

# Alon Altman

## 1 Research and Technical Interests

**Current:** Ranking systems, Recommender Systems, Online Reputation Systems, Axiomatic Foundations, Artificial Intelligence, Game Theory, Electronic Commerce, Multi-agent Systems, Mechanism design, Voting, Machine Learning, Experimental Economics, Cognitive Psychology Graph Theory, Logic, Applications.

**Past:** Natural Language Processing, Semantics of Natural Language, Scope Ambiguities and Entailment, Natural Language Syntax, Automated Parsing of Natural Language.

**Technical Interests:** Operating Systems (Linux, UNIX, Windows), Systems, Programming, Scripting Languages, Networking, Security, DRM, Multimedia, Web design and programming.

## 2 Education

Ph.D. Information Systems Engineering, Technion, 2007.

M.Sc. Computer Science, Technion, 2004

B.Sc. Computer Science, Technion, 2001, *Summa Cum Laude*

## 3 Prizes and Scholarships

- Extended Guthwirth Prize for Research Excellence, Technion IIT, 2005.
- IBM Ph.D. Fellowship, 2004-2005.
- Excellence scholarship from the Technion Graduate School, 2001
- Fellow of The Chais Family Foundation Program for Exceptionally Gifted Students under guidance of Assoc. Prof. Eli Biham, including a full scholarship, 1998-2001.
- Excellence diplomas from the Undergraduate school for 3 semesters in a row, 1999-2001.
- Prize for excellence in studies by the Computer Science faculty's excellence program (SAMBA), 2000.

## 4 Publications

### 4.1 Working Papers

Thuc Vu, Alon Altman, and Yoav Shoham. “Optimal seeding in balanced knockout tournaments of realistic size”, 2009. Unpublished.

### 4.2 Conference Papers

Alon Altman, Edward Keenan, and Yoad Winter. “Monotonicity and relative scope relations”. In *Proceedings of the 14th Amsterdam Colloquium*. 2001.

Alon Altman and Moshe Tennenholtz. “Ranking systems: the PageRank axioms”. In *EC '05: Proceedings of the 6th ACM conference on Electronic commerce*, 1–8. ACM Press, New York, NY, USA, 2005.

Alon Altman and Moshe Tennenholtz. “On the axiomatic foundations of ranking systems.” In *Proc. 19th International Joint Conference on Artificial Intelligence*, 917–922. 2005.

Alon Altman and Moshe Tennenholtz. “Quantifying incentive compatibility of ranking systems.” In *Proc. of AAAI-06*. 2006.

Alon Altman, Avivit Bercovici-Boden, and Moshe Tennenholtz. “Learning in one-shot strategic form games.” In *Proceedings of ECML 2006*, 6–17. 2006.

Alon Altman and Moshe Tennenholtz. “Incentive compatible ranking systems”. In *Proc. of AAMAS-07*. 2007.

Alon Altman and Moshe Tennenholtz. “An axiomatic approach to personalized ranking systems”. In *Proc. 20th International Joint Conference on Artificial Intelligence*. 2007.

Alon Altman and Moshe Tennenholtz. “Strategyproof deterministic lotteries under broadcast communication”. In *7th International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS 2008), Estoril, Portugal, May 12-16, 2008, Volume 3*, 1549–1552. 2008.

Thuc Vu, Alon Altman, and Yoav Shoham. “On the agenda control problem for knockout tournaments”. In *Proceedings of the 2nd International Workshop on Computational Social Choice (COMSOC-2008)*, 415–426. 2008.

Thuc Vu, Alon Altman, and Yoav Shoham. “On the complexity of schedule control problems for knockout tournaments”. In *Proc. of AAMAS-09*. 2009.

Alon Altman, Ariel Procaccia, and Moshe Tennenholtz. “Nonmanipulable selections from a tournament”. In *Proc. 21st International Joint Conference on Artificial Intelligence*. 2009.

Chris Archibald, Alon Altman, and Yoav Shoham. “Analysis of a winning computational billiards player”. In *Proc. 21st International Joint Conference on Artificial Intelligence*. 2009.

