

# Hyun-soo Ahn

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## Professional History

### **Ross School of Business, University of Michigan, Ann Arbor, MI Technology and Operations**

Full Professor 2014-Present

Ford Motors Co. Director of Tauber Institute for Global Operations 2020-

Thomas Cook Professor of Business Administration 2019- 2022

Jack D. Sparks-Whirlpool Corporation Professor of Business Administration 2017-2019

Michael and Kay Hallman Fellow 2015-2017

Director of Master of Supply Chain Management 2015-2016

Associate Professor 2009-2014

Assistant Professor 2003 - 2009

Sanford R. Robertson Assistant Professor 2006 - 2007

### **University of California, Berkeley CA Department of Industrial Engineering and Operations Research**

Assistant Professor 2001 - 2003

### **Intel Corporation**

System Analyst 1998

## Education

### **University of Michigan, Ann Arbor, Michigan**

Ph.D. Industrial and Operations Engineering, April, 2001

### **KAIST (Korea Advanced Institute of Science and Technology), Korea**

B.S. Industrial Engineering, 1993

## Honors, Awards, and Grants

- Ross Researcher of the Year 2019
- Jack D. Sparks-Whirlpool Corporation Professor 2017
- Teaching Excellence Award (chosen by Global MBA class of 2017)
- Teaching Excellence Award (chosen by Executive MBA class of 2014)
- Teaching Excellence Award (chosen by Global MBA class of 2013)
- Teaching Excellence Award (chosen by Executive MBA class of 2012)
- Teaching Excellence Award (chosen by Global MBA class of 2011)
- Teaching Excellence Award (chosen by Undergraduate class of 2006)

- Speaker at MBA Last Lecture Series Class of 2013 and 2014 (a handful of professors are selected by the MBA students to speak to the entire graduating class on its last day).
- One of the top business school professors (“Best in Class”) by BusinessWeek (2007)
- 2006 Sanford R. Robertson Assistant Professor of Business Administration in recognition for early scholastic achievement of a junior faculty.
- NSF Grant DMI-0245382 (co-PI Tava Lennon Olsen): \$350,000 Operational Strategies for Price and Service Quality Competition, Sep. 2003- Sep.2006
- NSF Grant DMI-0200439 (co-PI Phil Kaminsky): \$500,000 Models and Algorithms for Integrated Multi-Stage Production/Distribution Systems, Sep. 2002- Sep 2005.
- Department of Energy Grant (subcontracted via Powerlight Inc.): \$75,000 Throughput Improvements and Lean Manufacturing Production, Jul. 2002- Jul. 2003.
- Honorable mention for 2005 IEEE transactions on Engineering Management Best Paper
- Regent Junior Faculty Fellowship (UC Berkeley), Junior Faculty Research Grant (UC Berkeley)
- Rackham Pre-doctoral Fellowship, 1999.
- Intel Foundation Fellowship 1997-1998.

## **In the News**

- Writing monthly columns for Maekyung Economics Newspaper.
- “University of Michigan revamps SCM program, debuts Supply Chain Consulting Studio”, Supply Chain Quarterly, Feb. 2017
- “Demand information can help adjust capacity”, Phys.Org, Feb 2017
- “Michigan Ross Takes a New Route with MSCM Program”, Business Wire, Jan. 7. 2017
- “Teaching for laughs,” BusinessWeek, September 5, 2007.
- “Managing Uncertainty,” Dividend (UM Business School Alumni Magazine), 2007.
- “Playing the waiting game in a ridiculously long line,” Newhouse News Service, November 30, 2005.

## **Ph.D. dissertation supervised:**

13 students graduated/13 students got academic placements.

1. Maria Mayorga. Currently a full professor (with tenure) at IE department, NC State.
2. Mehmet Gumus. Currently a full professor (with tenure) at McGill University.
3. Man Yu. Currently an associate professor (with tenure) at HKUST
4. Chia-wei Kuo. Currently a full professor (with tenure) at National Taiwan University
5. Dadi Wang. first position, an assistant professor at McGill University
6. Yan Yin. First position an assistant professor at HEC Paris
  - Finalist, POMS Student Paper Competition
7. Anyan Qi. Currently an assistant professor at UT Dallas
8. Bam Amornpetchkul. an assistant professor at NIDA Business School, Thailand
9. Ruthy Beer. Currently an assistant professor at Kelley Business School, Indiana University
10. Hakjin Chung. Currently an assistant professor at KAIST graduate school of management.
11. Beryl Chen. Currently an assistant professor at the University of Illinois
12. Jacob Chestnut. Starting as an assistant professor at Cornell University
13. Zhenyu Zhang, Graduating in June 2021. University College of London.

