

Noah D. Stein

Curriculum Vitae

Massachusetts Institute of Technology
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Personal

Born: June 29, 1983.

Citizenship: United States of America.

Education

Ph.D., Electrical Engineering & Computer Science. MIT, June 2011.

S.M., Electrical Engineering & Computer Science. MIT, June 2007.

B.S., Electrical and Computer Engineering. Cornell University, May 2005.

Research Interests

Game theory: geometry of equilibria; algorithms; continuous games.

Optimization: linear, semidefinite, and convex programming; algebraic methods.

Awards

Ernst A. Guillemin Thesis Award (1st place) for best electrical engineering S.M. thesis. MIT, May 2007.

Baccalaureate Service Award for “intellectual integrity, commitment to a pluralistic community, excellence in scholarship, and active citizenship.” Cornell University, May 2005.

Pertsch Prize for the highest cumulative GPA upon the completion of junior-level electrical and computer engineering coursework. Cornell University, May 2003 (sophomore year).

Professional Experience

Lyric Semiconductor: intern, June 2007 - September 2007; consultant, October 2007 – February 2008. Analyzed theoretical performance and limits of a variety of error correction schemes for computation with analog circuits as part of the theory group on a DARPA-funded project. Used graph-theoretic methods to optimally solve layout problems faced by the circuits group.

Professional Service

Grader for EE&CS Technical Qualifying Exam on probability. MIT, May 2010.

Game theory invited session organizer. International Symposium on Mathematical Programming, 2009.

EE&CS representative to the Graduate Student Council. MIT, 2006 - 2007.

EE&CS Graduate Student Association Executive Committee member. MIT 2006 - 2007.

Dean's Advisory Committee for the College of Engineering. Cornell University, 2004 - 2005.

Reviewer for International Journal of Game Theory; Mathematical Social Sciences; Mathematical Programming; Automatica; European Control Conference; IEEE Conference on Decision and Control; Systems, Man, and Cybernetics – Part B; and the Bulletin of the Section of Logic; ongoing.

Publications

Theses

Exchangeable Equilibria. Doctoral thesis advised by Asuman Ozdaglar and Pablo A. Parrilo, MIT, May 2011 (projected).

Characterization and Computation of Equilibria in Infinite Games. Master's thesis advised by Asuman Ozdaglar and Pablo A. Parrilo, MIT, May 2007. Ernst A. Guillemin Thesis Award, 1st place.

Journal Articles

N. D. Stein, A. Ozdaglar, and P. A. Parrilo. Structure of Extreme Correlated Equilibria: a Zero-Sum Example and its Implications. *International Journal of Game Theory*, to appear.

N. D. Stein, P. A. Parrilo, and A. Ozdaglar. Correlated Equilibria in Continuous Games: Characterization and Computation. *Games and Economic Behavior*, 71(2):436 - 455, March 2011.

C. Dodd, P. Jeasakul, A. Jirapattanakul, D. M. Kane, B. Robinson, N. D. Stein, and C. E. Silva. Ergodic Properties of a Class of Discrete Abelian Group Extensions of Rank-One Transformations. *Colloquium Mathematicum*, 119: 1 - 22, 2010.

N. D. Stein, A. Ozdaglar, and P. A. Parrilo. Separable and Low-Rank Continuous Games. *International Journal of Game Theory*, 37(4):475 - 504, December 2008.

Working Papers

N. D. Stein, A. Ozdaglar, and P. A. Parrilo. Exchangeable Equilibria Part I: Symmetric Bimatrix Games.

N. D. Stein, P. A. Parrilo, and A. Ozdaglar. A Partial Proof of Nash's Theorem via Exchangeable Equilibria.

N. D. Stein, P. A. Parrilo, and A. Ozdaglar. Games on Manifolds.

Conference Proceedings

N. D. Stein, A. Ozdaglar, and P. A. Parrilo. Computing Correlated Equilibria of Polynomial Games via Adaptive Discretization. *Proceedings of the IEEE Conference on Decision and Control*, 2008.

N. D. Stein, P. A. Parrilo, and A. Ozdaglar. Characterization and Computation of Correlated Equilibria in Infinite Games. *Proceedings of the IEEE Conference on Decision and Control*, 2007.

N. D. Stein, A. Ozdaglar, and P. A. Parrilo. Separable and Low-Rank Continuous Games. *Proceedings of the IEEE Conference on Decision and Control*, 2006

Talks

Exchangeable Equilibria in Symmetric Bimatrix Games. *Brazilian Workshop on Game Theory*, July 2010.

A Fixed Point Free Proof of Nash's Theorem via Exchangeable Equilibria. *Stony Brook Conference on Game Theory*, July 2010.

Exchangeable Equilibria. *Laboratory for Information and Decision Systems Student Conference*, MIT, January 2010.

Polynomial Games: Computation of Nash and Correlated Equilibria. *International Symposium on Mathematical Programming*, August 2009.

Games on Manifolds. *Stony Brook Conference on Game Theory*, July 2009.

Adaptive Discretization Methods for Computing Correlated Equilibria of Polynomial Games. *IEEE Conference on Decision and Control*, December 2008.

Adaptive Discretization Methods for Computing Correlated Equilibria of Polynomial Games. *Games 2008*, July 2008.

Adaptive Discretization Methods for Computing Correlated Equilibria of Polynomial Games. *Laboratory for Information and Decision Systems Student Conference*, MIT, February 2008.

Computation and Characterization of Equilibria in Polynomial Games. *Stony Brook Conference on Game Theory*, July 2007.

Computation of ϵ -Equilibria in Separable Games. *IEEE Conference on Decision and Control*, December 2006.

Computation of ϵ -Equilibria in Separable Games. *Laboratory for Information and Decision Systems Student Conference*, MIT, January 2006.

Teaching

Teaching assistant for “Algebraic Techniques and Semidefinite Optimization,” taught by Pablo A. Parrilo, Spring 2008 at MIT. Held office hours and graded student assignments.

Recitation facilitator for “Electromagnetic Fields and Waves,” taught by Donald T. Farley, Fall 2003 and 2004 at Cornell University. Worked examples at the blackboard and guided students as they solved practice problems in groups.

Private tutor for courses ranging from middle and high school math and chemistry, to undergraduate calculus, computer programming, signal processing, and electromagnetism, to graduate level linear programming; 1996 - present.

References

Asuman Ozdaglar	MIT, Associate Professor	asuman@mit.edu
Pablo A. Parrilo	MIT, Professor	parrilo@mit.edu
Benjamin Vigoda	Lyric Semiconductor, CEO	vigoda@lyricsemi.com
Bernhard von Stengel	London School of Economics, Professor	stengel@nash.lse.ac.uk

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