AMR FARAHAT

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ACADEMIC APPOINTMENTS

Massachusetts Institute of Technology, Sloan School of Management — Cambridge, MA
    Senior Lecturer in Operations Research and Statistics — 2018 – Present
    Visiting Assistant Professor of Operations Research and Statistics — Fall 2017

Washington University in St. Louis, Olin Business School — St. Louis, MO
    Assistant Professor of Operations and Manufacturing Management — 2011 – 2018

Cornell University, Johnson Graduate School of Management — Ithaca, NY
    Assistant Professor of Operations Management — 2004 – 2011

EDUCATION

Massachusetts Institute of Technology — Cambridge, MA
    Ph.D. in Operations Research — 2004
    Thesis: Tractability Through Approximation - A Study of Two Discrete Optimization Problems
    Advisor: Cynthia Barnhart

Lancaster University — Lancaster, England
    M.Sc. in Operational Research — 1996

The American University in Cairo — Cairo, Egypt
    Graduate Diploma in Industrial Engineering — 1995
    B.Sc. in Mechanical Engineering (minors: Math; Computer Science); Summa Cum Laude — 1994

OTHER PROFESSIONAL EXPERIENCE

Unilever Research - *Manufacturing and Supply Chain Technology Group* — Port Sunlight, England
    Scientist — 1997 – 1999

McKinsey & Company — Amsterdam, The Netherlands
    Summer Associate — 2001

British Telecom - *Monitoring, Forecasting, and Modelling Unit* — London, England
    Summer Intern — 1996

RESEARCH INTERESTS

Applied optimization; Pricing and revenue management; Supply chain structure and performance

JOURNAL PUBLICATIONS

"On the Relationship Between Quantity Pre-Commitment and Cournot Games", with T. Huh and H. Li. *Operations Research.* 67(1), 109-122, 2019.

"The Multi-Product Newsvendor with Customer Choice", with J. K. Lee. *Operations Research*, 66(1), 123-136, 2018.

"On the Efficiency of Price Competition", with G. Perakis, *Operations Research Letters*, 39(6), 414-418, 2011.

"A Comparison of Bertrand and Cournot Profits in Oligopolies with Differentiated Products", with G. Perakis, *Operations Research*, 59(2), 507-513, 2011.

"A Nonnegative Extension of the Affine Demand Function and Equilibrium Analysis for Multiproduct Price Competition", with G. Perakis, *Operations Research Letters*, 38(4), 280-286, 2010.

"Profit Loss in Differentiated Oligopolies", with G. Perakis, *Operations Research Letters*, 37(1), 43-46, 2009.

"Airline Fleet Assignment with Enhanced Revenue Modeling: An Alternative Formulation and Solution Approach", with C. Barnhart and M. Lohatepanont, *Operations Research*, 57(1), 231-244, 2009.

STUDENT SUPERVISION

Ph.D. Dissertation Advisor of Joonkyum Lee, Johnson Graduate School of Management, Cornell University. Topic: Retail inventory planning. 2013. Currently at Sogang University, South Korea.

Ph.D. Committee Member: Kristine Xie, School of Hotel Administration, Cornell University. Topic: Selling and Pricing on Online Retail Channels. 2011.

Ph.D. Committee Member: Xiaomeng Guo, Olin Business School, Washington University in St. Louis. Topic: Quality and price competition when goods are durable and consumers are strategic. 2016.

Leader for Global Operations Thesis co-advisor of Sravani Yajamanam Kidambi, MIT. Company: Boston Scientific. Topic: AI Farm for Clinical Outcomes. 2022.

Master of Business Analytics Capstone Project Faculty Advisor of Victor Jouault and David Liszewski, MIT. Company: Assurance IQ. Topic: Improving Cross-Selling through Optimal Product Portfolios and Individualized Offers. 2021.

Master of Business Analytics Capstone Project Faculty Advisor of Haocheng Bi and Raphael Chew, MIT. Company: Unilever. Topic: Shopper Centricity and Customer Lifetime Value. 2021.

Master of Business Analytics Capstone Project Faculty Advisor of Mohamed Hamza Tazi Bouardi and Pierre-Henri Ramirez, MIT. Company: Comcast. Topic: Recommender Systems. 2020.

Specialized Masters in Supply Chain Thesis Advisor of Hossam Abuelwefa, Washington University in St. Louis. Topic: Call Center Performance Measurement using Regression and Data Envelopment Analysis Techniques. 2014.

TEACHING INTERESTS

Business analytics, data science, and operations management course development and teaching at the graduate and undergraduate levels; Analytics program development and leadership, including online and executive courses; Project-based advising and mentorship; Case and textbook writing

TEACHING EXPERIENCE

Massachusetts Institute of Technology, Sloan School of Management   2017 - 2022

15.060: *Data, Models, and Decisions* (MBA core class)
Fall 2021, 2020, 2019, 2018, 2017 (~600 students total)

15.087: *Engineering Statistics and Data Science* (LGO - joint MBA/MSc - core class)
Summer 2020, 2021 (~110 students total)

15.071: *The Analytics Edge* (MBA, MSc, Sloan Fellows)
Spring 2019 (~75 students)

Washington University in St. Louis, Olin Business School   2011 - 2018

MGT562: *Critical Thinking Processes and Modeling for Effective Decision Making* (MBA)
Spring 2018, 2017, 2016, 2015, 2014, 2013, 2012 (~700 students total)

