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Professional Positions

2015-present	Associate Professor, Operations & Information Management Department, Isenberg School of Management, University of Massachusetts Amherst.
2008-2015	Assistant Professor, Operations & Information Management Department, Isenberg School of Management, University of Massachusetts Amherst.
2011-Present	Ph.D. Coordinator, Management Science Concentration, Isenberg School of Management.
2007-2008	Postdoctoral Associate at the Industrial & Systems Engineering Department, Virginia Tech.

Education

June 2007	**Ph.D., Industrial and Systems Engineering** (ISE), Virginia Tech, USA. **Dissertation :** *Enhanced Formulations for Minimax and Discrete Optimization Problems with Applications to Scheduling and Routing*. **Advisor :** Prof. Hanif D. Sherali.
August 2003	**M.S., Industrial and Systems Engineering**, Virginia Tech.
July 2002	**M.S., Operations Management in Production and Logistics**, Ecole des Mines de Nantes (EMN), France.
June 1997	**French Baccalauréat** (A-level equivalent) with distinction, Doha, Qatar.

Professional Experience and Interests

Instructor	OIM 310 *Manufacturing & Service Operations Methods*, UMass Amherst (2011-2014). OIM 412 *Supply Chain Management*, UMass Amherst (2009-2014). SCH-MGMT 752 *Deterministic Models in Management Science*, UMass Amherst (Fall : 2008-2014). SCH-MGMT 825X *Integer Programming*, UMass Amherst (Spring : 2009-2014).
Research Interests	Production operations management and retail analytics. Airline, machine, and sports scheduling. Integrated vehicle routing problems. Enhanced mathematical programming formulations.

Scholarly Articles

Published/Accepted Papers

* A. Ghoniem corresponding author ; † A. Ghoniem's doctoral student.

(1) Sherali, H. D. and **Ghoniem**, A. (2009), Joint vehicle assembly-routing problems : An integrated modeling and optimization approach, *Networks*, 53 (3), 249-265.

(2) **Ghoniem***, A. and Sherali, H. D. (2009), Complementary column generation and bounding approaches for set partitioning formulations, *Optimization Letters*, 3 (1), 123-136.

(3) **Ghoniem***, A. and Sherali, H. D. (2010), Models and algorithms for the scheduling of a doubles tennis training tournament, *Journal of the Operational Research Society*, 61, 723-731.

(4) **Ghoniem***, A. and Sherali, H. D. (2011), Set partitioning and packing versus assignment formulations for subassembly matching problems, *Journal of the Operational Research Society*, 62, 2023-2033.

(5) **Ghoniem***, A. and Sherali, H. D. (2011), Defeating symmetry in combinatorial optimization via objective perturbations and hierarchical constraints, *IIE Transactions*, 43 (8), 575-588.
Award : *IIE Transactions Journal Best Paper Prize 2012 (Operations Engineering & Analysis Area)*.

(6) Mafakheri, F., Breton, M., and **Ghoniem**, A. (2011), Supplier selection-order allocation : A two stage multiple criteria dynamic programming approach, *International Journal of Production Economics*, 132 (1), 52-57.

(7) Ali, F. M., Al-Hamadi, H., **Ghoniem***, A., and Sherali, H. D. (2012), Hardware-software co-design for reconfigurable field programmable gate arrays using mixed-integer programming, *Informatica*, 36 (3), 287-295.

(8) **Ghoniem***, A., Scherrer, C. R. and Solak, S. (2013), A specialized column generation approach for a vehicle routing problem with demand allocation, *Journal of the Operational Research Society*, 64, 114-124.

(9) Solak, S., Scherrer, C. R. and **Ghoniem**, A. (2014), The stop and drop problem in nonprofit food distribution networks, *Annals of Operations Research*, 221 (1), 407-426.

(10) Ali, A. I., **Ghoniem**, A., and Franke, A. (2014), Evaluating capacity management tactics for a legacy manufacturing plant, *Journal of the Operational Research Society*, 65, 1361-1370.

(11) **Ghoniem***, A., Sherali, H. D., and Baik, H. (2014), Enhanced models for a mixed arrival-departure aircraft sequencing problem, *INFORMS Journal on Computing*, 26 (3), 514-530.

