Resume

Reuven Bar-Yehuda

September 27, 2020

Address: Computer Science Department, Technion IIT, Haifa 32000, Israel
Identification: 0-6506982-5
Date of Birth: July 17, 1951
Status: Married+2
www: http://www.cs.technion.ac.il/~reuven

Academic Degrees

1983 Ph.D., Computer Science Department, Technion IIT, Israel.

1980 M.Sc., Computer Science Department, Technion IIT, Israel.

1978 B.Sc. Computer Science Department, Technion IIT, Israel.

Academic Appointments

2016- Full Professor,
Computer Science Department, Technion IIT, Israel.

1999-2016 Associate Professor,
Computer Science Department, Technion IIT, Israel.

1989-99 Senior lecturer,
Computer Science Department, Technion IIT, Israel.

1992-93 Visiting Associate Professor,
Computer Science Department, SUNYAB, Buffalo NY 14260, USA.

1986-89 Lecturer,
Computer Science Department, Technion IIT, Israel.

1984-86 Visiting Assistant Professor,
Computer Science Department, Duke University, Durham NC 27706, USA.

1983-84 Lecturer,
Computer Science Department, Technion IIT, Israel.

1980-83 Instructor,
Computer Science Department, Technion IIT, Israel.

1978-80 Teaching Assistant and Instructor,
Computer Science Department, Technion IIT, Israel.

Research Interests

Combinatorial Optimization, including: Approximation Algorithms for NP-Hard Problems, Algorithms in Combinatorial Geometry, Distributed Algorithms, Theoretical aspects of Radio Communication, VLSI design.

Teaching Experience

2000- Courses on Web: Intro to Computers via Pascal, Intro to CS 234111/114/117, Intro to CS via C 234112, Algorithms 1, Combinatorics, Intro to Computers vi Matlab

1999-03 Computer Science Department, Technion IIT, Israel - Seminar on Approximation Algorithms

1999-03 Computer Science Department, Technion IIT, Israel - Combinatorics for CS

1997-01 Computer Science Department, Technion IIT, Israel - Introduction to CS

1997-98 Computer Science Department, Technion IIT, Israel - Advanced Course on Computational Geometry.

1996-97 Computer Science Department, Technion IIT, Israel - Graph Algorithms.

1996-97 Computer Science Department, Technion IIT, Israel - Seminar on Computational Geometry.

1993-96 Computer Science Department, Technion IIT, Israel - Introduction to Programming (using C).

1992-93 Computer Science Department, SUNYAB - Algorithms 2. Seminar on Practical approaches for NP-Hard optimization problems.

1989-92 Computer Science Department, Technion IIT, Israel - Seminar on Geometric Algorithms.

1987-92 Computer Science Department, Technion IIT, Israel - Introduction to Programming.

1986-87 Computer Science Department, Technion IIT, Israel - Discrete Mathematics.

1984-86 Computer Science Department, Duke University - (CPS202) Applied Discrete Structures, (CPS51) - Introduction to Programming (Turbo Pascal).

1983-84 Computer Science Department, Technion IIT, Israel - PL/1 Programming Language, Algorithms in Graph Theory and Discrete Mathematics.

1983-84 Department of Education in Technology and Science, Technion IIT, Israel - Elementary Computer Mathematics, Algorithms and BASIC Programming Language.

1980-83 Computer Science Department, Technion IIT, Israel - PL/1 Programming Language.

1974-83 Center for Pre-University Studies, Technion IIT, Israel - Elementary Mathematics. (Especially Geometry)

1978-80 Computer Science Department, Technion IIT, Israel - Teaching Assistant on Graph Theory and Combinatorics, APL Programming, PL/1 Programming and Advisor on Programming.

Technion Activities

1980-83 Member of Technion Junior Academic Staff Association Committee, Technion IIT, Israel.

Administrative Posts

2015- Member of the Technion Zilag Prize Committe

2006-2008 Member of the Technion Senate Permanent Committee on Graduate and Undergraduate Studies

2006-2009 Member of the Technion Senate Subcommittee on Graduate and Undergraduate Studies Syllabi

2006-2009 General Technion Committee (elected by the the Senate)

2004-2010 Vice Dean for Undergraduate Studies.

2004-2010 Head of Undergraduate Instruction Committee.

2004-2010 Undergraduate Instruction Committee.

2000-03 Curricula Committee.

1996-2001 Colloquia coordinator.

1996-1998 Graduate Committee.

1989-1993 Curricula Committee.

1988-1993 Undergraduate Instruction Committee.

1986-1987 Undergraduate Instruction Committee.

1986-1987 Curricula Committee.

