003–2006, Informatics Fund 2003, 2004, Technology Fund, 2002–2003.

Member Education Council, Icelandic Society of Computer Scientists, 2005 – 2012.

Editorial Work

Member of Editorial Board *Interdisciplinary Information Sciences* (Journal), 2013 –

Associate Editor *Discrete Optimization* (Journal), 2014 – 2017

Managing editor *Discrete Mathematics and Theoretical Computer Science* (Journal), dmtcs.loria.fr, 2004 – 2013.

Guest Editor Special issue of *Information and Computation* on ICALP 2015. To appear.

Guest Editor Special issue of *Theoretical Computer Science* on SIROCCO 2014 (Volume 608 Part 3, December 2015).

Guest Editor Special issue of *Theoretical Computer Science* on SIROCCO 2012 (Volume 610, Part B, 11 January 2016)).

Guest Editor Special issue of *Theoretical Computer Science* on *Algosensors* 2011 and 2012 (Vol. 553, Issue 1, 2014).

Guest Editor Special issue of *Algorithmica* of selected papers of *European Symposium on Algorithms* 2011 (Volume 67, Issue 4, 2013.)

Guest Editor Special issue of *Nordic Journal of Computing* of selected papers of the *7th Scandinavian Workshop on Algorithm Theory (SWAT)* 2000, Volume 7, Number 2, Fall 2000.

Awards

2017 Best paper award at 44th International Colloquium on Automata, Languages, and Programming (ICALP), Track C.

2017 Best paper award at 24th International Colloquium on Structural Information and Communication Complexity (SIROCCO).

2012 Grant-of-excellence awarded by the Icelandic Research Fund (the only one that year).

2010 Reykjavik University Research Award (first awardee).

2001 Young Scientist Award of the Icelandic Research Council (RANNIS).

1998 Carl Erik-Fröberg Prize for a young author of a distinguished paper published in the *Nordic Journal of Computing* in 1994-96.

1992 *Best Paper Award* at the 3rd International Symposium of Algorithms and Computation (ISAAC) in Nagoya, Japan (sole winner).

Conference Organization

Program Committee Chair

- ICALP 2015, Track C (Int'l Conference on Automata, Languages and Programming)
- SIROCCO 2014 (Int'l Colloq. on Structural Information and Communic. Complexity)
- ALGOSENSORS 2012, Track B (Int'l Symp. on Algorithms for Sensor Systems, Wireless Ad Hoc Networks and Autonomous Mobile Entities)
- SIROCCO 2012 (co-chair)
- ESA 2011, Track A (European Symposium on Algorithms)
- NHC 2005 (New Horizons in Computing)
- SWAT 2000 (Scandinavian Symposium and Workshops on Algorithm Theory)

Organizing Committee Chair

- SWAT 2016
- SIROCCO 2012
- ICALP 2008
- SWAT 1996

Conference Chair

- PODC 2014 (ACM Symposium on Principles of Distributed Computing)

Steering Committee Member

- EATCS Council, 2015 – current
- SIROCCO, 2014 – current
- ALGOSENSORS, 2013 – current
- SWAT, 2003 – current; **chair** since 2007
- PODC, 2012 – 2014
- ESA, 2010 – 2013

Program Committee Member

- SenSys 2017 (ACM Conference on Embedded Networked Sensor Systems)
- PODC 2017
- MobiHoc 2017, 2016, 2015 (ACM Int'l Symp. Mobile Ad-hoc Networking and Computing)
- COCOON 2017 (Int'l Computing and Combinatorics Conference)
- IPDPS 2017 (IEEE Int'l Parallel and Distributed Processing Symp.)
- DISC 2016 (International Symposium on Distributed Computing)
- ALGOSENSORS 2016, 2011, 2008
- IPSN 2016, 2015 (Int'l Conf. on Info. Processing in Sensor Netw.)
- SPAA 2016, 2013 (Symposium on Parallelism in Algorithms and Architectures)
- SSS 2015 (Int' Symp. on Stabilization, Safety and Security of Distributed Systems)
- SWAT 2014, 2004, 1996
- ICALP, Track C, 2014, 2012
- FOMC 2013 (ACM Workshop on Foundations of Mobile Computing)
- WG 2012, 2007 (Int'l Workshop on Graph-Theoretic Concepts in Computer Science)
- ISAAC 2011, 2007 (Int'l Symposium on Algorithms and Computation)
- APPROX 2010, 2009, 2006, 1998 (Int'l Wkshop on Approx. Alg. for Combin. Optimiz. Problems)
- FUN in Algorithms 2010
- ICDCN 2009 (Int'l Conference on Distributed Computing and Networking)
- ESA 2006 (European Symposium on Algorithms)
- SODA 2005 (SIAM-ACM Symposium on Discrete Algorithm)
- W-MAN 2005 (Algorithms for Wireless, Mobile, Ad Hoc and Sensor Networks)
- A_SWAN 2004 (AlgorithmS for Wireless And mobile Networks)
- FSTTCS 2003 (Foundations on Software Technology and Theoretical Computer Science)
- FCT 2003 (Foundations of Computation Theory)
- WADS 2001 (Workshop on Algorithms and Data Structures)
- NordSec 2000 (Nordic Workshop on Secure IT Systems)

Workshop Founder and Organizer

- Workshop on Realistic Algorithmic Models for Wireless Networks (WRAWN), 2010– 2016.

Co-Organization of Workshops and Programs

- Dagstuhl Seminar 32-0616, “Scheduling”, Mar 2018.

- Dagstuhl Seminar 17271, “Foundations of Wireless Networking”, July 2017.