(12) Farhadi†, F., **Ghoniem***, A., Al-Salem, M. (2014), Runway capacity management – An empirical study with application to Doha International Airport, *Transportation Research Part E*, 68, 53-63.

(13) **Ghoniem***, A., Maddah, B., and Ibrahim†, A., Optimizing assortment and pricing of multiple retail categories with cross-selling, *Journal of Global Optimization*, forthcoming.

(14) **Ghoniem***, A. and Farhadi†, F., A column generation approach for aircraft sequencing problems : A computational study, *Journal of the Operational Research Society*, 66, 1717-1729.

(15) **Ghoniem***, A. and Maddah, B. (2015), Integrated assortment, pricing, and inventory decisions : Optimization and insights, *Omega - The International Journal of Management Science*, 55, 38-52.

(16) **Ghoniem***, A., Farhadi†, F., and Reihaneh†, M. (2015), An accelerated branch-and-price algorithm for multiple-runway aircraft sequencing problems, *European Journal of Operational Research*, 246 (1), 34-43.

(17) Rabadi, G., Khallouli, W., Al-Salem, M., **Ghoniem***, A. (2015), Planning and management of maga sports events : A survey, *International Journal of Planning and Scheduling*, 2 (2), 154-178.

(18) **Ghoniem***, A., Flamand†, T., Haouari, M. (2016), Exact solution methods for a generalized assignment problem with location/allocation considerations, *INFORMS Journal on Computing*, forthcoming.

(19) Flamand†, T., **Ghoniem***, A., Maddah, B. (2016), Promoting impulse buying by allocating retail shelf space to grouped products, *Journal of the Operational Research Society*, forthcoming.

(20) **Ghoniem***, A., Flamand†, T., and Haouari, M. (2016), Optimization-based very large-scale neighborhood search for generalized assignment problems with location/allocation considerations, *INFORMS Journal on Computing*, forthcoming.

(21) Maddah, B., Kharbeche, M., Pokharel, S., **Ghoniem**, A. (2016), Joint replenishment model for multiple products with substitution, *Applied Mathematical Modelling*, forthcoming.

(22) **Ghoniem**, A., Ali, A. I., Al-Salem, M., Khallouli, W. (2016), Prescriptive analytics for FIFA World Cup lodging capacity planning, *Journal of the Operational Research Society*, forthcoming.

Under Review/Revision

(23) **Ghoniem**, A. and Reihaneh†, M., A branch-and-price algorithm for an integrated vehicle routing-allocation problem, under review.

Scholarly Articles (continued)

(24) Reihaneh†, M., and **Ghoniem**, A., A multi-start optimization-based heuristic for a food bank distribution problem, under revision.

(25) Reihaneh†, M., and **Ghoniem**, A., A branch-and-price algorithm for the generalized vehicle routing problem, under review.

(26) **Ghoniem**, A., Ali, A. I., Facilitating improved sporting legacy of FIFA World Cups : Eight-stadium schedules, under review.

(27) Flamand†, T., **Ghoniem***, A., Haouari, M., Maddah, B., Integrated assortment planning and store-wide shelf space allocation : An optimization-based approach, under revision.

Working Papers

Ghoniem, A., Flamand†, T., and Maddah, B., Maximizing impulse buying via store-wide shelf space management : From predictive to prescriptive analytics.

Ghoniem, A., Sherali, H. D., and Sarin, S. C., Lifted ATSP-based formulations for the job-shop scheduling problem.

Ghoniem, A. and Sherali, H. D., RLT-enhanced formulations for minimax optimization problems.

Ghoniem, A. and Sherali, H. D., Balancing production and resource consumption in mixed-model assembly lines for a major motorcycle manufacturer ; target : *IIE Transactions*.

Ghoniem, A., Maddah, B., Assortment, pricing, and ordering optimization under logit demand with seasonality, market segmentation, and cross-selling.

Maddah, B., Ghoniem, A., Bou Younes, M., Product line optimization with economies of scale and logistics considerations.

Conference Papers

(1) Musa, R., Chen F. F., and **Ghoniem**, A. (2006), Dynamic variation reduction technique in assembly lines after batch inspection, *IERC Proceedings*, Orlando, FL, May 2006.

(2) Al-Salem, A., Farhadi, F., Kharbeche, M., and **Ghoniem**, A. (2012), Multiple-runway aircraft sequencing problems using mixed-integer programming, Industrial and Systems Engineering Research Conference, Orlando, FL, May 2012, Winning 2012 ISERC Paper, OR Track.