Public professional activities

2006 Program committee member, The Fourth Workshop on Approximation and On line Algorithms, WAOA 2006, Zurich.

Honors

1980 Michael Landau Prize for Research in Computer Science.

1982 Department Outstanding Lecturer Chosen by the Technion Student Society.

1983 Technion Outstanding Lecturer Chosen by the Technion Student Society.

1988 Group Innovation Award for outstanding project - IBM Scientific Center.

1990 Muriel and David Jacknow Award for Excellence in Teaching.

1999 Technion Outstanding Lecturer Chosen by the Technion Student Society.

1999 Best student paper award for "Random algorithms for the loop cutset problem", by Ann Becker, Reuven Bar-Yehuda, and Dan Geiger, awarded by the Association for Uncertainty in Artificial Intelligence.

2003 Technion Outstanding Lecturer Chosen by the Technion Student Society.

2004 Technion Outstanding Lecturer Chosen by the Technion Student Society.

2006 Technion Outstanding Lecturer Chosen by the Technion Student Society.

2007 Technion Outstanding Lecturer Chosen by the Technion Student Society.

2008 Technion Outstanding Lecturer Chosen by the Technion Student Society.

2013 Technion Outstanding Lecturer Chosen by the Technion Student Society.

2014 Technion Outstanding Lecturer Chosen by the Technion Student Society.

2015 Yanai Prize for Excellence in Academic Education. This prize carries an award of $30000 and is considered the most prestigious prize in the Technion. It is awarded for a substantial and unique contribution to the advancement of academic education of undergraduate students.

2015 Technion Outstanding Lecturer Chosen by the Technion Student Society.

2016 Best Student Paper Award, PODC 2016

2016 Technion Outstanding Lecturer Chosen by the Technion Student Society.

2019 WG "Test of Time Award" given to first Local Ratio paper.

Graduate Students

Completed Thesis

1. Eyal Ben-Hanoch
   M.Sc.: Feb. 1990. Covering Polygons by Squares.

2. Sergio Fogel
   M.Sc.: Sep. 1990. Ray Shooting: Searching and Counting Queries.

3. Raanan Grinwald
   M.Sc.: Apr. 1991. Merging Polygons with Applications.

4. Alon Efrat
   M.Sc.: Nov. 1993. (Co-supervisor Itai Alon) A Simple Algorithm for Maintaining the Center of a Planar Point Set.

5. Amir Eliaz
   M.Sc.: Mar. 1995. (Co-supervisor Dan Geiger) Word-level Recognition of Handwritten Words from Small Lexicons.

6. Dror Rawitz
   M.Sc.: Apr. 1998. Efficient Algorithms for Integer Programs with Two Variables per Constraint.

7. Zehavit Kehat
   M.Sc.: Feb. 1999. Using the Local-Ratio Principle for Approximating Dense Cases of Covering Problems.

8. Dror Rawitz
   PhD: October 2003. Applications for the Local Ratio Technique for Approximating Covering Problems.

9. Yohai Makbily
   M.Sc.: Sep. 1998. (Co-supervisor Craig Gotsman) Message Management in Distributed Visual Environment Systems.

10. Keren Bendel
    M.Sc.: Apr. 2002 Applications of the Local Ratio Technique: A survay

11. Tzachi Karni
    PhD: Sep. 2004. (Co-supervisor Craig Gotsman) Coding of Animated 3D Objects.

12. Jonathan Laserson
    M.Sc.: Sep. 2005. Approximation Algorithms for Sorting Buffers.

13. Ido Feldman
    M.Sc.: Nov. 2005. Improved Approximation Algorithm for Convex Recoloring of Trees.

14. Flysher Guy
    M.Sc.: 2008 Approximation Algorithms for Partial Capacitated Covering Problems.

15. Gleb Polevoy
    M.Sc.: 2012 Bandwidth Allocation in Cellular Networks with Multiple Interferences

16. Beder Michael
    M.Sc.: 2013 Approximation Algorithms for Resource Scheduling and Allocation Problems

Thesis in Progress

1. Gilad Kutiel
   PhD: Since October 2014, Convex Recoloring of Trees

Research Grants

2000-2004 Principal investigator in the Large Scale Rural Telephony (LSRT) consortium administered by the chief scientist of the Israeli Ministry of Industry and Trade. $200,000/year total $800,000.

2004-2009 Principal investigator in the REMON consortium administered by the chief scientist of the Israeli Ministry of Industry and Trade. $175,000/year.

2009-2013 Principal investigator in the Net-HD consortium administered by the chief scientist of the Israeli Ministry of Industry and Trade. $175,000/year.

2013- Principal investigator in the Neptune consortium administered by the chief scientist of the Israeli Ministry of Industry and Trade. $85,000/year.

