Roni Stern   October, 2013

CURRICULUM VITAE AND LIST OF PUBLICATIONS

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Education

Ph.D.	**Ben Gurion University of the Negev, Israel**
2007 to 2011	**Department of Information Systems Engineering**
	Dissertation title: "New settings for heuristic search".
	Advisors: Dr. Ariel Felner and Dr. Meir Kalech.
M.Sc.	**Bar-Ilan University**, **Israel**
2000 to 2001	**Department of Computer Science**
	Direct M.Sc. Track
	Thesis title: "Finding the shortest path in physical unknown graphs".
	Advisors: Prof. Sarit Kraus and Dr. Ariel Felner.
B.Sc.	**Bar-Ilan University**, **Israel**
1998 to 2001	**Department of Computer Science**
	Graduated with honors.

Professional Experience

Sept. 2012- Oct. 2013	**Harvard University,** **School of Engineering and Applied Science (SEAS)** Position: Post-doctoral fellow, supervised by Prof. Barbara Grosz.
Feb. 2013- May 2013	Teaching fellow, "Advanced topics in AI" course.
Feb. 2012- Oct. 2012	**Ben-Gurion University of the Negev** Position: Research project manager. Managed the "Magneton" research project on "Reconstruction of Hidden or Non-existent Identities Through Automatic Social Networks' Crawling", in collaboration with Verint Inc. This project was funded by the Ministry of Industry and Commerce, with Prof. Yuval Elovici, Dr. Lior Rokach, Dr. Ariel Felner and Dr. Rami Puzis as Principal Investigators. The position included managing the research, leading a team of 2-4 researchers, managing the project budget, as well as participating in writing the grant application.
2011-2012	**Ben-Gurion University of the Negev,** **Department of Information Systems Engineering.** Position: Post-doctoral fellow, supervised by Dr. Ariel Felner.
2011, Summer	**Ben-Gurion University of the Negev,** **Department of Information Systems Engineering.** Position: Lecturer, "Introduction to AI" course.

2010-2011	**Ben-Gurion University of the Negev,** **Department of Information Systems Eng.** Position: Teaching Assistant.

2007-2009   **IDF, Intelligence branch, technological unit**
              Position: Research team leader
              Led a team of 2-4 researchers, working on technological research in computer networks and the internet. The position included developing algorithms in data communications, focusing on Layer 2 and 3, developing framework for experiments in Matlab, Python and C. The work included collaboration with industry and academy. Also served as acting department head for several months, which included managing 14 researchers and developers.

2002-2007   **Israeli Air Force, software unit**
              2005-2007: Software team leader and project manager
              Led a team of 6-12 developers, developing mission critical information system projects. Leading a complete software development life cycle, including functional and technical design using UML, development with various J2EE technologies and integration with proprietary hardware.

              2002-2005: Software engineer and algorithm developer
              Developed several projects with J2EE technologies. The position included algorithm and infrastructure development.

2001-2004   **Bar-Ilan University,**
              Position: Research Assistant**.**
              Developed a decision-support system for judges. The project was led by Prof. Uri Schild and Prof. Ruth Kannai.

2000-2001   **Bar-Ilan University,**
              Department of Computer Science
              Position: Teaching Assistant for courses: "Advanced programming", "Programming languages", "Introduction to Object Oriented Programming" and "Data structures".

Awards, Citations, Honors, Fellowships

- 2013 – Co-author of the paper that won the second prize winner in the challenges and visions track of the international conference on Autonomous Agents and Multi-Agent Systems (AAMAS). (second place out of 24 peer-reviewed papers)
- 2012-2013 – Post-doctoral fellowship at Harvard University (60,000 USD)
- 2012 – Co-author of the best paper in the international Symposium on Combinatorial Search (SoCS). (chosen out of 60 peer-reviewed papers)
- 2012 – Best academic work award from ITCB, the Israeli branch of the International Software Testing and Qualification Board (ISTQB).

