

Date: January 2012

RESUME

Full name: Ron Lavi
Identity No. 029007366
Date and place of birth: 17.2.1972, Jerusalem, Israel
Marital status: Married + two children.
Web site: <http://ie.technion.ac.il/~ronlavi>

ACADEMIC DEGREES

2004, Ph.D. in Computer Science, The Hebrew University
Thesis title: "Auction Theory in Computational Settings"
1999, M.Sc. in Computer Science, The Hebrew University
1993, B.Sc. in Economics and Computer Science, The Hebrew University

ACADEMIC APPOINTMENTS

2006 – present, Senior Lecturer, Faculty of Industrial Engineering and Management, Technion – Israel Institute of Technology
2004 – 2006, Post-doctoral fellow, Social and Information Sciences Laboratory, California Institute of Technology.

PROFESSIONAL EXPERIENCE

2011 - 2012, visiting researcher, Microsoft Research Israel
2008, consultant, Google Tel-Aviv
1993 – 1999, systems and communication-networks engineer, The Israeli Air Force

RESEARCH INTERESTS

Mechanism design, auction theory, E-commerce, computational aspects of game theory

TEACHING EXPERIENCE

Auction Theory (graduate and advanced undergraduate)

Auction Theory for MBA students

Introduction to Financial Management (a mandatory course in the undergraduate economics program)

PUBLIC PROFESSIONAL ACTIVITIES

2006, reviewer and panelist member for an NSF grants committee

2007-2009, reviewer for the U.S.- Israel Bi-national Science Foundation and the Israeli Science Foundation

2009, member of an ISF grants committee

2009, reviewer for an NSF grants committee

Reviewer for: Games and Economic Behavior, SIAM journal on Computing, Algorithmica, Journal of the ACM, Journal of Economic Theory, Operations Research, Operations Research Letters, Journal of Artificial Intelligence Research, IEEE Journal on Selected Areas in Communications, ACM Transactions on Internet Technology, Annals of Mathematics and Artificial Intelligence, Electronic Commerce Research, International Journal of Game Theory, Artificial Intelligence Journal, Mathematical Social Sciences, Information Processing Letters, ACM Transactions on Algorithms, Mathematics of Operations Research, Autonomous Agents and Multi-Agent Systems, IEEE Systems Journal, ACM Transactions on Computation Theory, Dynamic Games and Applications, Various CS conferences (FOCS, STOC, SODA, ACM-EC, PODC, WINE, APPROX, IJCAI, etc.)

Program Committees

The 7th ACM Conference on Electronic Commerce (EC), University of Michigan, June 2006

The 21st National Conference on Artificial Intelligence (AAAI), Carnegie-Mellon University, July 2006

The 8th ACM Conference on Electronic Commerce (EC), San-Diego, June 2007

The 22nd National Conference on Artificial Intelligence (AAAI), Vancouver, July 2007

The 11th conference on Theoretical Aspects of Rationality and Knowledge (TARK), Brussels, June 2007

The 9th ACM Conference on Electronic Commerce (EC), Chicago, July 2008

The 23rd National Conference on Artificial Intelligence (AAAI), Chicago, July 2008

The 10th ACM Conference on Electronic Commerce (EC), Stanford University, July 2009

The 2nd International Symposium on Algorithmic Game Theory, (SAGT), Cyprus, October 2009

The 5th Workshop on Internet and Network Economics (WINE), Rome, Italy, December 2009

The 11th ACM Conference on Electronic Commerce (EC), Harvard University, June 2010

The 6th Workshop on Ad Auctions, Harvard University, June 2010

The 12th ACM Conference on Electronic Commerce (EC), San Jose, June 2011

The 4th International Symposium on Algorithmic Game Theory (SAGT), Salerno, Italy, October 2011

The 7th Workshop on Internet and Network Economics (WINE), Singapore, December 2011

The 13th ACM Conference on Electronic Commerce (EC), Valencia, Spain, June 2012

The 11th Meeting of the Society for Social Choice and Welfare, New-Delhi, India, August 2012

HONORS

- 2011 Award for Research Cooperation and High Excellence in Science (ARCHES) -- a prize funded by the Federal German Ministry of Education and Research, via the MINERVA foundation.
- 2009 Outstanding Paper Award, the 10th ACM Conference on Electronic Commerce.
- 2003-2004 Study scholarship from the authority for research students, The Hebrew University
- 2003-2004 Leibniz Student Fellowship, Hebrew University
- 2001-2004 Vatat scholarship for Ph.D. studies, Hebrew University.
- 1992 Dean's list of excellent undergraduate students, Hebrew University.

