

Itai Gurvich

Curriculum Vita

Contact information:

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Education

- 2004-2008 **Graduate School of Business, Columbia University, New York**
PhD in Decisions, Risk and Operations
Dissertation: Staffing and Control of Many-Server Service Systems
Principal Adviser: Ward Whitt
Co-Advisers: Mor Armony, Costis Maglaras and Assaf Zeevi
- 2002-2004 **Technion—Israel Institute of Technology, Haifa, Israel**
M.Sc. in Operations Research (*summa cum laude*)
Dissertation: Design and Control of the M/M/N Queue with Multi-Type Customers
and Many Servers. Adviser: Avishai Mandelbaum.
- 1998-2002 **Technion—Israel Institute of Technology, Haifa, Israel**
B.Sc in Industrial Engineering (*summa cum laude*)

Professional Experience

- 2009- Assistant Professor, Kellogg School of Management, Northwestern University.
- 2008-2009 Donald P. Jacobs Scholar in Managerial Economics and Decision Sciences, Kellogg
School of Management, Northwestern University.
- 2005-2006 Teaching Assistant, Graduate School of Business, Columbia University
- 2001-2004 Teaching Assistant, Technion—Israel Institute of Technology

Research Interests

Application areas:

- Service Operations
- Call Centers

Methodological areas:

- Queueing Theory
- Applied Probability

Publications

1. I. Gurvich, M. Armony, and A. Mandelbaum (2008). Service level differentiation in call centers with fully flexible servers. *Management Science*, 54(2), 279–294.
2. I. Gurvich, M. Armony, and C. Maglaras (2009). Cross-selling in a call center with a heterogeneous customer population. *Operations Research*, 57(2), 299–313.
3. I. Gurvich and W. Whitt (2009). Queue-and-idleness-ratio controls in many-server service systems. *Mathematics of Operations Research*, 34(2), 363–396.
4. I. Gurvich and W. Whitt (2009). Scheduling flexible servers with convex delay costs in many-server service systems. *Manufacturing & Service Operations Management*, 11(2), 237–253.
5. G. Allon and I. Gurvich (2010). Pricing and dimensioning competing large-scale service providers. *Manufacturing & Service Operations Management*, 12(3), 449–469.
6. M. Armony and I. Gurvich (2010). When promotions meet operations: Cross selling and its effect on call-center performance. *Manufacturing & Service Operations Management* 12(3), 470–488.
7. I. Gurvich, J. Luedtke, and T. Tezcan (2010). Staffing call centers with uncertain demand forecasts: A chance-constrained optimization approach. *Management Science*, 56(7), 1093–1115.
8. I. Gurvich and W. Whitt (2010). Service-level differentiation in many-server service systems: A solution based on fixed-queue-ratio routing. *Operations Research*, 29, 567–588.
9. G. Allon, A. Bassamboo, and I. Gurvich (2011). “We will be right with you”: Managing customers with vague promises and cheap talk. *Operations Research* forthcoming.
10. B. Ata and I. Gurvich (2011). On optimality gaps in the Halfin-Whitt regime. *Annals of Applied Probability* forthcoming.
11. S. Deo and I. Gurvich (2011). Centralized vs. decentralized ambulance diversion: A network perspective. *Management Science*, 57(3), 1300–1319.
12. I. Gurvich and O. Perry (2011). Overflow networks: approximations and implications to call center outsourcing. *Operations Research* forthcoming.

Completed papers under review

13. R. Atar and I. Gurvich. Scheduling parallel servers in the non-degenerate slowdown diffusion regime: Asymptotic optimality results.
14. I. Gurvich. Validity of Heavy-Traffic Steady-State Approximations in Open Queueing Networks: Sufficient Conditions Involving State-Space Collapse.
15. I. Gurvich, J. Huang, and A. Mandelbaum. Excursion-based universal approximations for the Erlang-A queue in steady-state.

Work-in-Progress

1. S.B. Soh and I. Gurvich. Formulation choice in call centers: Service-level-differentiation revisited
2. I. Gurvich and A. Ward. On the control of matching queues.
3. E. Park, S. Deo and I. Gurvich. An empirical study of ambulance diversion.
4. I. Gurvich. Validity of heavy-traffic steady-state approximations: The case of parallel servers and G μ -type controls.
5. I. Gurvich, P. Liberman and A. Mandelbaum. Skill Based Routing: Data-Based Review and Research Prospects.

Conferences

- *Data stories from call centers with skills-based routing*. Technion, Haifa, Israel.
- *On Optimality Gaps of Asymptotically Optimal Policies in the Many-server Heavy-traffic Regime*. INFORMS Annual Meeting, Charlotte, November 2011.
- *Centralized vs. Decentralized Ambulance Diversion: A Network Perspective*. INFORMS Annual Meeting, Charlotte, November 2011.
- *Staffing Call Centers With Uncertain Demand Forecasts: A Chance-Constrained Optimization*. INFORMS Annual Meeting, Charlotte, November 2011.
- *Overflow Networks: Approximations and Implications to Call-Center Outsourcing*. MSOM Annual Meeting, Ann Arbor, June 2011
- *Overflow networks: approximations and implications to call center outsourcing*. Young European Queueing Theorists (YEQT) IV, Eindhoven, Netherlands, November 2010
- *Minimizing Convex Holding Costs in a Many-server Heavy-traffic Regime with Non-degenerate Slowdown*. INFORMS Annual Meeting, Austin Texas, November 2010.