- Semester-long program on “Graphs, Hypergraphs and Computing” at the Mittag-Leffler Institute, Jan–May 2014

- Dagstuhl Seminar 14051, “Algorithms for Wireless Communication”, Jan 2014.

Organizing Committee Member

- MatchUp Workshop 2008

- NordSec 2007

- EURO XXI (European Conference on Operational Research) 2006

Invited Plenary Talks

2016 International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt), Tempe, Arizona, May 2016.

2016 British Colloquium on Theoretical Computer Science (BCTCS), Belfast, UK, March 2016.

2015 Workshop Cycles and Colourings, High Tatras, Slovakia, September 2015.

2015 41st International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM), Czech Republic, January 2015.

2013 ALGO plenary, 9th International Symposium on Algorithms and Experiments for Sensor Systems, Wireless Networks and Distributed Robotics (ALGOSENSORS), Sophia Antipolis, September 2013.

2013 11th Workshop on Models and Algorithms for Planning and Scheduling Problems (MAPSP), Pont à Mousson, France, June 2013.

2013 6th Annual Meeting of the Asian Association of Algorithms and Complexity (AAAC), Matsushima, Japan, April 2013.

2013 18th Estonian Winter School in Computer Science (EWSCS), March 2013.

2012 Network Science Workshop, City University of Hong Kong, July 2012.

2011 Dagstuhl Seminar on “Packing and Scheduling Algorithms for Information and Communication Services”, February 2011 (Invited tutorial).

2010 10th Nordic Combinatorics Conference, Reykjavik, May 2010.

2010 Dagstuhl Seminar on “Flexible Network Design”, May 2010 (Invited tutorial).

2006 Autumn School, New Horizons in Computing, Nagoya, Japan, November 2006.

2006 Conference on New Horizons in Computing, Tokyo, Japan, March 2006.

2004 29th International Symposium on Mathematical Foundations of Computer Science (MFCS), Prague, Czech Republic, August 2004.

1998 1st International Workshop on Approximation Algorithms (APPROX), workshop, Aalborg, Denmark, June 18-19, 1998.

1993 16th Symposium on Information Theory and Its Application (SITA), Kanazawa, Oct 1993.

List of Publications

Refereed Journal Publications

1. Ravi B. Boppana and Magnús M. Halldórsson. Approximating maximum independent sets by excluding subgraphs. *BIT*, 32(2):180–196, June 1992.
2. Magnús M. Halldórsson. A still better performance guarantee for approximate graph coloring. *Information Processing Letters*, 45:19–23, 25 January 1993.
3. Magnús M. Halldórsson. Approximating the minimum maximal independence number. *Information Processing Letters*, 46:169–172, 25 June 1993.
4. Esther Arkin, Magnús M. Halldórsson, and Refael Hassin. Approximating the tree and tour covers of a graph. *Information Processing Letters*, 47:275–282, 18 October 1993.
5. Magnús M. Halldórsson and Mario Szegedy. Lower bounds for on-line graph coloring. *Theoretical Computer Science*, 130:163–174, August 1994.
6. Magnús M. Halldórsson and Jaikumar Radhakrishnan. Improved approximations of bounded-degree independent sets via subgraph removal. In a special issue of *Nordic J. Computing*, 1(4):475–492, Winter 1994. Received the *Carl-Erik Fröberg Award*.
7. Magnús M. Halldórsson and Jaikumar Radhakrishnan. Greed is good: approximating independent sets in sparse and bounded-degree graphs. *Algorithmica* 18:145–163, 1997.
8. Magnús M. Halldórsson. Parallel and online graph coloring. *Journal of Algorithms*, 23:265–280, 1997.
9. Magnús M. Halldórsson and Hoong-Chuin Lau. Low-degree Graph Partitioning via Local Search with Applications to Constraint Satisfaction, Max Cut, and 3-Coloring. *Journal of Graph Algorithms and Applications*, 1(3):1–13, Nov. 1997.
10. Amotz Bar-Noy, Mihir Bellare, Magnús M. Halldórsson, Hadas Shachnai, and Tami Tamir. On Chromatic Sums and Distributed Resource Allocation. *Information and Computation*, 140(2), February 1998.
11. Magnús M. Halldórsson, Shuichi Ueno, Hiroshi Nakao, and Yoji Kajitani. Approximating Steiner trees in graphs with restricted weights. *Networks* 31(4), 283–292, 1998.
12. Magnús M. Halldórsson, Kazuo Iwano, Naoki Katoh, and Takeshi Tokuyama. Finding Subsets Maximizing Minimum Structures. *SIAM Journal of Discrete Math* 12(3), 342–359, 1999.
13. Amotz Bar-Noy, Magnús M. Halldórsson, Guy Kortsarz. A Matched Approximation Bound for the Sum of a Greedy Coloring. *Information Processing Letters* 71, 135–140, 1999.
14. Tatsuya Akutsu and Magnús M. Halldórsson. On the approximation of largest common point sets and largest common subtrees. *Theoretical Computer Science* 233(1-2), 33–50, 17 Dec 1999.
15. Magnús M. Halldórsson, Jan Kratochvíl, and Jan Arne Telle. Independent sets with domination constraints. *Discrete Applied Mathematics* 99(1-3), 39–54, 17 Dec 1999.
URL: <http://www.elsevier.nl/locate/jnlmr/05267>
16. Magnús M. Halldórsson. Online coloring known graphs. *Electronic Journal of Combinatorics*, Feb 2000. URL: <http://www.combinatorics.org>
17. Magnús M. Halldórsson. Approximations of Weighted Independent Set and Hereditary Subset Problems. *Journal of Graph Algorithms and Applications*, 4(1), 1–16, 2000.
18. Amotz Bar-Noy, Magnús M. Halldórsson, Guy Kortsarz, Ravit Salman, and Hadas Shachnai. Sum Multi-Coloring of Graphs. *Journal of Algorithms* 37, 422–450, 2000.
19. Magnús M. Halldórsson, Jan Kratochvíl, and Jan Arne Telle. Mod-2 Independence and Domination in Graphs. *International Journal on Foundations of Computer Science* 11, 355–363, September 2000.