GRADUATE STUDENTS

Completed Theses

- Irena Schein, M.Sc. 2010, Bayesian Analysis of Sequential Auctions under Future Uncertainties. (Current status: Ph.D. student at Aarhus University, Denmark).
- Liri Finkelstein, M.Sc. 2011, Two Algorithms for the Matroid Secretary Problem
- Alex Bogautov, M.Sc. 2011, Iterated Deletion of P-Dominated Strategies in Discrete Position Auctions (Current status: Officer in the Israeli air force).
- Marina May, M.Sc. 2011, The Incompatibility of Strategy-proofness and Pareto-optimality in Quasi-linear Settings with Public Budget Constraints (Current status: Officer in the Israeli navy).

POST-DOCTORAL STUDENTS

Oren Ben-Zwi, 10/2010 – 9/2012

Amitabh Trehan, 10/2010 – 9/2012, joint supervision with Shay Kutten

RESEARCH GRANTS

- 2007 – 2011 “Impossibilities and Alternative Solution Concepts for Algorithmic Mechanism Design”. A BSF grant joint with Robert Kleinberg (Cornell University).
- 2007 – 2010 “Algorithmic Game Theory for Auction Design and Electronic Social Systems”. ISF grant.
- 2010 – 2012 “Manipulation-Resistant Protocols for the Internet”. A grant from the Israeli ministry of science, joint with Sarit Kraus (Bar-Ilan Univ.), Yishay Mansour (Tel-Aviv Univ.), and Jeff Rosenschein (Hebrew Univ.).
- 2011 – 2013 A grant from the Google inter-university center for Electronic Markets and Auctions, joint with 20 researchers from Hebrew University, Tel-Aviv University, and Technion.
- 2012 A grant from the Technion-Microsoft research center, to conduct two research projects: “Composition Games for Distributed Systems” (joint with Shay Kutten), and “Pricing in Cloud Computing and Online Auctions” (joint with Seffi Naor).
- 2012 – 2015 “Dynamic Mechanism Design”, funded by the Federal German Ministry of Education and Research, via the MINERVA foundation. Joint with Sophie Bade (Max Planck Institute)

PUBLICATIONS

Papers marked with [*] are joint with a student advisee

Theses

Ron Lavi, “The Home Model for Load Balancing in a Computing Cluster”, M.Sc. Thesis, The Hebrew University, 1999

Ron Lavi, “Auction Theory in Computational Settings”, Ph.D. Thesis, The Hebrew University, 2004

Refereed papers in professional journals

Published papers

1. R. Lavi and N. Nisan, “Competitive Analysis of Incentive Compatible On-Line Auctions”, *Theoretical Computer Science*, 310, pp. 159 –180, 2004
2. ¹S. Bikhchandani, S. Chatterji, R. Lavi, A. Mu'alem, N. Nisan, and A. Sen, “Weak monotonicity characterizes deterministic dominant strategy implementation”, *Econometrica* 74(4), pp. 1109 – 1132, 2006
3. R. Lavi, A. Mu'alem, and N. Nisan, “Two Simplified Proofs for Roberts' Theorem”, *Social Choice and Welfare* 32, pp. 407 – 423, 2009
4. M. Babaioff, R. Lavi, and E. Pavlov, “Single Value Combinatorial Auctions and Algorithmic Implementation in Undominated Strategies”, *Journal of the ACM*, 56(1), pp. 4:1 – 4:32, 2009
5. R. Lavi and C. Swamy, “Truthful Mechanism Design for Multi Dimensional Scheduling via Cycle Monotonicity”, *Games and Economic Behavior*, 67, pp. 99 – 124, 2009
6. I. Ashlagi, M. Braverman, A. Hassidim, R. Lavi, and M. Tennenholtz, “Position Auctions with Budgets: Existence and Uniqueness”, *The Berkeley Electronic Journal of Theoretical Economics (Advances)*, Vol. 10(1), Article 20 (30 pages), 2010
7. R. Lavi and C. Swamy, “Truthful and Near-optimal Mechanism Design via Linear Programming”, *Journal of the ACM*, pp. 25:1 – 25:24, Vol. 58(6), 2011
8. [*] R. Lavi and Marina May, “A Note on the Incompatibility of Strategy-proofness and Pareto-optimality in Quasi-linear Settings with Public Budget Constraints”. *Economics Letters*, Vol. 115, pp. 100-103, 2012

