Dr. Selin Damla Ahipaşaoğlu

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London, EC2Y 8AG
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EDUCATION

Ph.D., Operations Research
Cornell University, Ithaca, NY, August 2009
Concentration: Mathematical Programming (Prof. Michael J. Todd)
Minor: Computer Science (Prof. Charles van Loan)
Minor: Applied Mathematics (Prof. Adrian Lewis)

M.S., Operations Research
Cornell University, Ithaca, NY, August 2007

M.S., Industrial Engineering
Bilkent University, Ankara, Turkey, June 2004
Advisor: Prof. Barbaros Tansel

B.S., Industrial Engineering
Bilkent University, Ankara, Turkey, June 2002

RESEARCH INTERESTS

Combinatorial auctions, game theory, combinatorial optimization

Convex optimization, especially first-order methods for large scale problems

Semidefinite programming

Compressed sensing, covariance selection, sparse PCA

EXPERIENCE

Research Officer   Sep 20010-Present
Management Science Group, London School of Economics

Guest Instructor: Nonlinear Opt. (PhD) and Optimization (UG)   Spring 2010
Operations Research and Financial Engineering, Princeton University

Research Associate   Sep 2009-Aug 2010
Operations Research and Financial Engineering, Princeton University

Instructor: Engineering Applications of Operations Research (UG)   Fall 2008
Operations Research and Information Engineering, Cornell University

Research Assistant/Teaching Assistant   Summer 2005-Spring 2009
Operations Research and Information Engineering, Cornell University

Research Assistant/Teaching Assistant   Fall 2002-Spring 2004
Department of Industrial Engineering, Bilkent University

PUBLICATIONS   **Refereed Journal Publications**

Ahipaşaoğlu, S. D. and Todd, M. J. A Modified Frank-Wolfe Algorithm for Computing Minimum-Area Enclosing Ellipsoidal Cylinders: Theory and Algorithms. *under revision for Special Issue of Computational Geometry: Theory and Applications on "Geometric Aspects of Optimization".*

Ahipaşaoğlu, S. D. and Yıldırım, E. A. Identification and Elimination of Interior Points for the Minimum Enclosing Ball Problem. *SIAM Journal on Optimization,* (19)1392-1396, 2008.

Ahipaşaoğlu, S. D., Sun P., and Todd M. J. Linear Convergence of a Modified Frank-Wolfe Algorithm for Computing Minimum-Volume Enclosing Ellipsoids. *Optimization Methods and Software,* (23)5-19, 2008.

Book Chapters

Krishnamurthy, V., Ahipaşaoğlu, S. D., and d'Aspremont, A. A Pathwise Algorithm for Covariance Selection. In Sra, S., Nowozin, S., Wright, S. J., *Optimization for Machine Learning,* MIT Press, Cambridge, MA, USA, 2011.

Refereed Conference Proceedings

Ahipaşaoğlu, S. D. and Todd, M. J. The Minimum-Area Enclosing Ellipsoidal Cylinder Problem. Proceedings of the Fall Workshop on Computational Geometry, IBM T.J. Watson Research Center, November, 2007.

WORK in PROGRESS

Ahipaşaoğlu, S. D. and Steinberg, R.J. Analytical Results on A Decentralized Auction.

Ahipaşaoğlu, S. D. and Steinberg, R.J. A Combinatorial Auction Revisited: Refinement and Extension of the PAUSE Auction Procedure.

Bach, F., Ahipaşaoğlu, S. D., and d'Aspremont, A. Convex Relaxations for Subset Selection. arxiv.org/abs/1006.3601v1, 2010.

Ahipaşaoğlu, S. D., The Minimum Volume Ellipsoid Estimator Problem: Exact and Inexact Methods.

THESES and TECHNICAL REPORTS

Ahipaşaoğlu, S.D., Solving Ellipsoidal Inclusion and Optimal Experimental Design Problems: Theory and Algorithms. Cornell University, Ithaca, NY, August 2009.

Ahipaşaoğlu, S.D., A Survey on Network Location Problems. Bilkent University, Ankara, Turkey, August 2004.

Ahipaşaoğlu, S.D., Erdogan, G. and Tansel, B. Location-routing problems: a review and assessment of research directions, Working Paper lEOR 2003-07, Bilkent University, Ankara, Turkey, July 2003.