- 2011-2012 – Kreitman post-doctoral scholarship (90,000 NIS)
- 2007-2011 – Negev scholarship for Ph.D students (320,000 NIS)
- 2009 - Intelligence branch technological unit award for a software project.
- 2006 - Ministry of Internal Security award for a research project.
- 2005 - IAF (Israeli Air Force) award of excellence.
- 2004 - IAF (Israeli Air Force) software unit award of excellence.

Scientific Publications

(a) Refereed Articles in Journals (published/accepted)

[1] Zahy Bnaya, Rami Puzis, **Roni Stern**, Ariel Felner: "Social Network Search as a Volatile Multi-armed Bandit Problem", the ASE Human Journal. To appear 2013.

[2] **Roni Stern**, Meir Kalech and Ariel Felner: "Finding cliques in physical graphs", AI Communication journal, volume 25(3), pages 229-256, 2012.

[3] Guni Sharon, **Roni Stern**, Meir Goldenberg and Ariel Felner: "The Increasing Cost Tree Search for Optimal Multi-agent Pathfinding", Artificial Intelligence Journal (AIJ). November 2012.

[4] Ariel Felner, **Roni Stern** and Jeffery Rosenchein: "Searching for Close Alternative Plans", Journal of Autonomous Agents and Multi-Agent Systems. (JAAMAS) volume 14(3), pages: 211-237, January 2007.

[5] Ariel Felner, **Roni Stern**, Asaph Ben-Yair, Sarit Kraus and Nathan Netanyahu: "PHA*: Finding the Shortest Path with A* in Unknown Physical Environments.", Journal of Artificial Intelligence Research (JAIR), Volume 21, pages 631-670, 2004.

(b) Refereed Articles in Journals: submitted

[6] **Roni Stern**, Ariel Felner,Rami Puzis, Jur van den-Berg, Rajat Shah and Ken Goldberg: "Potential-Based Bounded-Cost Search and Non-Parametric Anytime A*" Submitted after revision to Artificial Intelligence Journal. Septermber 2013, **under review**.

[7] Amit Metodi, **Roni Stern**, Meir Kalech and Michael Codish: "Compiling Model-Based Diagnosis to Boolean Satisfaction", submitted to Artificial Intelligence Journal (AIJ). November 2012. **Under review.**

[8] Guni Sharon, **Roni Stern,** Ariel Felner, Nathan Sturtevant: "Conflict-based Search for Optimal Multi-agent Pathfinding", submitted to Artificial Intelligence Journal (AIJ). September 2013. **Under review.**

(c) Peer-reviewed conference proceedings

[9] Zahy Bnaya, Rami Puzis, **Roni Stern**, Ariel Felner: "Bandit Algorithms for Social Network Queries", ASE/IEEE International Conference on Social Computing. September 2013.

[10] Zahy Bnaya, **Roni Stern**, Ariel Felner, Roie Zivan and Steven Okamoto: "Multi-Agent Path Finding for Self Interested Agents", accepted to the proceedings of the International Symposium on Combinatorial Search (SoCS) 2013.

[11] Matthew Hatem, **Roni Stern** and Wheeler Ruml: "Bounded Suboptimal Heuristic Search in Linear Space", accepted to the proceedings of the International Symposium on Combinatorial Search (SoCS) 2013.

[12] **Roni Stern**, Liron Samama, Rami Puzis, Tal Beja, Zahy Benaya: "Target Oriented Network Intelligence Collection for the Social Web", accepted to the proceedings of AAAI-2013.

[13] Richard Anthony Valenzano, Shahab Jabbari Arfaee, Jordan Thayer, **Roni Stern**, Nathan R. Sturtevant: "Using Alternative Suboptimality Bounds in Heuristic Search", accepted to the proceedings of the International Conference on Automated Planning and Scheduling (ICAPS-13).

[14] Ofra Amir, Barbara J. Grosz, Edith Law and **Roni Stern: "**Collaborative Health Care Plan Support ", accepted to the proceedings of the International Conference on Autonomous Agents and Multiagent Systems, (AAMAS). **Selected as the second prize winner of the Challenges and Vision track (second out of 24 peer reviewed paper).**

[15] Carlos Linares López, **Roni Stern**, Ariel Felner: "Target-Value Search Revisited", accepted to the proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 2013.