Significant Professional Projects

1986-1988 Bar-Yehuda, R., J. A. Feldman, R. Y. Pinter and S. Wimer.
Developed programs for Layouts of VLSI circuits (CMOS technology). The Programs are already in practical use at one of IBM laboratory (Austin Tx. USA) for automatic cell generation. The resulting layouts are competetial very with manual layouts done by professional designers. The input to this tool describes the topology of CMOS circuit. The output is the final layout. It has been used to generate a complete library from scratch. Also, there are some real chips (SJ1 family) in this laboratory for which the random logic parts are the result of our tool. These tools were used in the design of the IBM RS/6000 processor.

1987-1988 Bar-Yehuda, R., J. A. Feldman, and S. Wimer.
Developed programs for VLSI circuits layouts (CMOS technology). The Programs are already in practical use at other of IBM laboratories (Burlington VT. USA) for automatic cell generation. The program was used to re-map an existing cell library from an old technology to a new one. The old library was generated manually. The new cell library is widely used to design new chips and to redesign old ones. An experimental chip was developed and is at this time undergoing testing.

1988-1990 Bar-Yehuda, R., Z. Meiri, Y. Aizenbud, Y. Medan.
Tiling of Repetitive VLSI arrays. Manufacturing of large, repetitive VLSI arrays, may require that the design real-estate be cut into tillable, non-overlapping pieces. The cut-frame is constrained not to be too close to the edges or vertices of the design shapes, not to have vertices too-close to slant edges of the letter, etc. The algorithm we developed defines cost functions that replace hard-constrains and reflect the heuristics practiced by human designer, by computing minimal cost paths. The program's efficiency stems from the use of a special data structure that matches the geometrical properties of the problem. As a result we succeeded to computing a solutions for problems containing tens of thousands of grid points.

Publications

Theses

1. The Complexity of Finding k-Path-Free Dominating Set in Graphs, M.Sc. Thesis, Computer Science Department, Technion IIT - Israel, July 1980. Thesis advisor: S. Even.

2. Approximation Algorithms for Graph Cover Problems, Ph.D. Thesis, Computer Science Department, Technion IIT - Israel, February 1983. Thesis advisor: S. Even.

Refereed papers in professional journals

Journals

1. Bar-Yehuda, R. and S. Even. A linear time approximation algorithm for the weighted vertex cover problem. *Journal of Algorithms*, 2:198–203, 1981.

2. Bar-Yehuda, R. and U. Vishkin. Complexity of finding k-path-free dominating sets in graphs. *Information Processing Letters*, 14(5):228–232, 1982.

3. Bar-Yehuda, R. and S. Moran. On approximation problems related to the independent set and vertex cover problems. *Discrete Applied Mathematics*, 9:1–10, 1984.

4. Bar-Yehuda, R. and S. Even. A Local-Ratio Theorem for Approximating the Weighted Vertex Cover problem. *Annals of Discrete Mathematics*, 25:27–46, 1985.

5. Bar-Yehuda, R. and S. Kutten. Fault tolerant distributed majority commitment. *Journal of Algorithms*, 9(4):568–582, December 1988.

6. Bar-Yehuda, R., J. A. Feldman, R. Y. Pinter, and S. Wimer. Depth first search and dynamic programming algorithms for efficient CMOS cell generation. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, 8(7), 1989.

7. Bar-Yehuda, R., O. Goldreich, and A. Itai. Efficient emulation of single-hop radio network with collision detection on multi-hop radio network with no collision detection. *Distributed Computing*, 5(2):67–72, 1991.

8. Bar-Yehuda, R., O. Goldreich, and A. Itai. On the time-complexity of broadcast in multi-hop radio networks: An exponential gap between determinism and randomization. *Journal of Computer and System Sciences*, 45:104–126, 1992.

9. Bar-Yehuda, R., T. Etzion, and S. Moran. Rotating-table games and derivatives of words. *Theoretical Computer Science*, 108:311–329, 1993.

10. Bar-Yehuda, R. and S. Fogel. Variations on ray shooting. *Algorithmica*, 11:133–145, 1994.

11. Bar-Yehuda, R. and T. Etzion. Connections between two cycles – A new design of dense processor interconnection networks. *Discrete Applied Mathematics and Combinatorial Operations Research and Computer Science*, 38:29–43, 1992.

12. Bar-Yehuda, R., B. Chor, E. Kushilevitz, and A. Orlitsky. Privacy, additional information, and communication. *IEEE Transactions on Information Theory*, 39(6):1930–1943, 1993.

13. Bar-Yehuda, R., A. Israeli, and A. Itai. Multiple communication in multi-hop radio networks. *SIAM Journal on Computing*, 22(4):875–887, August 1993.

14. Bar-Yehuda, R. and B. Chazelle. Triangulating disjoint Jordan chains. *Int. J. of Computational Geometry & Appl.*, 4(4):475–481, 1994.