TALKS Analytical Results on the PAUSE Auction Procedure.
1. Southampton Management School, Southampton, UK, Aug 2011.
2. International Conference in Game Theory, Stony Brook, NY, July 2011.
3. Department of Management, London School of Economics and Political Science, London, March 2011.
4. Mathematical Institute, University of Oxford, Oxford, March 2011.
5. Seminar on Discrete Mathematics and Game Theory, London School of Economics and Political Science, London, March 2011.
6. Management Science and Operations, London Business School, April 2011.

7. Convex Relaxations for Subset Selection. Foundations of Computational Mathematics Conference, Budapest, Hungary, July 2011.

Approximating Sets with Simple Bodies: Theory, Algorithms, and Geometry.
8. Department of Management, London School of Economics and Political Science, London, January 2010.
9. MGH Radiation Oncology Physics Seminar, Harvard University, Boston, November 2008.

10. A Pathwise Algorithm for Covariance Selection. OPT 2009: 2nd NIPS Workshop on Optimization for Machine Learning, Whistler, Canada, December, 2009.

11. The Minimum Volume Ellipsoid Estimator Problem: A Discussion. INFORMS Annual Meeting, San Diego, October 2009.

A Modified Frank-Wolfe Algorithm for Computing Minimum-Area Enclosing Ellipsoidal Cylinders: Theory and Algorithms.
12. The 20th International Symposium of Mathematical Programming, Chicago, August 2009.
13. DIMACS Workshop on Algorithmic Challenges in Optimization, Game Theory and Computer Science: in Memory of Leo Khachiyan, Rutgers University, New Brunswick, March 2009.
14. INFORMS Student Chapter Club Distinguished Lecture Series, Lehigh University, Bethlehem, February 2009.
15. ORIE Colloquium, Cornell University, Ithaca, March 2009.
16. SIAM Conference on Optimization, Boston, May 2008.
17. Continuous Optimization Seminar, Cornell University, Ithaca, April 2008.
18. Fall Workshop on Computational Geometry, IBM T.J.Watson Research Center, November, 2007.

Identification and Elimination of Interior Points for the Minimum Enclosing Ball Problem.
19. MOPTA, Bethlehem, August 2009.
20. Continuous Optimization Seminar, Cornell University, Ithaca, April 2009.

21. How to Solve Optimal Experimental Design Problems? INFORMS Annual Meeting, Washington D.C., October 2008.

22. What is Operations Research? CURIE Academy, Cornell University, Ithaca, July 2008.

23. Linear Convergence of a Modified Frank-Wolfe Algorithm for Computing Minimum-Volume Enclosing Ellipsoids. Second Mathematical Programming Society International Conference on Continuous Optimization (ICCOPT-MOPTA), McMaster University, Hamilton, Canada, August 2007.

24. A Survey on Vehicle Routing Problems, EURO-INFORMS, Istanbul, Turkey, June 2003.

AWARDS Travel Grant for FoCM in Budapest, July 2011.

Core Invitation for *Modern Trends in Optimization and Its Application, OP2010* as junior researcher. (rejected due to prior commitment.)

SIAM Student Travel Award for SIOPT in Boston, May 2008

IBM Travel Grant for Fall Workshop on Computational Geometry in IBM T.J.Watson Research Center, November 2007

NSF Travel Grant for ICCOPT-MOPTA in Hamilton, Canada, August 2007

McMullen Fellowship, Cornell University, August 2004 - May 2005

Dean's High Honor List, Bilkent University, 1998-2002 (graduated in $2^{n}d$ place (out of 89) in class of 2002.)

Full tuition waiver and stipend awarded by Bilkent University, 1998-2004

Isbankasi Altin Genc Odulu (11th place), given to the first 60 students over 1.5 million entrants in the Turkish Nationwide University Admissions Exam, June 1998

REVIEWER Mathematical Programming
SIAM Journal on Optimization
Discrete Applied Mathematics
Optimization Methods and Software
Journal of Global Optimization
International Journal of Geographical Information Science

SOCIETY Mathematical Programming Society
Game Theory Society
SIAM
INFORMS

SKILLS Turkish (Native Speaker)
Modern Greek (Intermediate)

MATLAB, Python, C/C++, HTML (Advanced)
CVX, AMPL, SEDUMI (Advanced)
Microsoft Office, LATEX (Advanced)

REFERENCES Richard J. Steinberg, London School of Economics
Michael J. Todd, Cornell University
Alexandre d'Aspremont, Princeton University
David B. Shmoys, Cornell University
Adrian S. Lewis, Cornell University
Barbaros Tansel, Bilkent University