Omer Lev — Curriculum Vitæ

Omer Lev
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Member of the department of Industrial Engineering and Management at Ben-Gurion University.

Research Interests

Multi-stage/party voting, Crowd activities (crowdsourcing, crowdfunding), social networks, mechanism design, and computational social choice. Analysis using algorithmic game theory, simulations, and real-world data.

Education

PhD. in Computer Science, Hebrew University of Jerusalem – 2010-2015
Advised by Prof. Jeffrey S. Rosenschein, and part of the MultiAgent Systems (MAS) group.
Thesis: *Agent Modeling of Human Interaction: Stability, Dynamics and Cooperation.*

MSc. in Mathematics, Hebrew University of Jerusalem – 2007-2010
Advised by Prof. Sergiu Hart, on multi-item auctions.
Thesis: *A Two-Dimensional Problem of Revenue Maximization.*

MBA, Hebrew University of Jerusalem (as part of the CS-MBA program) – 2007-2008
Majored in finance and business strategy.

BSc. in Computer Science and Mathematics (and graduate of the "Amirim" excellence program for Faculty of Science students), Hebrew University of Jerusalem – 2004-2007
Graduated cum laude.

Professional Experience

Ben-Gurion University – 2017-

University of Toronto – 2015-2017
Post-doctoral fellow at the department of computer science. Hosted by Prof. Allan Borodin.

Microsoft Research – 2013-2015
Working at Microsoft Research on various research directions, particularly in game theory and recommendation systems.

NDS [now Synamedia] – 2006-2013
Worked as a part-time programmer at NDS Technologies, specifically in smart-card development. Programming mainly in C/C++, C# and ASP.NET (and a bit in Python).

Teaching

Designing and teaching the course “Foundations of AI” during 2018-2024.
Teaching “Foundations of Algorithms and Complexity” and “IT Infrastructure” during 2018-2024.
Taught the course “Mathematical Foundations of Artificial Intelligence” during spring 2014 and 2015.
Teaching assistant for "Operating Systems" course during spring 2011, 2012 and 2013.
Junior teaching assistant for “Mathematical Logic (1)” and “Infinitesimal Calculus (2)” during 2008 and 2009.

Honors

Awarded Microsoft Research PhD. scholarship.
MSc. Excellence award during the 2007/8 academic year.
Dean's list for the 2004/5 and 2005/6 academic years.

Publications

Truth, Justice, and Secrecy: Cake Cutting Under Privacy Constraints — AAAI 2026
Yaron Salman, Tamir Tassa, Omer Lev and Roie Zivan.

Who Reviews The Reviewers? A Multi-Level Jury Problem — AAMAS 2025
Ben Abramowitz, Omer Lev and Nicholas Mattei.

Insights Regarding the Success of Damping in Improving Belief Propagation — AAMAS 2025
Uriel Zaed, Roie Zivan and Omer Lev.

Separate but equal: Equality in belief propagation for single-cycle graphs — Artificial Intelligence Journal (AIJ), January 2025
Erel Cohen, Ben Rachmut, Omer Lev and Roie Zivan.

Natural Interviewing Equilibria in Matching Settings — Social Choice and Welfare (SCW), August 2024
Allan Borodin, Joanna Drummond, Kate Larson and Omer Lev.

Impartial Peer Selection: An Annotated Reading List — ACM SIGecom Exchanges, July 2024
Omer Lev, Harper Lyon and Nicholas Mattei.

Towards a More Burkean Approach to Computational Social Choice — AAAI 2024 (Senior member presentation; Blue-sky idea talk)
Omer Lev.

Primarily About Primaries — Artificial Intelligence Journal (AIJ), April 2024
Allan Borodin, Omer Lev, Nisarg Shah and Tyrone Strangway.

Follow the money: Techniques for pricing rewards in crowdfunding projects — Electronic Commerce Research and Applications (ECRA), November–December 2023
Bar Keisar and Omer Lev.

Ask and You Shall be Served: Representing and Solving Multi-agent Optimization Problems with Service Requesters and Providers — AAMAS 2023
Maya Lavie, Tehila Caspi, Omer Lev and Roie Zivan.

PeerNomination: A novel peer selection algorithm to handle strategic and noisy assessments — Artificial Intelligence Journal (AIJ), March 2023
Omer Lev, Nicholas Mattei, Paolo Turrini, and Stanislav Zhydkov.

Separate But Equal: Equality in Belief Propagation for Single Cycle Graphs — AAAI 2023
Erel Cohen, Omer Lev and Roie Zivan.