### 4.3 Journal Papers

Khalil Sima’an, Alon Itai, Yoad Winter, Alon Altman, and Noa Nativ. “Building a tree-bank of modern hebrew text”. *Traitement automatique des langues*, 42:347–380, 2 2001.

Alon Altman, Ya’Acov Peterzil, and Yoad Winter. “Scope dominance with upward monotone quantifiers”. *J. of Logic, Lang. and Inf.*, 14(4):445–455, 2005.

Alon Altman and Yoad Winter. “Computing dominant readings with upward monotone quantifiers”. *Research on Language and Computation*, 3(1):1–43, April 2005.

Alon Altman and Moshe Tennenholtz. “Axiomatic foundations for ranking systems”. *Journal of Artificial Intelligence Research (JAIR)*, 31:473–495, 2008.

Alon Altman and Moshe Tennenholtz. “An axiomatic approach to personalized ranking systems”. *Journal of the ACM*, 2009. To appear.

### 4.4 Theses

Alon Altman. *The Axiomatic Approach to Ranking Systems*. Ph.D. thesis, Technion – Israel Institution of Technology, 2007.

Alon Altman. *Computation and Specification of Scope Dominance with Monotone Quantifiers in Natural Language*. Master’s thesis, Technion – Israel Institution of Technology, 2003.

## 5 Invited talks

- Dagstuhl Seminar 07431 on Computational Issues in Social Choice, October 2007.
- Seminar talks at Harvard University, Cornell University, University of Michigan, Carnegie University, University of Pennsylvania, and Stanford University — *The Axiomatic Approach to Ranking Systems*
- Haifa University Economics Department Seminar, *Ranking Systems*.
- Annual conference of the Israeli Mathematical Union 2005, *On the Axiomatic Foundations of Ranking Systems*

- Graduate School Showcase Lecture, Technion 2005, *The Mathematics of Elections: From the Ballot to Google*
- Tel Aviv University Game Theory seminar 2005, *Ranking Systems: The PageRank Axioms*
- Dagstuhl Seminar 05011 on Computing and Markets 2005, *The PageRank Axioms*.
- Technion Game Theory Seminar 2005, *The PageRank Axioms*.
- Haifa Linux Club, 12 talks, 2001-2006, See [http://haifux.org/alon\\_altman.html](http://haifux.org/alon_altman.html).

## 6 Teaching Experience (TA)

- Technion IE 096227: Multi-Agent Systems. Winter 2006.
- Technion IE 096210: MBA Advanced Electronic Commerce. Spring 2005, Winter 2005, Winter 2006.
- Technion IE 096210: Introduction to Artificial Intelligence. Winter 2004, Winter 2005.
- Technion IE 096211: Electronic Commerce Models (Spring 2005, Spring 2006, Spring 2007)
- Technion CS 234119: Introduction to Operating Systems (Spring 2000, Spring 2002)
- Technion CS 234118: Computer Organization and programming (Spring 2001)
- Technion CS 236298: Computational Semantics for Natural Language (Winter 2001)

## 7 Service and Research employment

- PC Member, the 10th ACM Conference on Electronic Commerce (EC-09), 2009.
- Reviewer, Algorithmica, 2009.
- PC Member, the twenty-first International Joint Conference on Artificial Intelligence (IJCAI-09), 2009.
- PC Member, the Eighth International Conference on Autonomous Agents and Multiagent Systems (AAMAS-09), 2009.

- PC Member, the 9th ACM Conference on Electronic Commerce (EC-08), 2008.
- PC Member, the Twenty-Third AAAI Conference on Artificial Intelligence (AAAI-08), 2008.
- PC Member, the Seventh International Conference on Autonomous Agents and Multiagent Systems (AAMAS-08), 2008.
- Reviewer, Journal of Economic Theory, 2008.
- Reviewer, the 8th ACM Conference on Electronic Commerce (EC-07), 2007.
- Board Member, Hamakor, Israeli NPO for Free Software and Open Source, 2004-2006.
- Research assistant, Hebrew Corpus project, under supervision of Dr. Yoad Winter, Faculty of Computer Science, Technion 2000.

## 8 Additional Information

- Born November 18th 1980, Haifa, Israel.
- Member of the Technion Debate club, 2000-2007.
- Languages: Hebrew (native), English.