
Asst. Prof. of Operations and Management Science
Stephen M. Ross School of Business
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(Since September 2004)
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RESEARCH INTERESTS:

- Logistic networks and supply chains: design, algorithms, procurement mechanisms, and optimization.
- Game theory: Product positioning and market entry.
- Social networks, their formation, and their impact on organizational innovation.

EDUCATION:

- August 1999 – May 2004: Ph.D. in Algorithms, Combinatorics and Optimization, Tepper School of Business (formerly GSIA), Carnegie Mellon University.
- July 1994 – May 1999: M.S. in Mathematics and Computer Applications, Indian Institute of Technology, Delhi.

AWARDS & HONORS:

- NSF Award DMI-0620153 for \$159,114, Simplified Bidding and Solution Structures for Combinatorial Procurement Auctions, co-PI, with PI Amy Cohn and co-PI Damian Beil, September 2006 – August 2009.
- Gerald. L. Thomson Doctoral Dissertation Award in Management Science, Tepper School of Business, CMU, 2004.
- Best Student Teacher Award by the Department of Economics at the Tepper School of Business, CMU, for the class *Quantitative Economic Analysis* taught in Spring 2004.
- Carnegie Bosch Institute Ph.D. Fellowship, 2002-2003.
- William Larimer Mellon Fellowship, Tepper School of Business, 1999-2002.

TEACHING:

(Instructor evaluations for each section in parentheses.)

- OMS 502, *Business Statistics*, M.B.A. core, Fall A 2007, 3 sections (4.72, 4.74, 4.79).
- OMS 301, *Business Statistics and Management Science*, B.B.A. core, Fall 2006 (co-ordinator; 4.96, 4.98, 4.95), Winter 2006 (5.00, 5.00), Winter 2005 (3.91, 4.60).
- OMS 320, *Logistics and Supply Chain Management*, B.B.A. elective, new course, Fall 2006 (4.96).
- OMS 885, *Research Topics in OMS: Logistics Networks: Theory and Applications*, Ph.D.elective, new course, Winter A 2006 (5.00).
- BA 553, *MAP*, M.B.A. core, Winter B 2005.

SERVICE AND OTHER PROFESSIONAL ACTIVITIES:

- Ad-hoc reviewer for ACM-SIAM Symposium on Discrete Algorithms (2003, 2004, 2005), ACM Symposium on Electronic Commerce (2004, 2005), ACM Symposium on Theory of Computing (2004), Algorithmica (2006), Discrete Applied Mathematics (2004, 2005, 2007), European Symposium on Algorithms (2004, 2007), IEEE Symposium on Foundations of Computer Science (2000, 2003, 2004), Information Processing Letters (2004), Journal of Algorithms (2004, 2005), Journal of the ACM (2005), Mathematics of Operations Research (2004, 2005, 2006), Networks (2004), Operations Research (2004, 2006, 2007).
- NSF Panelist, 2007.
- Co-advisor for student teams for the Tauber Institute of Global Operations, May–August 2007, 2006, 2005.
- OMS departmental web-page designer and administrator, 2005 – present.
- INFORMS member, 2003 – present.
- CSCMP member, 2005 – present.

JOURNAL PUBLICATIONS:

1. On the approximability of some network design problems, with J. Chuzhoy, A. Gupta and J. Naor. Forthcoming in *ACM Transactions on Algorithms*, accepted May 2007.
2. Approximating k -cuts using network strength as a Lagrangean relaxation, with R. Ravi. *European Journal of Operational Research*, 186:77–90, 2008.
3. LP rounding approximation algorithms for stochastic network design, with A. Gupta and R. Ravi. *Mathematics of Operations Research*, 32(2):345–364, 2007.
4. Min-max payoffs in a two-player location game, with S. Chawla, U. Rajan and R. Ravi. *Operations Research Letters*, 34(5):499–507, 2006.
5. Hedging uncertainty: Approximation algorithms for stochastic optimization problems, with R. Ravi. *Mathematical Programming A*, 108(1):97–114, 2006.
6. Approximation algorithms for problems combining facility location and network design, with R. Ravi, *Operations Research*, 54(1):73–81, 2006.
7. Min-max tree covers of graphs, with G. Even, N. Garg, J. Könemann and R. Ravi, *Operations Research Letters* 32(4):309–315, 2004.
8. Approximating the degree-bounded minimum-diameter spanning tree problem, with J. Könemann and A. Levin, *Algorithmica*, 41(2):117–129, 2004.
9. Non-clairvoyant scheduling for minimizing mean slowdown, with N. Bansal, K. Dhamdhere and J. Könemann, *Algorithmica*, 40(4):305–318, 2004.
10. An approximation algorithm for the edge-dilation k -center problem, with J. Könemann, Y. Li and O. Parekh, *Operations Research Letters* 32(5):491–495, 2004.
11. Improved approximations for tour and tree covers, with J. Könemann, G. Konjevod and O. Parekh, *Algorithmica* 38(3):441–449, 2004.

JOURNAL SUBMISSIONS & MANUSCRIPTS

1. Integrated optimization of procurement, processing and trade of commodities, with R. Anupindi and S. Devalkar. Under review at *Management Science*, submitted August 2007.

2. Sampling and cost-sharing: Approximation algorithms for stochastic optimization problems, with A. Gupta, M. Pál and R. Ravi. Under review at *Journal of the ACM*, submitted January 2007.
3. Approximation algorithms for multicommodity and quality-based facility location, with R. Ravi. Working paper, 2007.
4. Simplified bidding and solution methodology for truckload procurement and other VCG combinatorial auctions, with D. Beil and A. Cohn. Working paper, 2007.

PRESENTATIONS:

1. First mover (dis)advantage in duopolistic location/pricing games, INFORMS Annual meeting, Seattle, 2007.
2. Integrated optimization of the procurement, processing and trade of commodities, School of Business Administration, University of Miami, 2007.
3. Is there really a first-mover advantage when entering a new market?, Hosmer luncheon, Ross School of Business, University of Michigan, 2005.
4. Stochastic network design, INFORMS Annual meeting, Denver, 2004.
5. Stochastic network design, 10th International conference on stochastic optimization, Tucson, 2004.
6. Boosted sampling: Approximation algorithms for stochastic optimization, Ross School of Business, University of Michigan, 2004.
7. Boosted sampling: Approximation algorithms for stochastic optimization, Stern School of Business, New York University, 2004.
8. Boosted sampling: Approximation algorithms for stochastic optimization, Kenan-Flagler Business School, University of North Carolina, 2004.
9. Boosted sampling: Approximation algorithms for stochastic optimization, Graduate School of Business, University of Chicago, 2004.
10. Approximation algorithms for stochastic network optimization, INFORMS Annual meeting, Atlanta, 2003.
11. Min-max payoffs of a location game, Workshop on Algorithmic Game Theory and the Internet, Dagstuhl, Germany, 2003.

12. Approximating the multiple source-sink network design problem, Singapore/Pittsburgh Logistics and Operations Workshop, Carnegie Bosch Institute, Pittsburgh, 2002.
 13. Integrated logistics: Approximation algorithms combining facility location and network design, Max Planck Institut für Informatik, Saarbrücken, Germany, 2002.
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STUDENTS SUPERVISED:

1. Sripad Devalkar (2005–present), co-chair of doctoral committee, with R. Anupindi.
2. Richard Chen (2006–present), member of doctoral committee.
3. Sarah Root (2006–2007), member of doctoral committee.
4. Kurt deMaagd (2005–2006), member of doctoral committee.
5. Santosh Kantharaj (2006–2007), Undergraduate Research Opportunity Program.
6. Yong-Ming Jeffrey Woo (2005–2006), Undergraduate Research Opportunity Program.
7. Loren Steinke (Fall 2007), Undergraduate Independent Study.