Predicting Voting Outcomes in the Presence of Communities, Echo Chambers and Multiple Parties — Artificial Intelligence Journal (AIJ), November 2022
Jacques Bara, Omer Lev and Paolo Turrini.

Hotelling-Downs Equilibria: Moving Beyond Plurality Variants — GDN 2022
Alexander Karpov, Omer Lev and Svetlana Obraztsova.

Little House (Seat) on the Prairie: Compactness, Gerrymandering, and Population Distribution — AAMAS 2022
Allan Borodin, Omer Lev, Nisarg Shah and Tyrone Strangway.

Predicting Voting Outcomes in Presence of Communities — AAMAS 2021
Jacques Bara, Omer Lev and Paolo Turrini.

The Price is (Probably) Right: Learning Market Equilibria from Samples — AAMAS 2021
Omer Lev, Neel Patel, Vignesh Viswanathan and Yair Zick.

One Size Does Not Fit All: A Study of Badge Behavior in Stack Overflow — Journal of the Association for Information Science and Technology (JASIST), March 2021
Stav Yanovsky, Nicholas Hoernle, Omer Lev and Kobi Gal.

Selecting Voting Locations for Fun and Profit — IJCAI 2020
Zack Fitzsimmons and Omer Lev.

Beyond Trees: Analysis and Convergence of Belief Propagation in Graphs with Multiple Cycles — AAAI 2020
Roie Zivan, Omer Lev and Rotem Galiki.

Strategyproof peer selection using randomization, partitioning, and apportionment — Artificial Intelligence Journal (AIJ), October 2019
Haris Aziz, Omer Lev, Nicholas Mattei, Jeffrey S. Rosenschein and Toby Walsh.

One Size Does Not Fit All: Badge Behavior in Q&A sites — UMAP 2019
Stav Yanovsky, Nicholas Hoernle, Omer Lev and Kobi Gal.

Primarily About Primaries — AAAI 2019
Allan Borodin, Omer Lev, Nisarg Shah and Tyrone Strangway.

Heuristic Voting as Ordinal Dominance Strategies — AAAI 2019
Omer Lev, Reshef Meir, Svetlana Obraztsova and Maria Polukarov.

“Reverse Gerrymandering”: Manipulation in Multi-Group Decision Making — AAAI 2019
Omer Lev and Yoad Lewenberg.

Big City vs. the Great Outdoors: Voter Distribution and How it Affects Gerrymandering — IJCAI 2018
Allan Borodin, Omer Lev, Nisarg Shah and Tyrone Strangway.

Socially Motivated Partial Cooperation in Multi-agent Local Search — IJCAI 2018
Tal Ze'evi, Roie Zivan and Omer Lev.

Seasonal Goods and Spoiled Milk: Pricing for a Limited Shelf-Life — AAMAS 2018
Atiyeh Ashari Ghomi, Allan Borodin and Omer Lev.

Convergence and Quality of Iterative Voting Under Non-Scoring Rules — IJCAI 2017
Aaron Koolyk, Tyrone Strangway, Omer Lev and Jeffrey S. Rosenschein.

Group Recommendations: Axioms, Impossibilities, and Random Walks — TARK 2017
Omer Lev and Moshe Tennenholtz.

Distant Truth: Bias Under Vote Distortion Cost — AAMAS 2017
Svetlana Obraztsova, Omer Lev, Evangelos Markakis, Zinovi Rabinovich and Jeffrey S. Rosenschein.

Divide and Conquer: Using Geographic Manipulation to Win District-Based Elections — AAMAS 2017
Yoad Lewenberg, Omer Lev and Jeffrey S. Rosenschein.

Agent Failures in All-Pay Auctions — IEEE Intelligent Systems, January-February 2017
Yoad Lewenberg, Omer Lev, Yoram Bachrach and Jeffrey S. Rosenschein.

Convergence of Iterative Scoring Rules — Journal of AI Research (JAIR), December 2016
Omer Lev and Jeffrey S. Rosenschein.

Misrepresentation in District Voting — IJCAI 2016
Yoram Bachrach, Omer Lev, Yoad Lewenberg and Yair Zick.

Budgetary Effects on Pricing Equilibrium in Online Markets — AAMAS 2016
Allan Borodin, Omer Lev and Tyrone Strangway.

Strategyproof Peer Selection: Mechanisms, Analyses, and Experiments — AAAI 2016
Haris Aziz, Omer Lev, Nicholas Mattei, Jeffrey S. Rosenschein and Toby Walsh.