15. Bar-Yehuda, R. and E. Ben-Hanoch. A linear time algorithm for covering simple polygons with similar rectangles. *Int. J. of Computational Geometry & Appl.*, 6(1):79–102, 1996.

16. Bar-Yehuda, R. C. Gotsman. Time/space tradeoffs for polygon mesh rendering. *ACM Trans. on Graphics*, 15(2):141–152, 1996.

17. Cohen, S., G. Elber, and R. Bar-Yehuda. Matching of freeform curves. *Computer Aided Design*, 29(5):369–378, 1997.

18. Bar-Yehuda, R., D. Geiger, J. Naor, and R. Roth. Approximation Algorithms for the Feedback Vertex Set Problem with Applications to Constraint Satisfaction and Bayesian Inference, *SIAM Journal on Computing*, 27(4):942–959, 1998.

19. Bar-Yehuda, R. and S. Fogel. Partitioning a sequence into few monotone subsequences. *Acta Informatica*, 35:421-440, 1998.

20. Becker, A., R. Bar-Yehuda, and D. Geiger. Randomized Algorithms for the Loop Cutset Problem, *Journal Artificial Intelligence Research* 12:219–234, 2000.

21. Bar-Yehuda, R., One for the Price of Two: A Unified Approach for Approximating Covering Problems, *Algorithmica* 27(2), 2000:131–144, 2000.

22. Bar-Yehuda, R. and D. Rawitz. Efficient Algorithms for Integer Programs with Two Variables per Constraint, *Algorithmica* 29(4):595-609, 2001.

23. Bar-Yehuda, R., Using Homogeneous Weights for Approximating the Partial Cover Problem, *Journal of Algorithm*, 39:137–144, 2001.

24. Bar-Noy A., R. Bar-Yehuda, A. Freund, S. Naor, and B. Schieber, A unified approach to approximating resource allocation and scheduling, *Journal of the ACM* 48(5):1069–1090, 2001.

25. Bar-Yehuda R., G. Even, J. Feldman, and S. Naor, Computing an optimal orientation of a balanced decomposition tree for linear arrangement problems, *Journal of Graph Algorithms and Applications*, 5:1–27, 2001.

26. Bar-Yehuda R. and D. Rawitz, Approximating Element-Weighted Vertex Deletion Problems for the Complete k-partite Property, *Journal of Algorithms*, 42(1):20–40, 2002

27. Bar-Yehuda, R. and D. Rawitz. Local ratio with negative weights, *Operations Research Letters*, 32(6):540-546, 2004.

28. Bar-Yehuda, R. and Z. Kehat, Approximating the Dense Set-Cover Problem *Journal of Computer and System Sciences* 69(4):547-561, 2004.

29. Bar-Yehuda, R., K. Bendel, A. Freund, and D. Rawitz, Local ratio: A unified framework for approximation algorithms in memoriam: Shimon Even 1935-2004, *ACM Computing Surveys*, 36, 4, 422-463, 2004.

30. R. Bar-Yehuda, Even G., and S. Shahar, On approximating a geometric prize-collecting traveling salesman problem with time windows, *Journal of Algorithms*, 55(1):76-92 2005.

31. Bar-Yehuda, R., D. Rawitz, On the Equivalence Between the Primal-Dual Schema and the Local-Ratio Technique, *SIAM Journal on Discrete Mathematics* 19(3):762-797, 2005.

32. R. Bar-Yehuda and D. Rawitz, Using Fractional Primal-Dual to Schedule Split Intervals with Demands. *Discrete Optimization* 3(4): 275-287, 2006.

33. Bar-Yehuda R., M. M. Halldorsson, J. Naor, H. Shachnai and I. Shapira, Scheduling Split Intervals, *Siam Journal on Computing*, Vol. 36, No. 1, 1–15, 2006.

34. Bar-Yehuda R. and I. Yavneh, A Factor-Two Approximation Algorithm for Two-Dimensional Phase-Unwrapping, *J. Graph Algorithms and Applications*, 10, 2 123-139, 2006.

35. R. Bar-Yehuda and J. Laserson, Exploiting Locality: Approximating Sorting Buffers, *Journal of Discrete Algorithms*, Vol. 5, Issue 4, 729-738, 2007.

36. R. Bar-Yehuda I. Feldman and D. Rawitz, Improved Approximation Algorithm for Convex Recoloring of Trees. *Theory of Computing Systems* 43(1): 3-18, 2008.

37. R. Zohar and R. Bar Yehuda The Maximum Weight Hierarchy Matching Problem, *Information Fusion*, 10, 2, 198-206, 2009.

38. Bar-Yehuda R., M. Beder, Y. Cohen, and D. Rawitz. Resource allocation in bounded degree trees. *Algorithmica*, 54(1):89-106, 2009.

