

# Magnús Már Halldórsson

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## Research Interests

Algorithms, Distributed Computing, Wireless Networks, Combinatorics

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## Profiles

Scholar: <http://scholar.google.com/citations?user=olerUhcAAAAJ>

DBLP: [https://dblp.uni-trier.de/pers/h/Halld=oacute=rsson:Magn=uacute=s\\_M=.html](https://dblp.uni-trier.de/pers/h/Halld=oacute=rsson:Magn=uacute=s_M=.html)

MathSciNet:

<https://mathscinet.ams.org/mathscinet/search/author.html?mrauthid=278101>

Orcid: <https://orcid.org/0000-0002-5774-8437>

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## 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**

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

**Long-Term Visiting and Affiliate Appointments**

<b>Research Institute for Mathematical Sciences</b> Visiting Professor, April – June 2018	<i>Kyoto, Japan</i>
<b>Research Institute for Mathematical Sciences</b> Visiting Professor, April – July 2015	<i>Kyoto, Japan</i>
<b>Research Institute for Mathematical Sciences</b> Visiting Professor, Dec. 2008 – March 2009	<i>Kyoto, Japan</i>
<b>Graduate School of Informatics, Kyoto University</b> Visiting Professor, April – June 2007	<i>Kyoto, Japan</i>
<b>Department of Information Science, Tokyo Institute of Technology</b> Visiting Professor, December 2004 – March 2005	<i>Tokyo, Japan</i>
<b>Graduate School of Informatics, Kyoto University</b> Visiting Professor, July – December 1999	<i>Kyoto, Japan</i>
<b>Max Planck Institut fuer Informatik</b> Visiting Scientist, May – June 1995	<i>Saarbruecken, Germany</i>

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**Ph.D. Committee Membership and Evaluation**

- 2018 Michał Róžański, University of Wroclaw (reviewer).
- 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).

## 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.
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## 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.
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## 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* (Volume 261, Part 2, August 2018).  
**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.

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## Awards

- 2021 Best paper award at 28th International Colloquium on Structural Information and Communication Complexity (SIROCCO).
- 2020 EATCS Fellow
- 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).

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## 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)

### Conference Chair

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

### Organizing Committee Chair

- SWAT 2016
- SIROCCO 2012
- ICALP 2008 (joint)
- SWAT 1996

### Local Organization Chair

- CTW 2019 (IEEE Communication Theory Workshop)
- MATCH-UP 2008 (1st International Workshop on Matching Under Preferences)

### Steering Committee Member

- SIROCCO, 2014 – 2017, **chair** 2019 –
- SWAT, 2003 – current; **chair** 2007 –
- DCOSS, 2019 – current
- ALGOSENSORS, 2013 – current
- EATCS Council, 2015 – 2019
- PODC, 2012 – 2014
- ESA, 2010 – 2013

### Program Committee Member

- PODC 2021, 2018, 2017
- SIROCCO 2021, 2019

- MobiHoc 2020, 2019, 2018, 2017, 2016, 2015 (ACM Int'l Symp. Mobile Ad-hoc Networking and Computing)
- ICDCS 2020, 2018 (IEEE Int'l Conf. on Distributed Computing Systems)
- DISC 2019, 2016 (International Symposium on Distributed Computing)
- ICALP, Track C, 2019, 2014, 2012
- SSS 2019, 2015 (Int' Symp. on Stabilization, Safety and Security of Distributed Systems)
- OPODIS 2018 (Int'l Conference on Principles of Distributed Systems)
- ALGOSENSORS 2018, 2016, 2011, 2008
- IPDPS 2018, 2017 (IEEE Int'l Parallel and Distributed Processing Symp.)
- SenSys 2017 (ACM Conference on Embedded Networked Sensor Systems)
- COCOON 2017 (Int'l Computing and Combinatorics Conference)
- IPSN 2016, 2015 (Int'l Conf. on Info. Processing in Sensor Netw.)
- SPAA 2016, 2013 (Symposium on Parallelism in Algorithms and Architectures)
- SWAT 2014, 2004, 1996
- 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 18101, "Scheduling", March 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**

- NordSec 2007
- EURO XXI (European Conference on Operational Research) 2006

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## Invited Plenary Talks

- 2019 14th International Conference on Distributed Computing in Sensor Systems (DCOSS) Keynote, Santorini, May 2019.
- 2018 Highlights of Algorithms (HALG), Amsterdam, June 2018.
- 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.
- 2012 Network Science Workshop, City University of Hong Kong, July 2012.
- 2010 10th Nordic Combinatorics Conference, Reykjavik, May 2010.
- 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.