20. Geir Agnarsson, Raymond Greenlaw, Magnús M. Halldórsson. On Powers of Chordal Graphs and Their Colorings. *Congressus Numerantium*, **142–147**, 2000.
21. Barun Chandra and Magnús M. Halldórsson. Approximation Algorithms for Dispersion Problems. *Journal of Algorithms*, **38(2)**, 438–465, February 2001.
22. Barun Chandra and Magnús M. Halldórsson. Greedy local improvement and weighted set packing approximation. *Journal of Algorithms*, **39(2)**, 223–240, May 2001.
23. Bengt Aspvall and Magnús M. Halldórsson and Fredrik Manne. Approximations for the General Block Distribution of a Matrix. *Theoretical Computer Science* **262(1-2)**, 145–160, July 2001.
24. Magnús M. Halldórsson, Guy Kortsarz. Tools for Multicoloring with Applications to Planar Graphs and Partial k -Trees. *Journal of Algorithms*, **42(2)**, 334–366, February 2002.
25. Magnús M. Halldórsson, Kazuo Iwama, Shuichi Miyazaki and Shiro Taketomi. Online Independent Sets. *Theoretical Computer Science*, **289(2)**, 953–962, October 2002.
26. Uriel Feige, Magnús M. Halldórsson, Guy Kortsarz and Aravind Srinivasan. Approximating the domatic number. *SIAM Journal of Computing* **32(1)**, 172–195, December 2002.
27. Magnús M. Halldórsson, Guy Kortsarz, Andrzej Proskurowski, Ravit Salman, Hadas Shachnai, and Jan Arne Telle. Multicoloring Trees. *Information and Computation* **180**, 113–129, Feb 2003.
28. Magnús M. Halldórsson, Robert W. Irving, Kazuo Iwama, David F. Manlove, Shuichi Miyazaki, Yasufumi Morita, and Sandy Scott. Approximability results for the stable marriage problem with ties. *Theoretical Computer Science* 306:431–447, 5 September 2003.
29. Geir Agnarsson, Magnús M. Halldórsson. Coloring Powers of Planar Graphs. *SIAM J. Discrete Math.* 16(4):651–662, 2003.
30. Koen M.J. De Bontridder, Bjarni V. Halldórsson, Magnús M. Halldórsson, Cor A.J. Hurkens, Jan K. Lenstra, R. Ravi, and Leen Stougie. Approximation algorithms for the minimum test set problem. *Mathematical Programming* 98(1-3):477–491, Sept. 2003.
31. Geir Agnarsson, Peter Damaschke, Magnús M. Halldórsson. Powers of Geometric Intersection Graphs and Dispersion Algorithms. *Discrete Applied Mathematics* 132(1-3):3–16, Oct. 2003.
32. Magnús M. Halldórsson, Guy Kortsarz and Hadas Shachnai. Sum Coloring Interval and k -Claw Free Graphs with Application to Scheduling Dependent Jobs. *Algorithmica* 37:187–209, 2003.
33. Magnús M. Halldórsson. Points, lines, random numbers and algorithms. *Journal of physical sciences and mathematics raust.is*, 1(2), 2003. (In Icelandic).
34. Magnús M. Halldórsson, Kazuo Iwama, Shuichi Miyazaki and Hiroki Yanagisawa. Randomized approximation of the stable marriage problem. *Theoretical Computer Science* **325(3)**:439–465, 2004.
35. Artur Czumaj, Magnús M. Halldórsson, Andrzej Lingas, and Johan Nilsson. Approximation algorithms for optimization problems in graphs with superlogarithmic treewidth. *Information Processing Letters*, 2005. **94(2)**:49–53, 30 April 2005.
36. Rajiv Gandhi, Magnús M. Halldórsson, G. Kortsarz and H. Shachnai. Improved results for data migration and open-shop scheduling. *ACM Transactions on Algorithms* Vol 2, No. 1, 116–129, January 2006.
37. Reuven Bar-Yehuda, Seffi Naor, Magnús M. Halldórsson, Hadas Shachnai, and Irina Shapira. Scheduling Split Intervals. *SIAM Journal on Computing*, Vol. 36, No. 1, 1–15, 2006.
38. Magnús M. Halldórsson. Approximating the (h, k) -labelling problem. *Int. J. Mobile Network Design and Innovation*, Vol. 1, No. 2, 113–117, 2006. (Special Issue on W-FAP '05), 2006.
39. Thomas Bataillon, Thomas Mailund, Steinunn Thorlacius, Eiríkur Steingrímsson, Thorunn Rafnar, Magnús M. Halldórsson, Violeta Calian, Mikkel H. Schierup. The effective size of the Icelandic population inferred from unphased microsatellite markers and the prospects for LD mapping. *European Journal of Human Genetics*, Advance online publication 31 May 2006; doi: 10.1038/sj.ejhg.5201669