39. Bar-Yehuda R, D. Hermelin and D. Rawitz, An Extension of the Nemhauser-Trotter Theorem to Generalized Vertex Cover with Applications. *SIAM J. Discrete Math.* 24(1):287-300, 2010.

40. Bar-Yehuda R., G. Flysher, J. Mestre and D. Rawitz, Approximation of Partial Capacitated Vertex Cover, *SIAM J. Discrete Math.* Volume 24, Issue 4, pp. 1441-1469 (2010)

41. Bar-Yehuda R., D. Hermelin and D. Rawitz. Minimum vertex cover in rectangle graphs. *Computational Geometry: Theory and Applications*, Vol. 44, Issue 1, 356-364, 2011

42. Bar-Yehuda R. and D. Rawitz. A note on multicovering with disks. *Computational Geometry: Theory and Applications* 46(3):394-399, 2013.

43. Amzallag D., R. Bar-Yehuda, D. Raz and G. Scalosub, Cell Selection in 4G Cellular Networks. Accepted to *IEEE Transactions on Mobile Computing* 2013.

44. Bar-Yehuda R., G. Polevoy and D. Rawitz, Bandwidth allocation in cellular networks with multiple interferences. Discrete Applied Mathematics 194:23–26, 2015.

45. Bar-Yehuda R., M. Beder, and D. Rawitz. A constant factor approximation algorithm for the storage allocation problem. Algorithmica 77(4):1105-1127, 2017.

46. Bar-Yehuda R., G. Kutiel and D. Rawitz. 1.5-Approximation Algorithm for the 2-Convex Recoloring Problem Discrete Applied Mathematics, to appear 2017

47. Reuven Bar-Yehuda, Keren Censor-Hillel, Gregory Schwartzmana, A Distributed $(2+\epsilon)$-Approximation for Vertex Cover in $O(\log\Delta/\epsilon\log\log\Delta)$ Rounds, Best Student Paper Award, PODC 2016 Invited to be submitted to the Special Issue of PODC 2016 in the Journal of the ACM (JACM). Journal of the ACM 64(3): 23:1-23:11 (2017). ACM 64(3): 23:1-23:11 (2017)

48. Bar-Yehuda R., E. Kantor, S. Kutten, D. Rawitz, Growing Half-Balls: Minimizing Storage and Communication Costs in CDNs. *SIAM Journal on Discrete Mathematics*, 32(3):1903-1921, 2018.

Book Chapters

1. Bar-Yehuda R., K. Bendel, Ari Freund, and D. Rawitz. The local ratio technique and its application to scheduling and resource allocation problems. In Graph Theory, Combinatorics, and Algorithms: Interdisciplinary Applications. Martin C. Golumbic, Irith Ben-Arroyo Hartman (Eds.), *Operations Research & Computer Science Series* 33, 2005.

2. Bar-Yehuda R., and D. Rawitz. A tale of two methods. In Theoretical Computer Science: Essays in Memory of Shimon Even. Oded Goldreich, Arnold L. Rosenberg, and Alan L. Selman (Eds.), LNCS 3895:196-217, Springer-Verlag, 2006.

Conferences

Invited Talks

1. Bar-Yehuda, R. Dagstuhl Seminar 9734, Combinatorial Approximation Algorithms, ISSN 0940-1121, Schloss Dagstuhl, Wadern, Germany, August 18-22, 1997.

2. Bar-Yehuda, R. LP Rounding using Fractional Local Ratio XIX International Symposium on Mathematical Programming From July 30th to August 04th of 2006 UFRJ - Federal University of Rio de Janeiro

Contributed Talks

1. Bar-Yehuda, R. and S. Even. On Approximating a Vertex Cover for Planar Graphs,)Proceeding of the Fourteenth Annual ACM Symposium on Theory of Computing (STOC), San Francisco, California, May 5-7, 1982, pp. 303-309.

2. Bar-Yehuda, R., O. Goldreich, and A. Itai. On the Time-Complexity of Broadcast in Radio Networks: An Exponential Gap Between Determinism and Randomization. Proceeding of the 6-th Annual ACM Symposium on Principles of Distributed Computing (PODC), Vancouver, British Columbia, Canada, Aug 10-12, 1987, pp. 98-108.

3. Bar-Yehuda, R., A. Israeli, and A. Itai, Multiple Communication in Multi-Hop Radio Networks, Proceeding of the 8-th Annual ACM Symposium on Principles of Distributed Computing (PODC), Canada, Aug 14-16, 1989.

4. Bar-Yehuda, R., and S. Fogel, Good Splitters with Application to Ray Shooting, Second Canadian Conference on Computational Geometry, Ottawa, Ontario, Canada, August 6-10, 1990.