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## Invited Tutorials

- 2017 6th Workshop on Advances in Distributed Graph Algorithms (ADGA), Vienna, Oct. 2017.
- 2013 18th Estonian Winter School in Computer Science (EWSCS), March 2013.
- 2011 Dagstuhl Seminar on “Packing and Scheduling Algorithms for Information and Communication Services”, February 2011.
- 2010 Dagstuhl Seminar on “Flexible Network Design”, May 2010.
- 2006 Autumn School, New Horizons in Computing, Nagoya, Japan, November 2006.

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## 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, Atsuhiro 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, Stephan Holzer, Pradipta Mitra, Roger Wattenhofer. The Power of Non-Uniform Wireless Power. *SIAM Journal of Computing* 46(3):1062–1098, June 2017.
73. Magnús M. Halldórsson, Christian Konrad. Distributed Large Independent Sets in a Single Round. *Distributed Computing* 31:69–82, 2018.
74. Magnús M. Halldórsson, Sven Köhler, Boaz Patt-Shamir, Dror Rawitz. Distributed Backup Placement in Networks. *Distributed Computing* 31:83, 2018. DOI:10.1007/s00446-017-0299-x.
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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 *Proc. 24th Int'l Colloq. Structural Information and Communication Complexity (SIROCCO)*, Porquerolles, France, June 2017.
95. Magnús M. Halldórsson, Christian Konrad. Improved Distributed Algorithms for Coloring Interval Graphs with Application to Multicoloring Trees. In *Proc. 24th Int'l Colloq. Structural Information and Communication Complexity (SIROCCO)*, Porquerolles, France, June 2017. Received **Best Paper Award**

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. Received **Best Paper Award**. Invited for presentation at *Highlights of Algorithms*, June 2018.
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.
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.
99. Magnús M. Halldórsson, Fabian Kuhn, Nancy Lynch, and Calvin Newport. An Efficient Communication Abstraction for Dense Wireless Networks. In *Proc. 31st International Symposium on Distributed Computing (DISC)*, Vienna, Austria, October 2017.
100. Magnús M. Halldórsson, Tigran Tonoyan. Wireless Aggregation at Nearly Constant Rate. In *Proc. ICDCS*, Vienna, July 2018.
101. Magnús M. Halldórsson, Guy Kortsarz, Pradipta Mitra, Tigran Tonoyan. Spanning Trees With Edge Conflicts and Wireless Connectivity. In *Proc. ICALP*, Prague, July 2018.
102. Magnús M. Halldórsson, Tigran Tonoyan. Leveraging Indirect Signaling for Topology Inference and Fast Broadcast. In *Proc. PODC*, London, July 2018.
103. Ravi Boppana, Magnús M. Halldórsson, Dror Rawitz. Simple and Local Independent Set Approximation. In *Proc. SIROCCO*, Jerusalem, June 2018.
104. Magnús M. Halldórsson, Tigran Tonoyan. Link Scheduling under Correlated Shadowing. In *Proc. WiOpt*, Avignon, June 2019.
105. Magnús M. Halldórsson, Tigran Tonoyan. Plain SINR is Enough! In *Proc. PODC*, Toronto, July 2019.
106. Michael Dinitz, Magnús M. Halldórsson, Taisuke Izumi, Calvin Newport. Distributed Minimum Degree Spanning Trees. In *Proc. PODC*, Toronto, July 2019.
107. Magnús M. Halldórsson, Murilo Santos de Lima. Query-Competitive Sorting with Uncertainty. In *Proc. MFCS*, Aachen, August 2019. LIPIcs.
108. Michael Dinitz, Magnús M. Halldórsson, Calvin Newport, Alex Weaver. The Capacity of Smartphone Peer-To-Peer Networks. In *Proc. DISC*, Budapest, October 2019. LIPIcs, Vol. 146. <https://doi.org/10.4230/LIPIcs.DISC.2019.14>
109. Steven Chaplick, Magnús M. Halldórsson, Murilo Santos de Lima, Tigran Tonoyan. Query Minimization under Stochastic Uncertainty. In *Proc. LATIN*, Sao Paulo, May 2020, LNCS vol. 12118.
110. Pierre Fraigniaud, Magnús M. Halldórsson, Alexandre Nolin. Testing distance- $k$  colorings in CONGEST. In *SIROCCO*, July 2020.
111. Magnús M. Halldórsson, Fabian Kuhn, Yannic Maus. Distance-2 coloring in CONGEST. In *PODC*, August 2020.
112. Magnús M. Halldórsson, Fabian Kuhn, Yannic Maus, Alexandre Nolin. Coloring fast without all the connections. In *DISC*, October 2020.
113. Marek Cygan, Magnús M. Halldórsson, Guy Kortsarz. Tight Bounds on Subexponential Time Approximation of Set Cover and Related Problems. In *WAOA*, September 2020, Springer LNCS, June 2021.
114. Magnús M. Halldórsson, Alexandre Nolin. Superfast Coloring in CONGEST via Efficient Color Sampling. In *SIROCCO*, June 2021. Springer LNCS.
115. Magnús M. Halldórsson, Fabian Kuhn, Yannic Maus, Tigran Tonoyan. Efficient Randomized Distributed Coloring in CONGEST. In *STOC*, June 2021.
116. Ívar Marrow Arnþórsson, Steven Chaplick, Jökull Snær Gylfason, Magnús M. Halldórsson, Jökull Máni Reynisson, Tigran Tonoyan. Generalized Disk Graphs. In *WADS* : 115-128, August 2021.