40. Geir Agnarsson and Magnús M. Halldórsson. Strongly simplicial vertices of powers of trees. *Discrete Mathematics* 307:2647–2652, 2007.
41. Magnús M. Halldórsson, Kazuo Iwama, Shuichi Miyazaki and Hiroki Yanagisawa. Improved approximation of the stable marriage problem. *ACM Transactions on Algorithms* 3(3), Article 30, August 2007.
42. Guy Kortsarz, Magnús M. Halldórsson, Jaikumar Radhakrishnan and Sivaramakrishnan Sivasubramanian. Complete Partitions of Graphs. *Combinatorica*, 27(5), 2007.
43. Geir Agnarsson, Ágúst Egilsson, Magnús M. Halldórsson. Vertex coloring acyclic digraphs and their corresponding hypergraphs. *Discrete Applied Mathematics*, 156(10):1918–1928, 28 May 2008.
44. Rajiv Gandhi, Magnús M. Halldórsson, G. Kortsarz and H. Shachnai. Improved bounds for scheduling conflicting jobs with minsum criteria. *ACM Transactions on Algorithms* 4(1), Article 11, March 2008.
45. Magnús M. Halldórsson, Takeshi Tokuyama. Minimizing Interference of a Wireless Ad-Hoc Network in a Plane. *Theoretical Computer Science*, 402(1):29–42, 28 July 2008.
<http://dx.doi.org/10.1016/j.tcs.2008.03.003>.
46. Akihisa Kako, Takao Ono, Tomio Hirata, and Magnús M. Halldórsson. Approximation Algorithms for the Weighted Independent Set Problem. *Disc. Appl. Math.* 157(4):617–626, February 2009.
47. Guy Even, Magnús M. Halldórsson, Lotem Kaplan, Dana Ron. Scheduling with Conflicts: Online and Offline Algorithms. *J. Scheduling*, 12(2):199–224, April 2009.
48. Magnús M. Halldórsson, Elena Losievskaja Independent sets in bounded-degree hypergraphs *Disc. Appl. Math.* 157(8):1773–1786, April 2009.
49. Leah Epstein, Magnús M. Halldórsson, Asaf Levin, Hadas Shachnai. Weighted Sum Coloring in Batch Scheduling of Conflicting Jobs. *Algorithmica* 55(4):643–665, Dec 2009.
50. Magnús M. Halldórsson. Online coloring of hypergraphs. *Information Processing Letters* 110:370–372, 2010.
51. Magnús M. Halldórsson, Joseph Y. Halpern, Li (Erran) Li, Vahab S. Mirrokni. On Spectrum Sharing Games. *Distributed Computing* 22(4):235–248, 2010.
52. Geir Agnarsson and Magnús M. Halldórsson. Vertex coloring the square of outerplanar graphs of low degree. *Discussiones Mathematicae Graph Theory* 30(4):619–636, 2010.
53. Magnús M. Halldórsson, Guy Kortsarz, Maxim Sviridenko. Min Sum Edge Coloring in General Multigraphs via Configuration LP. *ACM Transactions on Algorithms* 7(2), Article 22, March 2011.
54. Yuval Emek, Magnús M. Halldórsson, Yishay Mansour, Boaz Patt-Shamir, Jaikumar Radhakrishnan, Dror Rawitz. Online set packing. *SIAM Journal of Computing*, 41(4):728–746, 2012.
55. Magnús M. Halldórsson. Wireless scheduling with power control. *ACM Transactions on Algorithms*, 9(1):7, December 2012.
56. Geir Agnarsson, Magnús M. Halldórsson, Elena Losievskaja. SDP-based Algorithms for Maximum Independent Set Problems on Hypergraphs *Theoretical Computer Science*, 470:1–9, 2013.
57. Tatsuya Akutsu, Daiji Fukagawa, Magnús M. Halldórsson, Atsuhiko Takasu, Keisuke Tanaka. Approximation and Parameterized Algorithms for Common Subtrees and Edit Distance between Unordered Trees. *Theoretical Computer Science*, 470:10–22, 2013.
58. Magnús M. Halldórsson, Boaz Patt-Shamir, Dror Rawitz. Scheduling with interval conflicts. *Theory of Computing Systems* 53(2):300–317, August 2013. Special issue of STACS 2011.
59. Rajiv Gandhi, Magnús M. Halldórsson, G. Kortsarz and H. Shachnai. Corrigendum: Improved bounds for scheduling conflicting jobs with minsum criteria. *ACM Transactions on Algorithms* 9(4), Article 34, September 2013.