[16] **Roni Stern**, Ariel Felner and Robert Holte: "Search-aware Conditions for Probably Approximately Correct Heuristic Search", accepted to the proceedings of the International Symposium on Combinatorial Search (SoCS), 2012**.**

[17] Guni Sharon, **Roni Stern**, Ariel Felner and Nathan Sturtevant, Meta-agent Conflict-Based Search For Optimal Multi-Agent Path Finding accepted to the proceedings of the International Symposium on Combinatorial Search (SoCS), 2012. **Selected as the best paper (chosen out of 60 papers). Also appeared in AAAI 2012 in the best paper from sister conferences track.**

[18] Jordan Thayer, **Roni Stern** and Levi Lelis: "A Progress Bar for Search", accepted to the proceedings of the International Symposium on Combinatorial Search (SoCS), 2012.

[19] **Roni Stern**, Meir Kalech, Alexander Feldman and Gregory Provan: "Exploring the Duality in Conflict-Directed Model-Based Diagnosis", accepted to the proceedings of AAAI-2012.

[20] Amit Metodi, **Roni Stern**, Meir Kalech and Michael Codish: "Compiling Model-Based Diagnosis to Boolean Satisfaction", accepted to the proceedings of AAAI-2012.

[21] Guni Sharon, **Roni Stern** and Ariel Felner: "Conflict-based search for multi-agent path finding", accepted to the proceedings of AAAI-2012.

[22] Ariel Felner, Meir Goldenberg , **Roni Stern**, Guni Sharon, Nathan Sturtevant, Jonathan Schaeffer and Robert Holte: "Partial-expansion A* with Selective Node Generation", accepted to the proceedings of AAAI-2012.

[23] Asher Stern, **Roni Stern**, Ido Dagan and Ariel Felner: "Efficient Search for Transformation-based Inference". accepted to the proceedings of the 50th conference of the Association for Computational Linguistics (ACL 2012).

[24] Levi Lelis, **Roni Stern**, Sandra Ziles, Robert Holte and Ariel Felner, "Predicting Optimal Solution Cost with Bidirectional Stratified Sampling", accepted to the proceedings of the International Conference on Automated Planning and Scheduling (ICAPS-12),

[25] Jordan Thayer, **Roni Stern**, Ariel Felner and Wheeler Ruml: "Faster Bounded-Cost Search Using Inadmissible Estimates", accepted to the proceedings of the International Conference on Automated Planning and Scheduling (ICAPS-12).

[26] **Roni Stern**, Ariel Felner and Robert Holte: "Probably Approximately Correct Heuristic Search", in the proceeding of the International Symposium on Combinatorial Search (SoCS), pp: 158-163 ,July 2011.

[27] Levi Lelis, **Roni Stern** and Shahab Jabbari Arfaee: "Predicting Solution Cost with Conditional Probabilities", in the proceeding of the International Symposium on Combinatorial Search (SoCS), pp: 100-107 ,July 2011.

[28] Guni Sharon, **Roni Stern**, Meir Goldenberg and Ariel Felner: "Pruning Techniques for the Increasing Cost Tree Search for Optimal Multi-agent Pathfinding", in the proceeding of the International Symposium on Combinatorial Search (SoCS), pp:150-157, July 2011.

[29] Guni Sharon, **Roni Stern**, Meir Goldenberg and Ariel Felner: "The Increasing Cost Tree Search for Optimal Multi-agent Pathfinding" in the proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), pp:662-667, 2011.

[30] **Roni Stern**, Rami Puzis and Ariel Felner: "Potential search: a bounded-cost search algorithm" in the proceedings of the International Conference on Automated Planning and Scheduling (ICAPS), 2011

[31] **Roni Stern**, Meir Kalech and Ariel Felner: "Searching for a k-Clique in Unknown Graphs" in the proceedings of the International Symposium on Combinatorial Search (SoCS), July 2010.

[32] **Roni Stern**, Tamar Kulberis, Ariel Felner and Robert Holte: "Using Lookaheads with Optimal Best-First Search", in the proceedings of the Conference on Artificial Intelligence, (AAAI), pp:185-190, July 2010.

