Ozan Candogan

Contact Information

Laboratory for Information and Decision Systems
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Education

Massachusetts Institute of Technology, Cambridge, MA — 2009 - present
Ph.D. Candidate in Electrical Engineering and Computer Science — GPA: 5.00/5.00
(Minor in Economics)
Thesis: "Strategic Interactions and Mechanism Design: A Dynamic Viewpoint"
Committee: Prof. Daron Acemoglu, Prof. Asuman Ozdaglar (advisor),
Prof. Pablo Parrilo (advisor), Prof. Georgia Perakis.

Massachusetts Institute of Technology, Cambridge, MA — 2007 - 2009
M.S. in Electrical Engineering and Computer Science — GPA: 5.00/5.00
Thesis: Potential Games and Competitive Scheduling in Wireless Networks

Bilkent University, Ankara, Turkey — 2003 - 2007
B.S. in Electrical and Electronics Engineering — GPA: 4.00/4.00

Research Interests

Mechanism Design: Theory and applications of auctions, design of combinatorial auctions and iterative auctions, repeated strategic interactions and incentive design.
Social and Economic Networks: Pricing and resource management in networked systems, network economics, learning in networks, network optimization and control.
Game Theory and its Applications: Learning in games, games on networks, approximations in games and dynamics of strategic interactions.

Awards & Honors

- Microsoft Research Ph.D. Fellow. — 2012
- Siebel Scholarship (MIT), for academic achievement and excellence. — 2009
- Bilkent University High Honor student with Full Scholarship. — 2003 - 2007
- Listed as one of the "Top 100 Students in the National University Entrance Exam" (in Turkey, among 1.5 million candidates) — 2003
- Ankara Science High School, Class of 2003, Ranked 1^{st} in class. — 2003
- The Scientific and Technological Research Council of Turkey Project Contest among High School Students, Physics, 2nd place. — 2003
- Antalya Mathematical Olympiads, 4th place. — 2001 & 2002

Professional Experience

Massachusetts Institute of Technology, Cambridge, MA — 2007 - present
Research/Teaching Assistant.

I conducted research on topics related to game theory, operations research, and networks. Additionally, I served as a teaching assistant for classes on the same set of topics.

Microsoft Research New England, — Cambridge, MA
Research Intern. Mentors: Jennifer Chayes, Christian Borgs. — Summer 2010, 2011

I developed multi-period pricing schemes that can be used by service firms providing guaranteed service (2010). Additionally, I studied auction-based mechanisms for selling service (2011).

Aselsan Inc., — Ankara, Turkey
Summer Intern. — Summer 2005, 2006

I produced a software for positioning on 3D maps, using genetic algorithms (2005). Additionally, I designed a VHDL-based converter between RS-232 and ARINC protocols (2006).

Skills

Matlab, Yalmip, CPLEX, Java, Excel.

Patents

C. Borgs, O. Candogan, J. Chayes, I. Lobel, H. Nazerzadeh, "Pricing Mechanisms for Perishable Time-Varying Resources", Microsoft Research, submitted, 2010.

Related Coursework

Operations Research & Management: Introduction to Mathematical Programming, Nonlinear Programming, Algebraic Techniques and Semidefinite Optimization, Dynamic Programming and Stochastic Control (listener), Theory of Operations Management (listener), System Optimization and Analysis (Teaching Assistant).
Economics: Microeconomic Theory 1 & 2, Industrial Organization, Advanced Topics in Game Theory (Listener).
Networks: Network Algorithms, Fundamentals of Network Science and Engineering, Networks (Teaching Assistant).
Stochastic Processes: Fundamentals of Probability, Advanced Stochastic Processes, Real and Functional Analysis (Listener), Statistical Inference in High-Dimensional Settings (Listener).

Journal Publications

J1: O. Candogan, I. Menache, A. Ozdaglar, P. A. Parrilo, "Flow Representations of Games: Harmonic and Potential Games", published in Mathematics of Operations Research, 2011.

J2: O. Candogan, K. Bimpikis, A. Ozdaglar, "Optimal Pricing in Networks with Externalities", to appear in Operations Research, 2012.

J3: O. Candogan, A. Ozdaglar, P. A. Parrilo, "Near-Potential Games: Geometry and Dynamics", to appear in Transactions on Economics and Computation, 2012.

J4: C. Borgs, O. Candogan, J. Chayes, I. Lobel, H. Nazerzadeh, "Optimal Multi-Period Pricing with Service Guarantees", submitted to Management Science (second round of reviews), 2011.

J5: O. Candogan, A. Ozdaglar, P. A. Parrilo, "Dynamics in Near-Potential Games", submitted to Games and Economic Behavior (third round of reviews), 2011.

J6: O. Candogan, D. Acemoglu, A. Ozdaglar, P. A. Parrilo "Iterative Auction Design for Tree Valuations", in preparation, 2012.

J7: O. Candogan, D. Acemoglu, A. Ozdaglar, P. A. Parrilo "Graphical Valuations and Efficient Iterative Auctions", in preparation, 2012.

Conference Proceedings and Other Publications

C1: O. Candogan, K. Bimpikis, A. Ozdaglar, "Optimal Pricing in Social Networks ", ACM SIGecom Exchanges, Vol. 10, No. 3, December 2011.

C2: C. Borgs, O. Candogan, J. Chayes, I. Lobel, H. Nazerzadeh, "Optimal Multi-Period Pricing with Service Guarantees", Workshop on Internet & Network Economics (WINE) 2011.

C3: O. Candogan, A. Ozdaglar, P. A. Parrilo, "Learning in Near-Potential Games", IEEE Conference on Decision and Control (CDC), 2011.

C4: O. Candogan, K. Bimpikis, A. Ozdaglar, "Optimal Pricing in the Presence of Local Network Effects", Workshop on Internet & Network Economics (WINE), 2010.

C5: O. Candogan, I. Menache, A. Ozdaglar, P. A. Parrilo, "Dynamics in Near-Potential Games", Allerton Conference, 2010.

C6: O. Candogan, A. Ozdaglar, P. A. Parrilo, "A Projection Framework for Near-Potential Games", IEEE Conference on Decision and Control (CDC), 2010.

C7: O. Candogan, I. Menache, A. Ozdaglar, P. A. Parrilo, "Near-Optimal Power Control in Wireless Networks: A Potential Game Approach", INFOCOM, 2010.

C8: O. Candogan, I. Menache, A. Ozdaglar, P. A. Parrilo, "Competitive Scheduling in Wireless Collision Channels with Correlated Channel State", International Conference on Game Theory for Networks, 2009.

C9: O. Candogan, H. Ozbay, H. M. Ozaktas, "Controller Implementation for a Class of Spatially-Varying Distributed Parameter Systems", IFAC World Congress, 2008.

References

Available upon request.

Citizenship Turkish Language English and Turkish Date of Birth 02/20/1987