60. Unnar Th. Bachmann, Magnús M. Halldórsson, Hadas Shachnai. Online selection of intervals and t -intervals. *Information and Computation* 233:1–11, December 2013.
61. Olga Goussievskaia, Magnús M. Halldórsson, Roger Wattenhofer. Algorithms for wireless capacity. *IEEE/ACM Transactions on Networking*, 2(3):745–755, June 2014.
62. Magnús M. Halldórsson, Pradipta Mitra. Wireless Capacity With Arbitrary Gain Matrix. *Theoretical Computer Science*, 553:57–63, 2014.
63. Jørgen Bang-Jensen, Magnús M. Halldórsson. A Note on Vertex Coloring Edge-Weighted Digraphs. *Information Processing Letters* 115(10):791–796, October 2015.
64. Pierluigi Crescenzi, Pierre Fraigniaud, Magnús M. Halldórsson, Hovhannes A. Harutyunyan, Chiara Pierucci, Andrea Pietracaprina, Geppino Pucci. On the complexity of the shortest-path broadcast problem. *Discrete Applied Mathematics* 199:101–109, 30 January 2016.
65. Magnús M. Halldórsson, Sergey Kitaev, Artem Pyatkin. Semi-Transitive Orientations and Word-Representable Graphs. *Discrete Applied Mathematics* 201:164–171, March 2016.
66. Pierre Fraigniaud, Magnús M. Halldórsson, Boaz Patt-Shamir, Dror Rawitz, Adi Rosen. Shrinking Maxima, Decreasing Costs: New Online Packing and Covering Problems. *Algorithmica* 74(4):1205–1223, April 2016.
67. Magnús M. Halldórsson, Pradipta Mitra. Nearly Optimal Bounds for Distributed Wireless Scheduling in the SINR Model. *Distributed Computing* 29(2):77–88, April 2016.
68. Bjarni V. Halldórsson, Magnús M. Halldórsson, Elena Losievskaja, and Mario Szegedy. Streaming algorithms for independent sets in sparse hypergraphs. *Algorithmica* 76(2):490–501, 2016.
69. Yuval Emek, Magnús M. Halldórsson, Adi Rosen. Space-Constrained Interval Selection. *ACM Transactions on Algorithms (TALG)* 12(4), September 2016.
70. Yusuke Aoki, Bjarni V. Halldórsson, Magnús M. Halldórsson, Takehiro Ito, Christian Konrad, Xiao Zhou. The Minimum Vulnerability Problem on Special Graph Classes. *Journal of Combinatorial Optimization* 32(4):1288–1304, 2016.
71. Daniele Catanzaro, Steven Chaplick, Stefan Felsner, Bjarni V. Halldórsson, Magnús M. Halldórsson, Thomas Hixon, Juraj Stacho. Max Point-Tolerance Graphs. *Discrete Applied Mathematics* 216(1):84–97, January 2017.
72. Magnús M. Halldórsson, Christian Konrad. Distributed Large Independent Sets in a Single Round. *Distributed Computing*, appeared online 24 Mar 2017.
73. Magnús M. Halldórsson, Stephan Holzer, Pradipta Mitra, Roger Wattenhofer. The Power of Non-Uniform Wireless Power. *SIAM Journal of Computing*, to appear, 2017.
74. Magnús M. Halldórsson, Sven Köhler, Boaz Patt-Shamir, Dror Rawitz. Distributed Backup Placement in Networks. *Distributed Computing*, appeared online 3 June 2017. DOI:10.1007/s00446-017-0299-x.

Edited Books

1. Magnús M. Halldórsson M. M. Halldórsson (Ed). Algorithm Theory – SWAT 2000. Proceedings of 7th Scandinavian Workshop on Algorithm Theory, Bergen, Norway, July 2000.
2. L. Aceto, I. Damgård, L. A. Goldberg, M. M. Halldórsson, A. Ingólfssdóttir, I. Walukiewicz (Eds). *Automata, Languages and Programming*, 35th International Colloquium, ICALP 2008, Reykjavik, Iceland, July 7-11, 2008, Proceedings, Part I: Track A: Algorithms, Automata, Complexity, and Games. Springer LNCS # 5125. ISBN 978-3-540-70574-1, 2008.
3. L. Aceto, I. Damgård, L. A. Goldberg, M. M. Halldórsson, A. Ingólfssdóttir, I. Walukiewicz (Eds). *Automata, Languages and Programming*, 35th International Colloquium, ICALP 2008, Reykjavik, Iceland, July 7-11, 2008, Proceedings, Part II: Track B: Logic, Semantics, and Theory of Programming & Track C: Security and Cryptography Foundations. Springer LNCS # 5126. ISBN 978-3-540-70582-6, 2008.

4. C. Demetrescu, M. M. Halldórsson (Eds). *Algorithms* – ESA 2011: 19th Annual European Symposium, Saarbrücken, Germany, September 2011. Springer LNCS #6942.
5. G. Even, M. M. Halldórsson (Eds). *Structural Information and Communication Complexity*, 19th International Colloquium, SIROCCO 2012, Reykjavik, Iceland, June 30 – July 2, 2012. Springer LNCS # 7355.
6. A. Bar-Noy, M. M. Halldórsson (Eds). *Algorithmic Aspects of Wireless Sensors Networks, ALGOSENSORS 2012*, Ljubljana, Slovenia, October 13-14, 2012. Springer LNCS # 7718.
<http://dx.doi.org/10.1007/978-3-642-36092-3>
7. M. M. Halldórsson (Ed). *Structural Information and Communication Complexity*, 21st International Colloquium, SIROCCO 2014, Takayama, Japan, July 23–25, 2014. Springer LNCS # 8576.
8. Magnús M. Halldórsson, Shlomi Dolev (Eds.) *ACM Symposium on Principles of Distributed Computing, PODC '14*, Paris, France, July 15-18, 2014. ACM 2014, ISBN 978-1-4503-2944-6
9. M. M. Halldórsson, Kazuo Iwama, Naoki Kobayashi, Bettina Speckmann (Eds.) *ICALP 2015*, Kyoto, Japan, July 5-11, 2015, Proceedings, Part I: Track A: Algorithms, Automata, Complexity, and Games. Springer LNCS # 9134, 2015.
10. M. M. Halldórsson, Kazuo Iwama, Naoki Kobayashi, Bettina Speckmann (Eds.) *ICALP 2015*, Kyoto, Japan, July 5-11, 2015, Proceedings, Part II: Tracks B and C: Logic and Semantics; Foundations of Networked Computation Springer LNCS # 9135, 2015.

