

CURRICULUM VITAE

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EDUCATION

Ph.D.	Cornell University	2008	Computer Science Advisor: Dexter Kozen Thesis: <i>Incremental Optimization</i>
M.S.	Cornell University	2005	Computer Science
B.S.	Harvey Mudd College	2001	Math and Computer Science
	York High School	1997	Valedictorian

ACADEMIC FOCI

Discrete Math, Algorithms, Cognitive Studies, Physics.

RESEARCH INTERESTS

Endogenous equilibrium selection in repeated games.
Folk Theorem, equilibrium-stabilizing mechanisms, efficiency and fairness tradeoffs.
Games & social networks: trust, reputation, cooperation, exploitation, altruism, irrationality.
Incentive systems and short vs long-term optimality.

EMPLOYMENT & SELECTED RESEARCH PROJECTS

2002-07	Research Assistant for Dexter Kozen at Cornell University. Topic: Incremental Optimization.
2001-05	Teaching Assistant for various professors at Cornell University. Courses: Graduate Algorithms, Theory of Computing, Object-Oriented Programming & Data Structures, Intro to Computing.
2003	Researcher for Tapas Kanungo at IBM Almaden. Topic: Coding Theory.
2001	Researcher for Ran Libeskind-Hadas at Harvey Mudd College. Topic: Optical Routing.
2000-01	Thesis Project under Ran-Libeskind-Hadas at Harvey Mudd College. Project: The Computational Complexity of Motion Planning.
2000	Summer Intern for Philip Sterne at Lawrence Livermore Nat'l Laboratory. Topic: Positron Spectroscopy.
1999-00	Thesis Project under Andrew Bernoff at Harvey Mudd College. Project: Mathematical Modeling for Fair Isaac, Inc.
1999	Researcher for Ran Libeskind-Hadas at Harvey Mudd College. Topic: Multicast Routing.
1998	Researcher for Margaret Fleck at Harvey Mudd College. Topic: Computer Vision.
1997	Software Developer at Unified Research Laboratories.
1996	Software Developer at Christopher Newport University.

PUBLICATIONS

Graduate Dissertation

1. J. R. Hartline. *Incremental Optimization*, Cornell University, January 2008.

Journal Papers

2. J. R. Hartline and A. Sharp. “Incremental Flow,” *Networks*.
3. E. Miller, R. Libeskind-Hadas, D. Barnard, W. Chang, K. Dresner, W. Turner, and J. R. Hartline, “On the Complexity of Multicasting in WDM Networks with Multicast-Capable Switches,” *IEEE Journal on Selected Areas in Communications*, Vol. 22, No. 9, November 2004, pp. 1601-1612.
4. J. R. Hartline, R. Libeskind-Hadas, K. Dresner, E. Drucker, K. Ray, “Optimal Virtual Topologies for One-To-Many Communication in WDM Paths and Rings,” *IEEE/ACM Transactions on Networking*, Vol. 12, No. 2, April 2004, pp. 375-383.
5. J. R. Hartline and R. Libeskind-Hadas, “The Computational Complexity of Motion Planning,” *SIAM Review*, Vol. 45, No. 3, 2003, pp. 543-557.
6. R. Libeskind-Hadas, J. R. Hartline, P. Boothe, G. Rae, and J. Swisher, “On Multicast Algorithms for Heterogeneous Networks of Workstations,” *Journal of Parallel and Distributed Computing*, (special issue on cluster and network-based computing), Vol. 61, No. 11, November 2001, pp. 1665-1679.

Refereed Conference Papers

7. J. R. Hartline and A. Sharp, “An Incremental Model for Combinatorial Maximization Problems,” *Workshop on Experimental Algorithms*, May 2006, Menorca, Spain.
8. J. R. Hartline and A. Sharp, “Incremental Flow,” *Proceedings of the International Network Optimization Conference*, March 2005, Lisbon, Portugal, pp. 681-687.
9. R. Libeskind-Hadas, J. R. Hartline, K. Dresner, E. Drucker, and K. Ray, “Multicast Virtual Topologies in WDM Paths and Rings with Splitting Loss,” *Proceedings of the Eleventh IEEE International Conference on Computer Communications and Networks*, October 2002, Miami, Florida, pp. 318-321.
10. R. Libeskind-Hadas and J. R. Hartline, “Efficient Multicast in Heterogenous Networks of Workstations,” *Proceedings of the International Conference on Parallel Processing Workshop on Network-Based Computing*, August 2000, Toronto, Canada, pp. 403-410.

Technical Reports

11. J. Hafner, J. R. Hartline, and T. Kanungo, "R5X0: An Efficient High Distance Parity-Based Code with Optimal Update Complexity," *IBM Technical Report* RJ 10322 (A0408-005), August 9, 2004.
12. J. R. Hartline, "Optimal Shortcuts for Balanced Search Trees," *Cornell University Technical Report*, February, 2004.

In Progress

13. J. R. Hartline and A. Sharp, "An Incremental Model for Combinatorial Minimization," to be submitted.

Patents Pending

14. J. Hafner, J. R. Hartline, and T. Kanungo. "RAID 5X0: a high distance RAID scheme with minimal update cost," IBM patent disclosure, 2003.
15. J. Hafner, J. R. Hartline, and T. Kanungo. "RAID 5-Interleave: a high distance RAID scheme with bounded parity in-degree," IBM patent disclosure, 2003.
16. J. Hafner, J. R. Hartline, and T. Kanungo. "IO Saver: a technique to amortize update costs in RAID systems," IBM patent disclosure, 2003.

Non-CS Publications

17. J. R. Hartline, "Why Students Stay Up Too Late: Sleep/Non-Sleep Habits of Harvey Mudd Undergraduates," 27th Western Psychology Conference for Undergraduate Research, July 1998, Santa Clara, CA.

PROGRAMMING EXPERIENCE

UNIX/Linux, Java, C/C++, FORTRAN 90, PERL, Matlab, Scheme, SML.

OTHER INTERESTS

Ultimate Frisbee, Ice Hockey, Volleyball, Skiing.