OMM573: *Operations Management in the Service Industry* (MBA / MSc)
Spring 2018, 2017, 2016, 2015, 2014 (~250 students total)

OMM500N: *Supply Chain Analytics – Optimization* (MSc)
Spring 2018, 2017, 2016, 2015, Fall 2013, Spring 2013 (~150 students total)

OMM652: *Theory and Research Methods in Inventory and Supply Chain Management* (Ph.D.)
Fall 2013 (~8 students)

OMM655: *Dynamic Programming and Optimal Control* (Ph.D.)
Spring 2012 (~8 students)

Cornell University   2004 - 2011

NCC501: *Statistics for Management* (MBA core class)
Fall 2010, 2009, 2008, 2007, 2006, 2005, 2004 (~1800 students total)

Proseminar in Operations Management – 2 lectures (Ph.D.)
Fall 2009 (~5 students)

Pre-MBA Quantitative Skills
August 2006, 2005

Other Teaching Experience

Columbia IEOR: Invited lectures on Transportation and Logistics Management, Spring 2005, 2004

MIT: Pre-term Mathematics, August 2003

SELECTED CASES AND TEACHING ARTICLES

Fairbank: A teaching case exploring the detection, diagnosis, and mitigation of disparities or biases that can stem from model-based, data-driven, approaches to decision-making; co-authored with Rama Ramakrishnan; 2021; available online at: https://bookdown.org/fairbank/case/

Business Intelligence at Narayana Health: A teaching case on the development and deployment of a business intelligence system at Narayana Health; co-authored with Anesh Shetty; 2020.

"The INFORMS Case Competition – And Why We Need Analytics Teaching Cases", with J. J. Cochran, *ORMS Today*, April 2020.

Dartboard 2.0: A teaching case presenting a realistic-scale supply chain optimization problem; co-authored with Robert M. Freund, Sebastian Cubela, John Silberholz, and Lauren Berk; 2019.

RegionEx: A teaching case on statistical pitfall in descriptive analytics; co-authored with S. Martonosi; 2011. Accompanying article: "Flight Delays at RegionEx", with S. Martonosi, *INFORMS Transactions on Education*, 11(3), 100-105, 2011.

PRACTICE ARTICLES / PRESS COVERAGE RELATED TO RESEARCH

"Over- And Under-Supplying Hurts Profits: A New Methodology to Help Retailers Improve Inventory Decisions" Guest column at www.retailoperationsinsights.com, January 18th, 2018.

"A New Algorithm Helps Retailers Make Better Inventory Decisions" MIT Sloan Newsroom Article, December 2017. http://mitsloan.mit.edu/newsroom/articles/a-new-algorithm-helps-retailers-make-better-inventory-decisions/

"Over- and Under- Supplying Hurts Profits" MIT Sloan Press Release, November 2017. mitsloan.mit.edu/newsroom/press-releases/Over--and-under-supplying-hurts-profits--MIT-Sloan-professor-develops-new-methodology-to-help-firms-improve-inventory-decisions/

PROFESSIONAL SERVICE

Chair, INFORMS Case Competition Committee, 2020

Member, INFORMS Case Competition Committee, 2019-2021

Member, INFORMS OR & Analytics Student Team Project Judging Committee, 2018

Member, INFORMS Committee on Academic Programs Database, 2014-2015

Co-organizer, 10th Annual INFORMS Revenue Management and Pricing Section Conference, Cornell, June 16-18, 2010

Reviewer: Journal of Revenue and Pricing Management; Management Science; Manufacturing and Service Operations Management; Operations Research; Naval Research Logistics; Production and Operations Management; Transactions on Economics and Computation; Transportation Science

Referee: POMS Supply Chain Student Paper Competition; Elwood S. Buffa Doctoral Dissertation Award

HONORS AND AWARDS

First Place, INFORMS Case and Teaching Materials Competition for the case "RegionEx Flight Delays" co-authored with Susan Martonosi. 2009.

Core Faculty Teaching Award "Honoring Teaching Excellence for the professor who best fosters learning through lecture, discussion, and coursework" Johnson Graduate School of Management, Cornell. 2008 – 2009.

UPS Fellowship, Center for Transportation and Logistics, MIT. 2003 – 2004.

Chevening Scholarship, United Kingdom Foreign and Commonwealth Office. 1995 – 1996.

Graduate Merit Fellowship, School of Engineering, The American University in Cairo. 1994 – 1995.

Academic Honor Awards, School of Engineering, The American University in Cairo. 1994, 1993, 1992.

SELECTED INVITED TALKS

"The Multi-Product Newsvendor Problem with Customer Choice", MIT Sloan (2017), University of British Columbia (2016), MSOM (2015)

"The Efficiency of Price and Quantity Competition", Rutgers (2011), Washington University in St. Louis (2011)

"A Comparison of Price and Quantity Competition in Oligopolies with Differentiated Products", University of North Carolina (2010)

"Managing the Cornell Store's Textbook Retail Business", Consortium for Operational Excellence in Retailing (2010)

"The Newsvendor Problem with Customer-Driven Substitution", MIT (2010)

"Price Competition Among Multiproduct Firms", Cornell IEOR (2010)

OTHER

Languages: English (fluent); Arabic (native)

Computer languages: Python, R, Matlab, AMPL

Birthplace: Giza, Egypt

Citizenship: United States

Pronouns: he/him/his