(3) Ibrahim, A., **Ghoniem**, A. and Maddah, B. (2014), Retail assortment and pricing decisions under a deterministic maximum utility consumer choice model, Industrial and Systems Engineering Research Conference, Montreal, Canada, June 2014.

Presentations

Invited Talks

Joint vehicle assembly-routing problems : an integrated modeling and optimization approach, Virginia Tech INFORMS Student Chapter, May 2, 2007.

Symmetry compatible formulations via objective perturbations and hierarchical constraints, INFORMS Annual Meeting, Washington D.C., October 13, 2008.

Joint vehicle assembly-routing problems : an integrated modeling and optimization approach, UMass Amherst INFORMS Student Chapter, October 24, 2008.

Joint assortment, pricing, and ordering in retail management, IIE Annual Conference and Expo, Miami, FL, June 2, 2009.

Joint optimization of aircraft arrival and departure schedules, INFORMS Annual Meeting, San Diego, October 11, 2009.

Presentations (continued)

A column generation approach for joint vehicle assembly-routing problems, INFORMS Annual Meeting, San Diego, October 13, 2009.

Defeating symmetry in combinatorial optimization via objective function perturbations and hierarchical constraints, *IIE Transactions Best Papers Session*, Industrial and Systems Engineering Research Conference, San Juan, Puerto Rico, May 18-22, 2013.

Managing variety, pricing, and ordering decisions for substitutable retail products, POMS, Chicago, IL, April 20, 2012.

Maximizing impulse buying via store-wide shelf space analytics, INFORMS Annual Meeting, Philadelphia, November 4, 2015.

Contributed Talks

A mathematical programming approach for integrated large-scale retail decisions, INFORMS Annual Meeting, Austin, November 9, 2010.

A consumer-centric optimization approach for structuring retail product lines, POMS, Reno, NV, May 1st, 2011.

A combined arrival-departure runway scheduling problem, INFORMS Northeast Regional Conference, Amherst, MA, May 6, 2011.

A vehicle routing problem with location-allocation considerations, INFORMS Northeast Regional Conference, Amherst, MA, May 7, 2011.

Multiple-runway aircraft sequencing problems using mixed-integer programming, Industrial and Systems Engineering Research Conference, Orlando, FL, May 22, 2012.

Layout-based shelf space allocation to maximize impulse buying, EURO-INFORMS, Rome, Italy, July 1, 2013.

Lodging Capacity Analytics for the Qatar 2022 FIFA World Cup, INFORMS Annual Meeting, Philadelphia, November 4, 2015.

Departmental and University Committees

University Committees

2011-2013 Member of the *Research Council*, UMass Amherst.
Spring 2012 Member, Long-range Planning Task Force, *Research Council*.
Fall 2011 Member, Review Committee for Faculty Research Grant/Healey Endowment Grant, *Research Council*.

School Committees

2014-2015 Committee for the College Outstanding Teaching Award, Isenberg School of Management.

Departmental Committees

Spring 2015 Member, OIM Lecturer Search.
2015 Member, Committee for Graduate Program Strategic Planning Report.
2011 Member, Department of Finance and Operations Management Faculty Search Committee.
2010 Member, Department of Finance and Operations Management Faculty Search Committee.
2009 Member, Department of Finance and Operations Management Curriculum Task Force Committee.

M.Sc. Student Committees

2012 Member, Chetan Shivsharan, M.Sc. Thesis : *Optimizing the Safety Stock Inventory Cost Under Target Service Level Constraints*.

Ph.D. Student Committees

2010 Member, Davit Khachatryan, Ph.D. Dissertation : *Topics in Univariate Time Series Analysis with Business Applications*.
2012 Member, Baris Hasdemir, Ph.D. Dissertation : *Enabling easy consumer access to services and products*.
2013 Member, Milad Ebtehaj, Ph.D. Dissertation : *Two distribution tactics for retail demand fulfillment*.

Departmental and University Committees (continued)

2014 Member, Güven Ince, Ph.D. Dissertation : *Resource and Supply Allocation and Relief Center Location for Humanitarian Logistics*.