Refereed Conference Publications

1. Ravi B. Boppana and Magnús M. Halldórsson. Approximating maximum independent sets by excluding subgraphs. In *Proc. of 2nd Scand. Workshop on Algorithm Theory (SWAT)*. Springer Lecture Notes in Computer Science (LNCS) #447, pages 13–25, Bergen, Norway, July 1990.
2. Magnús M. Halldórsson and Mario Szegedy. Lower bounds for on-line graph coloring. In *Proc. of 3rd SIAM/ACM Symposium on Discrete Algorithms (SODA)*, Orlando, Florida, pages 211–216, January 1992.
3. Magnús M. Halldórsson, Shuichi Ueno, Hiroshi Nakao, and Yoji Kajitani. Approximating Steiner trees in graphs with restricted weights. In *Proc. of 1st Asia-Pacific Conference on Circuits and Systems (APC-CAS)*, pages 69–73, Sidney, Australia, December 1992.
4. Magnús M. Halldórsson. Parallel and on-line graph coloring. In *Proc. of 3rd International Symposium on Algorithms and Computation (ISAAC)*, pages 61–70, Nagoya, Japan, December 1992. Springer LNCS #650. Received the *Best Paper Award*.
5. Magnús M. Halldórsson, K. V. Subrahmanyam, and Jaikumar Radhakrishnan. Directed vs. undirected monotone contact networks for threshold functions. In *Proc. 34th Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, pages 604–613, Palo Alto, California, November 1993.
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10. Magnús M. Halldórsson. Approximating Discrete Collections via Local Improvements. In *Proc. of Sixth SIAM/ACM Symposium on Discrete Algorithms (SODA)*, pages 160–169, San Francisco, January 1995.
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25. Geir Agnarsson, Magnús M. Halldórsson. Coloring Squares of Planar Graphs. In *Proc. Eleventh SIAM Symposium on Discrete Algorithm (SODA)*, San Fransisco, January 2000.
26. Uriel Feige and Magnús M. Halldórsson and Guy Kortsarz. Approximating the domatic number. In *Proc. 32nd Annual Symposium on Theory of Computing (STOC)*, Portland, Oregon, May 2000.

27. Magnús M. Halldórsson, Kazuo Iwama, Shuichi Miyazaki and Shiro Taketomi. Online Independent Sets. In *Proc. COCOON '00*, Sidney, Australia, Springer LNCS # 1858, August 2000.
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33. Geir Agnarsson, Peter Damaschke, Magnús M. Halldórsson. Powers of Geometric Intersection Graphs and Dispersion Algorithms. In *Proceedings of the Eighth Scandinavian Workshop on Algorithm Theory (SWAT)*, Tampere, Finland, July 2002. Springer LNCS # 2368.
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37. Geir Agnarsson, Ágúst Egilsson, Magnús M. Halldórsson. Proper down-coloring of simple acyclic digraphs. *Proceedings of Applications of Graph Transformations with Industrial Relevance – Second International Workshop, AGTIVE 2003*, Charlottesville, VA, USA, September 27 - October 1, 2003, Springer LNCS # 3062, May 2004.
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40. Geir Agnarsson and Magnús M. Halldórsson. Strong colorings of hypergraphs. In *Proc. 2nd Workshop on Approximation and Online Algorithms (WAOA)*, Bergen, Norway, September 2004. Springer LNCS # 3351.
41. Rajiv Gandhi, Magnús M. Halldórsson, G. Kortsarz and H. Shachnai. Improved Bounds for Sum Multicoloring and Weighted Completion Time of Dependent Jobs. In *Proc. 2nd Workshop on Approximation and Online Algorithms (WAOA)*, Bergen, Norway, September 2004. Springer LNCS # 3351.

42. Akihisa Kako, Takao Ono, Tomio Hirata, and Magnús M. Halldórsson. Approximation Algorithms for the Weighted Independent Set Problem. In *Proc. 31st International Workshop on Graph-Theoretic Concepts in Computer Science (WG '05)*, Metz, France, June 2005. Springer LNCS # 3787.
43. Magnús M. Halldórsson, Ragnar K. Karlsson. On split interval graphs and scheduling. In *Proc. 32nd International Workshop on Graph-Theoretic Concepts in Computer Science (WG 2006)*, Bergen, Norway. Springer LNCS # 4271.
44. Leah Epstein, Magnús M. Halldórsson, Asaf Levin, Hadas Shachnai. Weighted Sum Coloring in Batch Scheduling of Conflicting Jobs. APPROX '06, Barcelona, Spain. Springer LNCS # 4110.
45. Magnús M. Halldórsson, Takeshi Tokuyama. Minimizing Interference of a Wireless Ad-Hoc Network in a Plane In *Proc. 2nd International Workshop, ALGOSENSORS Venice, Italy, July, 2006*, Springer LNCS # 4240.
46. Magnús M. Halldórsson, Elena Losievskaja. Independent sets in bounded-degree hypergraphs. In *Proc. of 10th Int'l Workshop on Algorithms and Data Structures (WADS)*, Halifax, Canada, August 2007. Springer LNCS #4619.
47. M. M. Halldórsson, C. Knauer, A. Spillner, and T. Tokuyama. Parameterized algorithms and complexity of non-crossing spanning trees. In *Proc. of 10th Int'l Workshop on Algorithms and Data Structures (WADS)*, Halifax, Canada, August 2007. Springer LNCS #4619.
48. Takuro Fukunaga, Magnús M. Halldórsson, Hiroshi Nagamochi. "Rent-or-Buy" scheduling and cost coloring problems. In *Proc. 27th Int'l Conf. on Foundations of Software Technology and Theoretical Computer Science (FSTTCS)*, New Delhi, India, December 2007. Springer LNCS #4855.
49. Takuro Fukunaga, Magnús M. Halldórsson, Hiroshi Nagamochi. Robust Cost Colorings. In *Proc. 18th SIAM-ACM Symposium on Discrete Algorithms (SODA)*, San Fransisco, January 2008.
50. Magnús M. Halldórsson, Guy Kortsarz, Maxim Sviridenko. Min Sum Edge Coloring in General Multigraphs via Configuration LP. In *Proc. 13th Conf. on Integer Programming and Combinatorial Optimization (IPCO)*, Bertinoro, Italy, May 2008. Springer LNCS # 5035.
51. Magnús M. Halldórsson, Hadas Shachnai. Batch Coloring Flat Graphs and Thin. In *Proc. 11th Scandinavian Workshop on Algorithm Theory (SWAT)*, Gothenburg, Sweden, July 2008. Springer LNCS # 5124.
52. Olga Goussievskaja, Magnús M. Halldórsson, Roger Wattenhofer, Emo Welzl. Capacity of arbitrary wireless networks. In *Proc. 28th Annual IEEE Conference on Computer Communications (INFOCOM)*, pages 1872-1880, Rio de Janeiro, Brazil, April 2009.
53. Magnús M. Halldórsson, Roger Wattenhofer. Wireless communications is in APX. In *Proc. 36th International Conference on Automata, Languages, and Programming (ICALP)*, Rhodes, Greece, July 2009. Springer LNCS # 5555.
54. Geir Agnarsson, Magnús M. Halldórsson, Elena Losievskaja. SDP-based Algorithms for Maximum Independent Set Problems on Hypergraphs In *Proc. 36th International Conference on Automata, Languages, and Programming (ICALP)*, Rhodes, Greece, July 2009. Springer LNCS # 5555.
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63. Magnús M. Halldórsson, Sergey Kitaev, Artem Pyatkin. Alternation graphs. In *Proc. 37th Int. Workshop on Graph-Theoretic Concepts in Computer Science (WG)*, Teplá, Czech Republic, June 21-24, 2011. Springer LNCS # 6986
64. Magnús M. Halldórsson, Pradipta Mitra. Nearly Optimal Bounds for Distributed Wireless Scheduling in the SINR Model. In *Proc. 38th International Conference on Automata, Languages, and Programming (ICALP)*, Zürich, Switzerland, July 2011. Springer LNCS 6756.
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68. Eyjólfur I. Ásgeirsson, Magnús M. Halldórsson, Pradipta Mitra. A Fully Distributed Algorithm for Throughput Performance in Wireless Networks. In *Proc. 46th Annual Conf. on Information Sciences and Systems (CISS)*, Princeton, New Jersey, March 2012.
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73. Magnús M. Halldórsson, Pradipta Mitra. Towards Tight Bounds for Local Broadcasting. In *Proc. 8th ACM SIGACT/SIGMOBILE International Workshop on Foundations of Mobile Computing (FOMC)*, Madeira, Portugal, July 2012.
74. Pierre Fraigniaud, Magnús M. Halldórsson, Amos Korman. On the Impact of Identifiers on Local Decision. In *16th International Conference On Principles Of Distributed Systems (OPODIS)*, Rome, Italy, December 17th-21th, 2012.