- *Skill Based Routing (Part II): Data-based review and research prospects with focus on staffing and routing.* MSOM Annual Meeting, Haifa, Israel, June 2010.
- *Staffing Call Centers with Uncertain Demand Forecasts: A Chance-Constrained Optimization Approach.* MSOM Annual Meeting, Service Management SIG conference, Haifa, Israel, June 2010.
- *On Optimality Gaps of Asymptotically Optimal Policies in the Many-server Heavy-traffic Regime.* Young European Queueing Theorists (YEQT) III, Eindhoven, Netherlands, November 2009.
- *On Optimality Gaps of Asymptotically Optimal Policies in the Many-server Heavy-traffic Regime.* INFORMS Annual Meeting, San Diego, October 2009.
- *Empirical Analysis of Skill Based Routing in Call Centers: A Queueing-Science Perspective.* . INFORMS Annual Meeting, San Deigo, October 2009
- *Staffing Call Centers With Uncertain Demand Forecasts: A Chance-Constrained Optimization Approach.* Applied Probability Society conference, Cornell, July 2009.
- *Pricing and Dimensioning Competing Large-scale Service Providers .* Applied Probability Society conference, Cornell, July 2009.
- *Empirical Analysis of Skill Based Routing in Call Centers: A Queueing-Science Perspective.* MSOM conference, MIT, June 2009.
- *A Chance-constrained Optimization Approach to Call-center Staffing.* INFORMS Annual Meeting, D.C., October 2008
- *Overflow Models with Many-servers: Transient and Steady-state Analysis.* INFORMS Annual Meeting, D.C., October 2008.
- *Staffing Call Centers Using Fixed-queue-ratio and Simulation-based Optimization .* INFORMS Annual Meeting, D.C., October 2008.
- *Pricing and Dimensioning Competing Large-scale Service Providers .* INFORMS Annual Meeting, D.C., October 2008.
- *Staffing large-scale call centers to meet service-level targets.* KELLOGG/MCCORMICK joint operations seminar series, October 2008.
- *Skills-Based Routing and Staffing using Fixed Queue Ratios.* Wharton Financial Institutions Center's Contact Center Forum. February 2008.
- *Competition in Large Scale Service Systems: Do Waiting Time Standards Matter?.* MSOM conference, University of Maryland, June 2008.
- *Workforce Planning and Scheduling in Large Call Centers: Towards a Unified Approach* INFORMS Annual Meeting, Seattle, November 2007.
- *Competition in Large-scale Service Systems: Do Waiting Time Standards Matter?.* INFORMS Annual Meeting, Seattle, November 2007
- *Validity of Heavy-Traffic Steady-State Approximations in Open Queueing Networks: Sufficient Conditions Involving State-Space Collapse.* INFORMS Annual Meeting, Seattle, November

2007

- *Validity of heavy-traffic steady-state approximations in open queueing networks: Sufficient conditions involving state-space collapse.* The Fourteenth INFORMS Applied Probability Society Conference, Eindhoven, July 2007
- *Fixed-Queue-Ratio Routing in Call Centers.* INFORMS Annual Meeting, Pittsburgh, November 2006.
- *Cross-Selling in a Call Center with a Heterogeneous Customer Population.* MSOM Conference, Georgia-Tech, Atlanta, June 2006
- *Cross-selling in Service Focused Call Centers: Staffing, Control and Performance Analysis.* INFORMS Annual Meeting, San Francisco, November 2005
- *When Promotions Meet Operations: Cross-Selling and its Effect on Call-Center Performance,* MSOM Conference, Kellogg, Evanston, June 2005

Honors and Awards

- Co-authored with Gad Allon and Achal Bassamboo the paper:
Strategic Announcement and Interpretation of Information in Service Systems
that was awarded the second prize in the Junior Faculty Interest Group (JFIG) paper competition, October 2008
- First Prize, Manufacturing and Service Operations Management (MSOM) student paper competition, November 2006
Paper Title: *Cross-Selling in a Call Center with a Heterogeneous Customer Population*
- Co-authored with Mor Armony the paper:
When Promotions Meet Operations: Cross Selling and Its Effect on Call-Center Performance
that was awarded the first prize in the Junior Faculty Interest Group (JFIG) paper competition, November 2006

Invited Talks in Academic Institutions

Ross School of Business, University of Michigan, February 2011
Booth School of Business, University of Chicago, October 2010
Technion- Haifa, July 2008
Haifa University-Haifa, July 2008
Graduate School of Business, Stanford University, February 2008
Stern School of Business, NYU, February 2008
The Wharton School, University of Pennsylvania, Decembers 2008
ORIE Dept., Cornell University, January 2008
ISYE, Georgia Tech, February 2008
School of Business, Rochester University, January 2008
McCombs School of Business, University of Texas-Austin, January 2008
School of Business, Carnegie Mellon University, January 2008

School of Business, Duke University, January 2008
Sloan School of Management, MIT, February 2007

Teaching

MBA: Operations Management

PhD: Stochastic Foundations

Professional Service

Associate editor for *Operations Research*

Reviewer for: *Management Science, Manufacturing and Service Operations Management (M&SOM), Operations Research, Mathematics of Operations Research, Queueing Systems, Annals of Applied Probability, Stochastic Processes and Their Applications, Stochastic Systems, Stochastic Models, POMS, EJOR.*