How Robust is the Wisdom of the Crowds? — IJCAI 2015
Noga Alon, Michal Feldman, Omer Lev and Moshe Tennenholtz.

Impartial Peer Review — IJCAI 2015
David Kurokawa, Omer Lev, Jamie Morgenstern and Ariel D. Procaccia.

An Axiomatic Approach to Routing — TARK 2015
Omer Lev, Moshe Tennenholtz and Aviv Zohar.

Beyond Plurality: Truth-Bias in Binary Scoring Rules — ADT 2015
Svetlana Obraztsova, Omer Lev, Evangelos Markakis, Zinovi Rabinovich and Jeffrey S. Rosenschein.

The Pricing War Continues: On Competitive Multi-Item Pricing — AAAI 2015
Omer Lev, Joel Oren, Craig Boutilier and Jeffrey S. Rosenschein

Analysis of Equilibria in Iterative Voting Schemes — AAAI 2015
Zinovi Rabinovich, Svetlana Obraztsova, Omer Lev, Evangelos Markakis and Jeffrey S. Rosenschein.

A Local-Dominance Theory of Voting Equilibria — EC 2014
Reshef Meir, Omer Lev and Jeffrey S. Rosenschein.

Cooperative Weakest Link Games — AAMAS 2014
Yoram Bachrach, Omer Lev, Shachar Lovett, Jeffrey S. Rosenschein and Morteza Zadimoghaddam.

Agent Failures in All-Pay Auctions — IJCAI 2013
Yoad Lewenberg, Omer Lev, Yoram Bachrach and Jeffrey S. Rosenschein.

Mergers and Collusion in All-Pay Auctions and Crowdsourcing Contests — AAMAS 2013
Omer Lev, Maria Polukarov, Yoram Bachrach and Jeffrey S. Rosenschein.

Empirical Analysis of Plurality Election Equilibria — AAMAS 2013
David R.M. Thompson, Omer Lev, Kevin Leyton-Brown and Jeffrey S. Rosenschein.

Convergence of Iterative Voting — AAMAS 2012
Omer Lev and Jeffrey S. Rosenschein.

An Algorithm for the Coalitional Manipulation Problem under Maximin — AAMAS 2011
Michael Zuckerman, Omer Lev and Jeffrey S. Rosenschein.

A Two-Dimensional Problem of Revenue Maximization — Journal of Mathematical Economics, December 2011 [*MSc. thesis]*
Omer Lev.

On the Relative Succinctness of Nondeterministic Büchi and co-Büchi Word Automata — LPAR 2008 [*"Amirim" project]*
Benjamin Aminof, Orna Kupferman and Omer Lev.

Research students

MSc. students
7 MSc. students advised.

PhD. students
2 PhD. students ongoing.

External grants

NSF-BSF (Joint US National Science Fund — US-Israel Binational Science Fund) – 2022-2025
"Mechanisms and Algorithms for Improving Peer Selection".
(with US partner Prof. Nicholas Mattei, Tulane University)

ISF (Israel Science Fund) – 2020-2024
"Multi-stage Decision-Making Processes".

ISF (Israel Science Fund) **New-Faculty Equipment Grants** – 2020-2024
"Multi-agent and crowd-activity analysis".

GIF (German Israel Fund) **Young** – 2019
"Party-Based Voting".

Service

Chair
COMSOC 2023, the main workshop of the computation social choice community.

Board member
COMSOC steering committee (from 2023)
Israeli AI Association (IAAI)

Co-organizer
Incentives, Games & Agents 2019, 2020, 2021, 2022, 2023 workshops (AAMAS workshops)
AI^3 2018 workshop (IJCAI-AAMAS workshop).
EXPLORE 2017 workshop (an AAMAS workshop)

Senior PC member
AAAI (2020-23), ECAI (2020), IJCAI (2021-23), AAMAS (2023).

PC member
IJCAI (2015-19), AAAI (2017-19), AAMAS (2017-21), ICML (2019), NeurIPS (2019), ECAI (2016).
[workshops: EXPLORE (2015-16), COOPMAS (2016), COMSOC (2018)]

Reviewer

IJCAI (2013), AAAI (2011, 2014-16), EC (2014-17), STOC (2017, 2025), FOCS (2018), AAMAS (2012-16), WINE (2013-16), WSDM (2016), ICWSM (2014), SAGT (2014), AIES (2018-19).
[workshop: COMSOC (2012, 2014, 2016)]

Journal reviewer

AIJ, JAIR, TEAC, JAAMAS, SCW, TOCS, JCSS, MOR, JME and EJOR.