5. Bar-Yehuda, R., and E. Ben-Hanoch, An $O(N \log^* N)$ Time Algorithm for Covering Simple Polygons With Squares, Second Canadian Conference on Computational Geometry, Ottawa, Ontario, Canada, August 6-10, 1990.

6. Bar-Yehuda, R., and R. Grinwald, Triangulating Polygons with Holes, Second Canadian Conference on Computational Geometry, Ottawa, Ontario, Canada, August 6-10, 1990.

7. Bar-Yehuda, R., One for the Price of Two: A Unified Approach for Approximating Covering Problems, APPROX98, Aalborg, Denemark, July 17-18, 1998.

8. Bar-Yehuda R., Using Homogeneous Weights for Approximating the Partial Cover Problem, Tenth Annual ACM-SIAM Symposium on Discrete Algorithms, Baltimore, Maryland, January 17-19, 1999.

9. Bar-Noy A., Bar-Yehuda, R., Freund A., Naor S., and B. Schieber, A Unified Approach to Approximating Resource Allocation and Scheduling The Thirty Second Annual ACM Symposium on Theory of Computing (STOC), Portland Oragon, May 21-23, 2000. (Contained in (24))

10. R. Bar-Yehuda, Even G., and S. Shahar, On Approximating A Geometric Prize-Collecting Traveling Salesman Problem With Time Windows, in ESA-2003, Lecture Notes in 11th Annual European Symposium on Algorithms, (ESA-2003), Lecture Notes in Computer Science 2832:55–66, Springer 2003. Budapest, Hotel Benczr, 15-20 September, 2003 (Contained in (30))

11. R. Bar-Yehuda and D. Rawitz, Using Fractional Primal-Dual to Schedule Split Intervals with Demands, 13th Annual European Symposium on Algorithms, (ESA-2005), Lecture Notes in Computer Science 3669:714–725, Springer 2005. Palma de Mallorca, Spain, October 3-6, 2005. (Contained in Submitted (32))

12. R. Bar-Yehuda and J. Laserson, Exploiting Locality: Approximating Sorting Buffers, Proceedings of the 3rd International Workshop on Approximation and Online Algorithms (WAOA), 2005. Lecture Notes in Computer Science Springer. Mallorca, Spain, October 3-6, 2005 (Contained in Submitted (35))

13. R. Bar-Yehuda I. Feldman and D. Rawitz, Improved Approximation Algorithm for Convex Recoloring of Trees, Proceedings of the 3rd International Workshop on Approximation and Online Algorithms (WAOA), 2005. Lecture Notes in Computer Science Springer. Mallorca, Spain, October 3-6, 2005 (Contained in (36))

14. Bar-Yehuda R., G. Polevoy and D. Rawitz. Bandwidth allocation in cellular networks with multiple interferences. Preliminary version appeared in 6th DIALM-POMC, 33-42, 2010. (Contained in (44))

Refereed Papers in Conference Proceedings

1. Bar-Yehuda, R. and S. Even. On Approximating a Vertex Cover for Planar Graphs, Proceeding of the Fourteenth Annual ACM Symposium on Theory of Computing (STOC), San Francisco, California, May 5-7, 1982, pp. 303-309.

2. Bar-Yehuda, R. and S. Even. A Local-Ratio Theorem for Approximating the Weighted Vertex Cover Problem, Proceedings of the WG '83, International Workshop on Graphtheoretic Concepts in Computer Science, June 16-18, 1983, pp. 17-28. (the same as (2))

3. Bar-Yehuda, R., O. Goldreich, and A. Itai. On the Time-Complexity of Broadcast in Radio Networks: An Exponential Gap Between Determinism and Randomization. Proceeding of the 6-th Annual ACM Symposium on Principles of Distributed Computing (PODC), Vancouver, British Columbia, Canada, Aug 10-12, 1987, pp. 98-108. (the same as (8))

4. Bar-Yehuda, R., S. Kutten, Y. Wolfstahl, and S. Zaks. Making Distributed Algorithms Fault-Resilient, Symposium on Theoretical Aspects of Computer Science (STACS), 1987 Passau, Germany. (Contains Reference (5))

5. Bar-Yehuda, R., J. A. Feldman, R. Y. Pinter and S. Wimer. Depth First Search and Dynamic Programming Algorithms for Efficient CMOS Cell Generation. The 5-th MIT Conference on VLSI, 1988. (the same as (6))

6. Bar-Yehuda, R., A. Israeli, and A. Itai, Multiple Communication in Multi-Hop Radio Networks, Proceeding of the 8-th Annual ACM Symposium on Principles of Distributed Computing (PODC), Canada, Aug 14-16, 1989. (the same as (12))