[33] Ariel Felner, **Roni Stern** and Sarit Kraus: "PHA*: Performing A* in Unknown Physical Environments." in the proceedings the International Conference on Autonomous Agents and Multiagent Systems, (AAMAS), pp:240-247. Bologna, Italy, July 2002.

(e) Refereed workshop papers and posters

[34] **Roni Stern**, Ofra Amir, Barbara Grosz, Shira Fischer and Lee Sanders: "Augie: the Dialogue Augmenting Agent", in the Human-Agent Interaction Design and Models (HAIDM) workshop, 2013.

[35] Ofra Amir, Barbara Grosz and **Roni Stern**: "Information Sharing for Care Coordination", in the Human-Agent Interaction Design and Models (HAIDM) workshop, 2013.

[36] **Roni Stern**, Meir Kalech, Niv Gafni, Yair Ofir, Eliav Ben-Zaken: "Using Model-Based Diagnosis to Improve Software Testing", in the International Workshop on the Principles of Diagnosis (DX), 2012.

[37] **Roni Stern**, Meir Kalech, Stas Osipov, Natan Semyonov: "MBD Techniques for Internet Delay Diagnosis with Dynamic Routing", in the International Workshop on the Principles of Diagnosis (DX), 2012.

[38] **Roni Stern**, Meir Kalech, Alexander Feldman, Gregory Provan: "Exploring the Duality in Conflict-Directed Model-Based Diagnosis", in the International Workshop on the Principles of Diagnosis (DX), 2012.

[39] Amit Metodi, **Roni Stern**, Meir Kalech, Michael Codish: "Compiling Model-Based Diagnosis to Boolean Satisfaction", in the International Workshop on the Principles of Diagnosis (DX), 2012.

[40] Meir Goldenberg, Ariel Felner, **Roni Stern** and Jonathan Schaeffer, "A* variants for multi-agent pathfinding", The first International Workshop on Multiagent Pathfinidng in AAAI 2012, July 2012.

[41] Guni Sharon, **Roni Stern**, Ariel Felner and Nathan Sturtevant: "Conflict-Based Search For Optimal Multi-Agent Path Finding"", The first International Workshop on Multiagent Pathfinidng in AAAI 2012, July 2012.

[42] Meir Goldenberg, Ariel Felner, **Roni Stern** and Jonathan Schaeffer: "A* variants for multi-agent pathfinding", accepted to the proceeding of the International Symposium on Combinatorial Search" (SoCS), July 2012.

[43] Richard Valenzano, Shahab Jabbari Arfaee, Jordan Thayer and **Roni Stern**: "Alternative Forms of Bounded Suboptimal Search", accepted to the proceeding of the International Symposium on Combinatorial Search" (SoCS), July 2012.

[44] **Roni Stern**, Rami Puzis and Ariel Felner: "Potential search: a greedy anytime heuristic search.", in the proceedings of the International Symposium on Combinatorial Search (SoCS), July 2010.

[45] **Roni Stern**, Meir Kalech and Ariel Felner: "Searching for a k-Clique in Unknown Graphs", in the proceedings of the International Conference on Autonomous Agents and Multiagent Systems, (AAMAS), 2010.

[46] **Roni Stern** and Meir Kalech: "MBD Techniques for Internet Delay Diagnosis", in the International Workshop on the Principles of Diagnosis (DX), 2010.

[47] Tamar Kulberis, **Roni Stern** and Ariel Felner**:** "Best-first Search with Lookaheads."
In the International Symposium on Combinatorial Search. (SOCS), July 2009.

Professional Activities

1. Reviewer for the Journal of Artificial Intelligence Research (JAIR).
2. Co-organizer of the first International Workshop on Multiagent Pathfinidng in AAAI 2012 (with Prof. Nathan Sturtevant, Dr. Ariel Felner and Prof. Kostas Bekris)
3. Program Committee Member: IJCAI 2013, 2011
4. Program Committee Member: AAAI 2013,2012
5. Program Committee Member: ICAPS 2013,2012
6. Program Committee Member: SoCS 2013,2012
7. Program Committee Member: AAMAS 2012
8. Program Committee Member: DX 2013, 2012