## Invited Book Chapters

117. 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.
118. 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.
119. 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.
120. 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.
121. 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.
122. Magnús M. Halldórsson and Guy Kortsarz. Algorithms for Chromatic Sums, Multicoloring, and Scheduling Dependent Jobs. In Gonzalez, T. (Ed.). *Handbook of Approximation Algorithms and Metaheuristics*, Volume 1, Chapter 38. Chapman and Hall/CRC, May 2018.
123. Magnús M. Halldórsson and Roger Wattenhofer. Wireless Network Algorithmics. *Computing and Software Science - State of the Art and Perspectives*. (Bernhard Steffen, Gerhard J. Woeginger, eds.) Lecture Notes in Computer Science 10000, pp. 141-160, Springer 2019.

## Selective Workshop Publications and Brief Announcements

124. 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.
125. 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.
126. Magnús M. Halldórsson and Jan Arne Telle. Complexity of generalized independent set problems. In *5th Twente Workshop on Graph Theory*, Twente, Holland, May 1997.
127. 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.
128. Kees van Deemter, Magnús M. Halldórsson. Logical form equivalence: The case of referring expressions generation. In *Proc. 8th European Workshop on Natural Language Generation*, 39th Annual Meeting of the Association of Computational Linguistics, Toulouse, France, July, 2001.
129. Magnús M. Halldórsson, Haukur Thorgeirsson, Ýmir Vigfússon, Hans Thormar, Jón J. Jónsson. CATTAGAT - Web Server for Primer Specificity Scan. *Genome Informatics Workshop (GIW) 2004*, Japan Society for Bioinformatics, Yokohama, Japan, December 13–15, 2004. (Poster)
130. Eyjólfur I. Ásgeirsson, Magnús M. Halldórsson, Pradipta Mitra. Distributed Algorithms for Throughput Performance in Wireless Networks (Brief Announcement). In *Proc. 31st ACM Symposium on Principles of Distributed Computing (PODC)*, Madeira, Portugal, July 2012.
131. Eyjólfur I. Ásgeirsson, Magnus M. Halldórsson, Pradipta Mitra, Joseph Foley, Helga Guðmundsdóttir, Sveinn F. Kristjánsson, Sindri Magnússon, Henning Ulfarsson, Ymir Vigfusson. Distributed Scheduling for Data Aggregation in Wireless Networks In *11th Workshop on Models and Algorithms for Planning and Scheduling Problems (MAPSP '13)*, Pont à Mousson, France. June, 2013.