7. Bar-Yehuda, R., O. Goldreich, and A. Itai. Efficient Emulation of Single-Hop Radio network with Collision Detection on Multi-Hop Radio network with no Collision Detection the 3rd International Workshop on Distributed Algorithms. Nice, France, September 26-28, 1989. (the same as (7))

8. Bar-Yehuda, R., B. Chor, and E. Kushilevitz, Privacy, Additional Information, and Communication, 5th IEEE Structure in Complexity Theory, July 1990, pp. 55-65. (Contained in (13))

9. Bar-Yehuda, R., and S. Fogel, Good Splitters with Application to Ray Shooting, Second Canadian Conference on Computational Geometry, Ottawa, Ontario, Canada, August 6-10, 1990. (related to (11), (14))

10. Bar-Yehuda, R., and E. Ben-Hanoch, An $O(N \log^* N)$ Time Algorithm for Covering Simple Polygons With Squares, Second Canadian Conference on Computational Geometry, Ottawa, Ontario, Canada, August 6-10, 1990. (Contained in (15))

11. Bar-Yehuda, R., and R. Grinwald, Triangulating Polygons with Holes, Second Canadian Conference on Computational Geometry, Ottawa, Ontario, Canada, August 6-10, 1990.

12. Bar-Yehuda, R., and R. Grinwald, Merging Polygonal Obstacles, 7th Israeli Symposium on Artificial Intelligence and Computer Vision, Tel Aviv, Dec. 1990. (Continuation of the previous conf.)

13. Bar-Yehuda, R., V. Dabholkar, K. Govindarajan and D. Sivakumar, Randomized Local Approximations with applications to the MAX-CLIQUE problem, Poster in SECOND DIMACS CHALLENGE, (Cliques, Coloring, and Satisfiability), 1993.

14. Bar-Yehuda, R., D. Geiger, J. Naor and R. Roth, Approximation algorithms for the vertex feedback set problem with applications to constraint satisfaction and bayesian inference, Proceedings of the 5th Annual ACM-Siam Symposium on Discrete Algorithms, Arlington, Virginia, (1994). (Contained in (18))

15. Bar-Yehuda, R., A. Efrat and A. Itai, A simple algorithm for maintaining the center of a planar point-set, Fifth Canadian Conference on Computational Geometry, 252-257, 1993.

16. Bar-Yehuda R., One for the Price of Two: A Unified Approach for Approximating Covering Problems, APPROX 1998 - First International Workshop on Approximation Algorithms for Combinatorial Optimization Problems, Aalborg, Denmark, July 17-18, 1998. (Contained in (21))

17. Bar-Yehuda R., Using Homogeneous Weights for Approximating the Partial Cover Problem, Tenth Annual ACM-SIAM Symposium on Discrete Algorithms, January 17-19, 1999. (Contained in (23))

18. Makbily, Y., C. Gotsman and R. Bar-Yehuda, Geometric Algorithms for Message Filtering in Decentralized Virtual Environments, ACM Symposium on Interactive 3D Graphics April 26-28, 1999.

19. Bar-Yehuda, R. and D. Rawitz. Efficient Algorithms for Integer Programs with Two Variables per Constraint, 7th Annual European Symposium on Algorithms. Prague, Czech Republic, July 1999.

20. Becker A., Bar-Yehuda, R., and D. Geiger, Random Algorithms for the Weighted Feedback Vertex Set Problem Fifteenth Conference on Uncertainty in Artificial Intelligence July 30-August 1999, Shtockholm, Sweden

21. Bar-Noy A., Bar-Yehuda, R., Freund A., Naor S., and B. Schieber, A Unified Approach to Approximating Resource Allocation and Scheduling The Thirty Second Annual ACM Symposium on Theory of Computing (STOC), Portland Oragon, May 21-23, 2000.

22. Bar-Yehuda, R., D. Rawitz, On the Equivalence Between the Primal-Dual Schema and the Local-Ratio Technique, APPROX 2001 - 4th. International Workshop on Approximation Algorithms for Combinatorial Optimization Problems, Berkeley, California, USA, 18-20 August 2001. (Contained in (31))

23. Bar-Yehuda R., M. M. Halldorsson, J. Naor, H. Shachnai and I. Shapira, Scheduling Split Intervals, Thirteenth ACM-SIAM Symposium on Discrete Algorithms (SODA), January 6-8, 2002 San Francisco. (Contained in (33))

24. R. Bar-Yehuda, Even G., and S. Shahar, On Approximating A Geometric Prize-Collecting Traveling Salesman Problem With Time Windows, in ESA-2003, Lecture Notes in Computer Science 2832:55–66, Springer 2003. (Contained in (30))