Accepted papers

9. S. Dobzinski, R. Lavi, and N. Nisan, “Multi-Unit Auctions with Budget Limits”. Accepted to *Games and Economic Behavior*, August 2011
10. I. Ashlagi, S. Dobzinski, and R. Lavi, “An Optimal Lower Bound for Anonymous Scheduling Mechanisms”. Accepted to *Mathematics of Operations Research*, December 2011

¹ This is a merge of two papers, by Lavi, Mu'alem, and Nisan, and by Bikhchandani, Chatterji, and Sen, as suggested by the editor of *Econometrica*.

Submitted papers

1. [*] R. Lavi and S. Oren, “Side-Communication Yields Efficiency of Ascending Auctions: The Two-Item Case”. Revise-and-Resubmit to *Games and Economic Behavior*
2. R. Lavi and E. Segev, “Efficiency Levels in Sequential Auctions with Dynamic Arrivals”. Submitted to *International Journal of Game Theory*
3. R. Lavi and N. Nisan, “Online Ascending Auctions for Gradually Expiring Items”. Submitted to *Journal of Economic Theory* (invited to a special issue on Econ/CS papers)
4. H. Fu, R. D. Kleinberg, and R. Lavi, “Conditional Equilibrium Outcomes via Ascending Price Processes”. Submitted to *Theoretical Economics*
5. [*] S. Kutten, R. Lavi, and A. Trehan, “Composition Games for Distributed Systems: the EU Grant games”. To be submitted shortly
6. N. Alon, M. Babaioff, R. Karidi, R. Lavi, and M. Tennenholtz, “Sequential Voting with Externalities: Herding in Social Networks”. To be submitted shortly

Book Chapters and Review Papers

R. Lavi, “Computationally-Efficient Approximation Mechanisms”, In N. Nisan, T. Roughgarden, E. Tardos and V. Vazirani, editors, *Algorithmic Game Theory*, pp. 301 – 329, Cambridge University Press, 2007.

R. Lavi, “Searching for the Possibility – Impossibility Border of Truthful Mechanism Design”, ACM SIGecom Exchanges 7(1), pp. 1 – 5, 2007.

R. Lavi, “Algorithmic Mechanism Design”, In Ming-Yang Kao, editor, *Encyclopedia of Algorithms*, pp. 16 – 25, Springer, 2008.

R. Lavi, “Mechanism Design”, In Robert A. Meyers, editor, and Marilda Sotomayor, section editor for Game Theory, *Encyclopedia of Complexity and System Science*, pp. 5510 – 5523, Springer, 2009.

CONFERENCES

Invited talks

Electronic Market Design, Schloss Dagstuhl, Germany, June 2002

Algorithmic Game Theory and the Internet, Schloss Dagstuhl, Germany, July 2003

The DIMACS workshop on large-scale games, Northwestern University, April 2005

The INFORMS 2005 annual meeting, San Francisco, November 2005

Second Bertinoro Workshop on Algorithmic Game Theory, Italy, July 2006

Computational Social Systems and the Internet, Schloss Dagstuhl, Germany, July 2007

The DIMACS workshop on the Boundary between Economic Theory and Computer Science, Rutgers University, October 2007

Multidimensional Mechanism Design, The Hausdorff Research Institute for Mathematics, Bonn, Germany, July 2009.

The Hitotsubashi Conference on Choice, Games, and Welfare, Tokyo, Japan, September 2009.

Third Bertinoro Workshop on Algorithmic Game Theory, Italy, March 2010

Midwest Economic Theory Meeting, Northwestern University, May 2010

Workshop on Prior-free Mechanism Design, Center for Mathematical Research (CIMAT), Guanajuato, Mexico, May 2010

Sixth Ad Auctions Workshop, Harvard University, June 2010

Reasoning about Interaction: From Game Theory to Logic and Back, Schloss Dagstuhl, Germany, March 2011

Tel Aviv International Ad Auctions Workshop, Tel-Aviv University, June 2011

New Trends in Mechanism Design, Center for Electronic Markets, Copenhagen Business School, September 2011

The Arne Ryde Memorial Lectures 2011, Lund University, Sweden, September 2011

Refereed papers in conference proceedings

R. Lavi and A. Barak, "Improving the PVM Daemon Network Performance by Direct Network Access", *Proceedings of the 5th EuroPVM/MPI'98*, Springer, pp. 44-51, 1998.