Professional Activity

Service to Profession

2013-2014 : *INFORMS Junior Faculty Interest Group* (JFIG), Secretary.

Editorial Board : *Advances in Operations Research* (2012-present).

Referee for journals : *European Journal of Operational Research* ; *IEEE Transactions on Intelligent Transportation Systems* ; *Interfaces* ; *Journal of Engineering Research* ; *Journal of Global Optimization* ; *Journal of the Operational Research Society* ; *Operations Research* ; *Omega*.

Referee for funding agencies : *Undergraduate Research Experience Program* of *Qatar Foundation* (Qatar) ; *Fonds de recherche du Québec* (Canada).

Chaired INFORMS sessions, 2011, 2012, 2013, and 2015 on airport operations management.

Membership

The Institute for Operations Research and the Management Sciences (INFORMS) ; Production and Operations Management Society (POMS) ; Institute of Industrial Engineers (IIE).

Awards

2012-2013 Isenberg School of Management Outstanding Teaching Award.
2012 IIE Transactions Journal Best Paper Prize 2012 (Operations Engineering & Analysis Area).
ISERC Conference, winning paper in OR Track.
2011-2012 Nominated for Isenberg School of Management Outstanding Teaching Award.
Chancellor's Junior Faculty Fellow.
2009 Outstanding Faculty Support Award, INFORMS Chapter, University of Massachusetts Amherst.
2008 Nominated by the Isenberg School of Management, University of Massachusetts Amherst, to attend the Teaching Effectiveness Colloquium at the *INFORMS* Annual Meeting, Washington D.C.
2006 Nominated by the ISE Department, Virginia Tech, to attend the Doctoral Colloquium at the *INFORMS* Annual Meeting, Pittsburgh, PA.
1997-1999 Excellence Scholarship by the French government.

Grants

2008–2009 : "Optimization of Aircraft Arrival and Departure Schedules in Multiple-Runway Airports." Agency : Faculty Research Grant/Healey Endowment Grant, University of Massachusetts Amherst. Award : $6,990.

12/1/2010–11/30/2012 : "Integrated Modeling and Optimization Approaches for Airport Terminal Area Management." Agency : Qatar National Research Fund, National Priorities Research Program, Grant NPRP 09-253-2-103. Role : Lead Principal Investigator. Award : $493,032.

12/2010–6/2012 : "Tactical Optimization Models for the Design of Retail Product Lines." Agency : Faculty Research Grant/Healey Endowment Grant, University of Massachusetts Amherst. Award : $9,828.

12/2012–12/2014 : "Cutting-Edge Optimization for Modern, Consumer-Focused Retailing." Agency : Qatar National Research Fund, National Priorities Research Program, Grant NPRP 5-591-5-082. Role : Co-PI. Award : $511,185.

11/2013-11/2016 : "Analytics for System-Wide Infrastructure and Capacity Planning for Qatar 2022 FIFA World Cup." Qatar National Research Fund, National Priorities Research Program, Grant NPRP 6-248-5-023. Role : Lead PI. Award : $530,477.

Ph.D. Advisees

(1) Farbod Farhadi (Fall 2009-Spring 2014), Management Science Ph.D. Concentration, Isenberg School of Management, UMass Amherst.
Dissertation : *Runway Operations Management : Models, Enhancements, and Decomposition Techniques*.
Assistant Professor, Mario J. Gabelli School of Business, Roger Williams University, starting Fall 2014.

(2) Ameera Ibrahim (Spring 2011-Summer 2014), Management Science Ph.D. Concentration, Isenberg School of Management, UMass Amherst.
Dissertation : *Consumer-Centric Assortment Planning Under Cross-Selling Effects*.
Visiting Assistant Professor, School of Economics and Business Administration, Saint Mary's College of California, starting Fall 2014. (Tenure-Track Assistant Professor of Business Analytics at SMC, Fall 2015)

(3) Tülay Flamand (Fall 2011-present), Management Science Ph.D. Concentration, Isenberg School of Management, UMass Amherst.
Dissertation : *Retail Analytics and Optimization Models for Store-Wide Shelf-Space Allocation*.

(4) Mohammad Reihaneh (Spring 2014-present), Management Science Ph.D. Concentration, Isenberg School of Management, UMass Amherst.
Dissertation : *Enhanced models and solution methodologies for classes of integrated vehicle routing problems*.