132. Magnús M. Halldórsson. Locality in wireless scheduling (Brief announcement). In *Proc. 25th ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)*, Montreal, Canada, July 2013.
133. Marijke Bodlaender, Magnús M. Halldórsson, Christian Konrad. Local Approximation of Independent Sets and Coloring (POSTER) In *Proc. 29th International Symposium on Distributed Computing (DISC)*, Tokyo, Japan, October 2015.
134. Magnús M. Halldórsson, Tigran Tonoyan, Yuexuan Wang, Dongxiao Yu. Brief Announcement: Data Dissemination in Unified Dynamic Wireless Networks. In *Proc. 35th ACM Symposium on Principles of Distributed Computing (PODC)*, Chicago, July 2016.
135. Eyjólfur I. Ásgeirsson, Magnús M. Halldórsson, Tigran Tonoyan. Conflict Graphs and Scheduling in Wireless Networks. In *13th Workshop on Models and Algorithms for Planning and Scheduling Problems (MAPSP 2017)* Seeon-Seebruck, Germany, June 2017.
136. Magnús M. Halldórsson, Stephan Holzer, Evangelia Anna Markatou. Brief Announcement: Leader Election in SINR Model with Arbitrary Power Control. In *Proc. 36th ACM Symposium on Principles of Distributed Computing (PODC)*, Washington, DC, July 2017.
137. Ravi Boppana, Magnús M. Halldórsson, Dror Rawitz. Brief Announcement: Simple and Local Independent Set Approximation. In *Proc. PODC*, London, 2018.
138. Magnús M. Halldórsson, Tigran Tonoyan. Plain SINR is Enough! In *HALG*, June 2019. (Poster)

## Thesis

1. Magnús M. Halldórsson. Frugal Methods for the Independent Set and Graph Coloring Problems. Ph. D. thesis. Rutgers University, New Jersey, October 1991.

## Other Publications

1. Magnús M. Halldórsson. An Icelandic-English index. In *English-Icelandic Mathematics Dictionary*, The Icelandic Mathematical Society, 1997.
2. Magnús M. Halldórsson, K. V. Subrahmanyam, and Jaikumar Radhakrishnan. A superlinear lower bound for undirected monotone contact networks computing  $T_{n-1}^n$ . Manuscript, September 1994.
3. Bjarni V. Halldórsson and Magnús M. Halldórsson. Empirical study of some clique heuristics motivated by worst-case results. Science Institute Technical Report RH-21-00, University of Iceland, September 2000.
4. Magnús M. Halldórsson. An approximation algorithm for complete partition of regular graphs. Unpublished manuscript, [www.hi.is/~mmh/publications.html](http://www.hi.is/~mmh/publications.html), February 2004.
5. Hans G. Þormar, Haukur Þorgeirsson, Ýmir Vigfússon, Guðmundur H. Gunnarsson, Bjarki Guðmundsson, Jón J. Jónsson, Magnús M. Halldórsson. Íslenskur vefþjónn til að framkvæma sýndar PCR hvörf í erfðamengiröðum í gagnabönkum (Icelandic web server to perform virtual PCR reactions on genome sequences in databases) *Afmælisráðstefna Líffræðifélagsins*, nóvember 2004, <http://notendur.centrum.is/~biologia/radstefn2004.htm>. (Poster, In Icelandic)
6. Luca Aceto, Magnús M. Halldórsson and Anna Ingólfssdóttir. Report on the Icelandic Centre of Excellence in Theoretical Computer Science (ICE-TCS): Opening and Inaugural Symposium. *Bulletin of the EATCS*, June 2005. <http://www.eatcs.org/publications/bulletin.html>
7. Magnús M. Halldórsson and Calvin Newport Making Wireless Algorithm Theory More Useful. *ACM SIGACT News* 45(3):72–74, September 2014.
8. Luca Aceto, Magnús M. Halldórsson and Anna Ingólfssdóttir. Report on two events at ICE-TCS, Reykjavik University, *Bulletin of the EATCS* 114, October 2014. <http://eatcs.org/beatcs/index.php/beatcs/article/view/301>
9. Guy Even, Magnus M. Halldorsson, Yvonne Anne Pignolet, Christian Scheideler. Algorithms for Wireless Communication. Report on Dagstuhl Seminar 14051. Dagstuhl DROPS <http://dx.doi.org/10.4230/DagRep.4.1.152>, 2014.

10. Christina Fragouli, Magnús M. Halldórsson, Kyle Jamieson and Bhaskar Krishnamachari. Foundations of Wireless Networking (Dagstuhl Seminar 17271). Dagstuhl Reports 7(7), 2018.
11. Magnús M. Halldórsson, Nicole Megow and Clifford Stein, Scheduling (Dagstuhl Seminar 18101). Dagstuhl Reports 8(3), <https://doi.org/10.4230/DagRep.8.3.1> 2018