75. Magnús M. Halldórsson, Stephan Holzer, Pradipta Mitra, Roger Wattenhofer. The Power of Non-Uniform Wireless Power. In *Proc. 24th ACM-SIAM Symposium on Discrete Algorithms (SODA)*, New Orleans, Louisiana, January 2013.
76. Marijke H. L. Bodlaender, Magnús M. Halldórsson, Pradipta Mitra. Connectivity and Aggregation in Multihop Wireless Networks. In *Proc. 32nd ACM Symposium on Principles of Distributed Computing (PODC)*, Montreal, Quebec, July 2013.
77. Pierre Fraigniaud, Magnús M. Halldórsson, Boaz Patt-Shamir, Dror Rawitz, Adi Rosen. Shrinking Maxima, Decreasing Costs: New Online Packing and Covering Problems. In *Proc. 16th. International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX'2013)*, Berkeley, California, August 2013.
78. Eyjólfur I. Ásgeirsson, Magnús M. Halldórsson, Pradipta Mitra. vMaximum MIMO Flow in Wireless Networks under the SINR Model. In *Proc. 12th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOPT)*, Hammamet, Tunisia, May 2014.
79. Marijke H. L. Bodlaender, Magnús M. Halldórsson. Beyond Geometry : Towards Fully Realistic Wireless Models. In *Proc. 33rd ACM Symposium on Principles of Distributed Computing (PODC)*, Paris, France, July 2014.
80. Helga Gudmundsdottir, Eyjólfur I. Ásgeirsson, Marijke H. L. Bodlaender, Joseph T. Foley, Magnús M. Halldórsson, Ymir Vigfusson. Wireless Scheduling Algorithms in Complex Environments. In *Proc. 17th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM)*, Montreal, Canada, September 2014.
81. Magnús M. Halldórsson, Christian Konrad. Distributed Algorithms for Coloring Interval Graphs. In *Proc. 28th International Symposium on Distributed Computing (DISC)*, Austin, Texas, October 2014.
82. Yusuke Aoki, Bjarni V. Halldórsson, Magnús M. Halldórsson, Takehiro Ito, Christian Konrad, Xiao Zhou. The Minimum Vulnerability Problem on Graphs. In *Proc. 8th Annual International Conference on Combinatorial Optimization and Applications (COCOA)*, Maui, Hawaii, December 2014.
83. Magnús M. Halldórsson, Tigran Tonoyan. How Well Can Graphs Represent Wireless Interference? In *Proc. 47th ACM Symposium on Theory of Computing (STOC)*, Portland, Oregon, June 2015.
84. Magnús M. Halldórsson, Sven Köhler, Boaz Patt-Shamir, Dror Rawitz. Distributed Backup Placement in Networks. In *Proc. 27th Annual ACM Symposium on Parallelism in Algorithms and Architecture (SPAA)*, Portland, Oregon, June 2015.
85. Magnús M. Halldórsson, Stephan Holzer, Nancy Lynch. A Local Broadcast Layer for the SINR Network Model. In *Proc. 34th ACM Symposium on Principles of Distributed Computing (PODC)*, San Sebastian, Spain, July 2015.
86. Magnús M. Halldórsson, Yuexuan Wang and Dongxiao Yu. Leveraging Multiple Channels in Ad Hoc Networks. In *Proc. 34th ACM Symposium on Principles of Distributed Computing (PODC)*, San Sebastian, Spain, July 2015.
87. Rajiv Gandhi, Magnús M. Halldórsson, Christian Konrad, Guy Kortsarz, and Hoon Oh. Radio Aggregation Scheduling. In *Proc. ALGOSENSORS*, Patras, Greece, September 2015.
88. Magnús M. Halldórsson, Tigran Tonoyan. Limitations of Current Wireless Scheduling Algorithms. In *Proc. ALGOSENSORS*, Patras, Greece, September 2015.
89. Magnús M. Halldórsson, Christian Konrad. Distributed Large Independent Sets in One Round On Bounded-independence Graphs. In *Proc. 29th International Symposium on Distributed Computing (DISC)*, Tokyo, Japan, October 2015.
90. Magnús M. Halldórsson, Tigran Tonoyan. The Price of Local Power Control in Wireless Scheduling. In *Proc. 35th Int'l Conf. on Foundations of Software Technology and Theoretical Computer Science (FSTTCS)*, Bangalore, India, December 2015.