R. Lavi and N. Nisan, “Competitive Analysis of Incentive Compatible On-Line Auctions”, *Proceedings of the 2nd ACM Conference on Electronic Commerce (EC)*, ACM Press, pp. 233 – 241, 2000.

R. Lavi and A. Barak, “The Home Model and Competitive Algorithms for Load Balancing in a Computing Cluster”, *Proceedings of the 21st International Conference on Distributed Computing Systems (ICDCS)*, IEEE Computer Society, pp. 127 – 134, 2001.

R. Lavi, A. Mu’alem, and N. Nisan, “Towards a Characterization of Truthful Combinatorial Auctions”, *Proceedings of the 44th Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, IEEE Computer Society, pp. 574 – 583, 2003.

Y. Bartal, F.Y.L. Chin, M. Chrobak, S.P.Y. Fung, W. Jawor, R. Lavi, J. Sgall, T. Tichy, “Online competitive algorithms for maximizing weighted throughput of unit jobs”, *Proceedings of the 21st Annual Symposium on Theoretical Aspects of Computer Science (STACS)*, Springer, pp. 187 – 198, 2004.

R. Lavi and C. Swamy, “Truthful and Near-optimal Mechanism Design via Linear Programming”, *Proceedings of the 46th Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, IEEE Computer Society, pp. 595 – 604, 2005.

M. Babaioff, R. Lavi, and E. Pavlov, “Mechanism Design for Single-Value Domains”, *Proceedings of the 20th National Conference on Artificial Intelligence (AAAI)*, AAAI Press / The MIT Press, pp. 241 – 247, 2005.

R. Lavi and N. Nisan, “Online Ascending Auctions for Gradually Expiring Items”, *Proceedings of the 16th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, SIAM Press, pp. 1146 – 1155, 2005.

M. Babaioff, R. Lavi, and E. Pavlov, “Impersonation-Based Mechanisms”, *Proceedings of the 21st National Conference on Artificial Intelligence (AAAI)*, AAAI Press, 2006.

M. Babaioff, R. Lavi, and E. Pavlov, “Single Value Combinatorial Auctions and Implementation in Undominated Strategies”, *Proceedings of the 17th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, ACM Press, pp. 1054 – 1063, 2006.

R. Lavi and C. Swamy, “Truthful Mechanism Design for Multi-Dimensional Scheduling via Cycle Monotonicity”, *Proceedings of the 8th ACM Conference on Electronic Commerce (EC)*, ACM Press, pp. 252 -- 261, 2007.

S. Dobzinski, R. Lavi, and N. Nisan, “Multi-Unit Auctions with Budget Limits”, *Proceedings of the 49th Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, IEEE Computer Society, pp. 250 – 259, 2008.

I. Ashlagi, S. Dobzinski, and R. Lavi, “An Optimal Lower Bound for Anonymous Scheduling Mechanisms”, *Proceedings of the 10th ACM Conference on Electronic Commerce (EC)*, ACM Press, pp. 169 – 176, 2009.

[*] R. Lavi and S. Oren, “Side-Communication Yields Efficiency of Ascending Auctions: The Two-Item Case (working paper)”. *Proceedings of the Second Conference on Auctions, Market Mechanisms and Their Applications (AMMA)*, 2011

[*] R. Lavi and Marina May, “A Note on the Incompatibility of Strategy-proofness and Pareto-optimality in Quasi-linear Settings with Public Budget Constraints (working paper)”. *Proceedings of the 7th Workshop on Internet and Network Economics (WINE)*, 2011

[*] Shay Kutten, Ron Lavi and Amitabh Trehan, “Composition Games for Distributed Systems: the EU Grant games (brief announcement)”. *Proceedings of the 25th International Symposium on Distributed Computing (DISC)*, 2011 (Abstract also in Proceedings of the 7th Workshop on the Economics of Networks, Systems and Computation (NetEcon'12))

Participation in organizing conferences

The 2005 SISL workshop, California Institute of Technology, October 2005, Co-organizer (with S. Crockett, A. Galeotti, and T. Stoenescu)

Workshop on Alternative Solution Concepts, University of Michigan, June 2006, Co-organizer (with J. Hartline and A. Ronen)