25. R. Bar-Yehuda and D. Rawitz, Using Fractional Primal-Dual to Schedule Split Intervals with Demands, 13th Annual European Symposium on Algorithms, (ESA-2005), Lecture Notes in Computer Science 3669:714–725, Springer 2005. Palma de Mallorca, Spain, October 3-6, 2005. (Contained in Submitted (32))

26. R. Bar-Yehuda and J. Laserson, Exploiting Locality: Approximating Sorting Buffers, Proceedings of the 3rd International Workshop on Approximation and Online Algorithms (WAOA), 2005. Lecture Notes in Computer Science Springer. Mallorca, Spain, October 3-6, 2005 (Contained in Submitted (35))

27. R. Bar-Yehuda I. Feldman and D. Rawitz, Improved Approximation Algorithm for Convex Recoloring of Trees, Proceedings of the 3rd International Workshop on Approximation and Online Algorithms (WAOA), 2005. Lecture Notes in Computer Science Springer. Mallorca, Spain, October 3-6, 2005 13th Annual European Symposium on Algorithms, (Contained in Submitted (36))

28. R. Bar-Yehuda, M. Beder, Y. Cohen, and D. Rawitz. Resource allocation in bounded degree trees, ESA'06: Proceedings of the 14th conference on Annual European Symposium, Lecture Notes in Computer Science 4168:64-75, Springer 2006. (Contained in (38))

29. R. Bar-Yehuda, G. Flysher, J. Mestre, and D. Rawitz, Approximation of Partial Capacitated Vertex Cover. ESA 2007: 335-346 (Contained in (40))

30. D. Amzallag, R. Bar-Yehud, D. Raz, G. Scalosub. Cell Selection in 4G Cellular Networks, 27th IEEE International Conference on Computer Communications, Joint Conference of the IEEE Computer and Communications Societies, 13-18 April 2008, Phoenix, AZ, INFOCOM 10(2): 198-206, 2008, (Contained in (43))

31. R. Bar-Yehuda, D. Hermelin and D. Rawitz. An extension of the Nemhauser & Trotter Theorem to generalized vertex cover with applications. Preliminary version appeared in 7th WAOA, 2009. (Contained in (39))

32. Bar-Yehuda R., Danny Hermelin and D. Rawitz. Minimum vertex cover in rectangle graphs. Preliminary version appeared in 18th ESA, LNCS 6346:255-266, 2010. (Contained in (41))

33. Bar-Yehuda R., G. Polevoy and D. Rawitz. Bandwidth allocation in cellular networks with multiple interferences. Preliminary version appeared in 6th DIALM-POMC, 33-42, 2010. (Contained in (44))

34. D. Amzallag, R Bar-Yehuda, D. Raz, D. and G. Scalosub, Cell Selection in 4G Cellular Networks, IEEE Infocom 2008 (Contained in (43))

35. Bar-Yehuda R., E. Kantor, S. Kutten, D. Rawitz, Growing Half-Balls: Minimizing Storage and Communication Costs in CDNs. ICALP (2) 2012: 416-427 (Contained in (48))

36. Bar-Yehuda R., M. Beder, and D. Rawitz. A constant factor approximation algorithm for the storage allocation problem. 25th SPAA, 204-213, 2013 BBR14 (Contained in (45))

37. Bar-Yehuda R., G. Kutiel, and D. Rawitz. 1.5-Approximation Algorithm for the 2-Convex Recoloring Problem. 26th IWOCA, 2015. (Contained in (46))

38. Reuven Bar-Yehuda, Keren Censor-Hillel, Gregory Schwartzmana, A Distributed $(2+\epsilon)$-Approximation for Vertex Cover in $O(\log\Delta/\epsilon\log\log\Delta)$ Rounds, Best Student Paper Award, PODC 2016 (Contained in (47))

39. Reuven Bar-Yehuda, Keren Censor-Hillel, Yannic Maus, Shreyas Pai, Sriram V. Pemmaraju: Distributed Approximation on Power Graphs. PODC 2020: 501-510

Special Professional Activities

Summer 1999 Visiting Scientist, Bell Labs, Lucent Technologies, Murray Hill, NJ.

August 2000 Visiting Scientist, Bell Labs, Lucent Technologies, Murray Hill, NJ.

July 2000 Visiting Scientist, IBM T. J. Watson Research Center, Yorktown Heights, NY.

August 2005 Visiting Scientist, IBM T. J. Watson Research Center, Yorktown Heights, NY.

August 2006 Visiting Scientist, IBM T. J. Watson Research Center, Yorktown Heights, NY.

Summer 2010 Visiting Scientist, City University of New York. NY.

Summer 2012 Visiting Scientist, City University of New York. NY.

Summer 2014 Visiting Scientist, City University of New York. NY.

Summer 2015 Visiting Scientist, City University of New York. NY.