91. Magnús M. Halldórsson, Sven Köhler, Dror Rawitz. Distributed Approximation of k -Service Assignment. In *Proc. 19th International Conference On Principles Of Distributed Systems (OPODIS)*, Rennes, France, December 2015. LIPcs vol. 46, 2016.
92. Marijke Bodlaender, Magnús M. Halldórsson, Christian Konrad, Fabian Kuhn. Brief Announcement: Local Independent Set Approximation. In *Proc. 35th ACM Symposium on Principles of Distributed Computing (PODC)*, Chicago, July 2016.
93. Magnús M. Halldórsson, Tigran Tonoyan, Yuexuan Wang, Dongxiao Yu. Dynamic Adaptation in Wireless Networks Under Comprehensive Interference via Carrier Sense. In *Proc. 31st International Parallel and Distributed Processing Symposium (IPDPS)*, Florida, May 2017.
94. Magnús M. Halldórsson, Stephan Holzer, Evangelia Anna Markatou. Leader Election in SINR Model with Arbitrary Power Control. In *SIROCCO*, Porquerolles, France, June 2017.
95. Magnús M. Halldórsson and Christian Konrad. Improved Distributed Algorithms for Coloring Interval Graphs with Application to Multicoloring Trees. In *SIROCCO*, Porquerolles, France, June 2017.
96. Eyjólfur I. Ásgeirsson, Magnús M. Halldórsson, Tigran Tonoyan. Universal Framework for Wireless Scheduling Problems. In *Proc. 44th International Conference on Automata, Languages, and Programming (ICALP)*, Warsaw, Poland, July 2017. To appear.
97. Magnús M. Halldórsson, Tigran Tonoyan. Wireless Link Capacity under Shadowing and Fading. In *Proc. Eighteenth International Symposium on Mobile Ad Hoc Networking and Computing (ACM MobiHoc)*, Chennai, July 2017. To appear.
98. Magnús M. Halldórsson, Toshimasa Ishii, Kazuhisa Makino and Kenjiro Takazawa. Posimodular Function Optimization. In *Proc. Algorithms and Data Structures Symposium (WADS)*, St. John's, Canada, July 2017. To appear.

Invited Conference Papers

99. Magnús M. Halldórsson. Approximating independent sets in graphs. Invited paper to *APPROX '98, the First International Workshop on Approximation Algorithms*, Aalborg, Denmark, July 1998. Springer LNCS # 1444, 1–14.
100. Magnús M. Halldórsson. Multicoloring: Problems and Techniques. Invited paper to *MFCS '04, the 29th International Symposium on Mathematical Foundations of Computer Science* Prague, Czech Republic, August 22–27, 2004. Springer LNCS # 3153. ISBN 3-540-22823-3.
101. Magnús M. Halldórsson. Modeling Reality Algorithmically: The Case of Wireless Communication. Invited paper to *Proc. 9th Int. Symp. on Algorithms and Experiments for Sensor Systems, Wireless Networks and Distributed Robotics (ALGOSENSORS)*, Sophia Antipolis, France, September 5–6, 2013. Springer LNCS # 8243, 1–5.
102. Magnús M. Halldórsson. Progress (and Lack Thereof) for Graph Coloring Approximation Problems. Invited paper to *Proc. 41st International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM)*, Pec pod Sněžkou, Czech Republic, Springer LNCS, January 2015.
103. Magnús M. Halldórsson. Invited Paper: Models for Wireless Algorithms. In *Proc. 14th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOPT)*, Tempe, Arizona, May 2016.

Selective Workshop Publications and Brief Announcements

104. Magnús M. Halldórsson and Mario Szegedy. Lower bounds for on-line graph coloring. In *On-Line Algorithms*, Proceedings of a DIMACS Workshop, Piscataway, New Jersey, February 1991, DIMACS Series on Discrete Math and Theoretical Computer Science, Vol. 7, L. McGeoch and D. Sleator, eds., pages 169–179.
105. Magnús M. Halldórsson and Jaikumar Radhakrishnan. Approximating the chromatic sum of a graph. In *6th IEICE Karuizawa Workshop on Circuits and Systems*, Karuizawa, Japan, April 1993.

106. Magnús M. Halldórsson and Jan Arne Telle. Complexity of generalized independent set problems. In *5th Twente Workshop on Graph Theory*, Twente, Holland, May 1997.
107. Ray Greenlaw, Magnús M. Halldórsson, Rossella Petreschi. On Computing Prüfer Codes and Their Corresponding Trees Optimally in Parallel. In *Second International Colloquium Journées de l'Informatique Messine – Algorithmes de graphes Metz*, France, May 2000.
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