## Industry Collaboration

Google, Amazon, Microsoft, Cisco, Intel Corp., Boeing, General Motors, Medtronic, Guidant, GE Healthcare, Powerlight, Ford Motors Co., Dow Chemicals, Great Lakes Home Care, Youth for Understanding (non-profit), SPX, Ametek, University of Michigan Healthcare System, Dell, Cosmax, Intercontinental Hotel, Dell, Avis rental, Radial, Little Ceasars.

Ran a corporate advising council for MSCM program.

## Teaching

### **At Ross School of Business**

Tauber Core Course – TO 701 Topics in Global Operations

Online MBA elective – Managerial Big Data Analytics (TO 718)

EMBA – Big Data Analytics for Executives (EMBA 610)

MBA elective – Data Mining (TO 567), Applied Regression Models (TO 566)

MSCM capstone course – “Supply Chain Consulting Studio”

MBA elective course: “Applied Business Analytics and Decisions” Weekend

MBA core course “Applied Business Statistics”

MBA core course “Applied Business Statistics” (TO502)- Course Coordinator MM

(Master of Management) “Business Analytics and Statistics” Core

Executive MBA core course “Decision Making under Uncertainty” (EMBA 603)

GMBA core course “Applied Business Statistics” (TO-595):

Undergraduate core course “Business Statistics and Management Science- Course coordinator

2006 (3 sections): 4.97/5

2005 (3 sections): 4.83/5

Ph.D. seminar on stochastic resource allocation, Fall 05. Course evaluation 4.9/5.0

Faculty advisor: Multidisciplinary Action Projects (More than 20 projects)

Tauber Internship Projects (More than 12 projects)

### **At University of California at Berkeley**

Ph.D. course: Applied Stochastic Processes II (IEOR-263B)

Undergraduate courses: Service Operation Design and Analysis (IEOR-151)

“Production Operations Analysis (IEOR-150)

## Publications

### **Refereed Publications: Journal and book chapter**

[P1] Hyun-soo Ahn, Izak Duenyas, and Rachel Zhang. 1999. Optimal stochastic scheduling of a two-stage tandem queue with parallel servers. *Advances in Applied Probability*, 31, 1095-1117.

[P2] Hyun-soo Ahn, Izak Duenyas, and Mark Lewis. 2002. Optimal control of a two-stage tandem queueing system with flexible servers. *Probability in the Engineering and Informational Sciences*, 16, 453-369.

[P3] Ilan Adler., Hyun-soo Ahn, Richard Karp, and Sheldon Ross. 2003. Coalescing times for IID random variables with applications to population biology. *Random Structures and Algorithms*. 23(2), 155-166.

- [P4] Hyun-soo Ahn, Izak Duenyas, and Rachel Zhang. 2004. Optimal control of a flexible server. *Advances in Applied Probability*, 36, 139-170.
- [P5] Hyun-soo Ahn and R. Righter. 2005. Multi-actor Markov decision processes, *Journal of Applied Probability*, Vol. 42, 15-26.
- [P6] Hyun-soo Ahn and Philip Kaminsky. 2005. Production and distribution policy in a two stage stochastic push-pull supply chain. *IIE Transactions*, 37(7), 609-621.
- [P7] Hong-Bae Jun, Hyun-Soo Ahn, and Hyo W. Suh. 2005. On identifying and estimating the cycle time of product development process, *IEEE Transactions on Engineering Management*, 52, 336-349. Honorable mention for 2005 IEEE-TEM Best Paper Award.
- [P8] David Kaufman, Hyun-soo Ahn, and Mark E. Lewis. 2005. On the introduction of agile, temporary workers into a tandem queueing system. *Queueing Systems*, 51, 173-186.
- [P9] Hyun-soo Ahn, Rhonda Righter, and J. G. Shanthikumar. 2005. Staffing decisions for heterogeneous workers with turnover, *Mathematical Methods of Operations Research*, 62(3), 499-514.
- [P10] Ilan Adler., Hyun-soo Ahn, Richard Karp, and Sheldon Ross. 2005. A probabilistic model for the survivability of cells. *Journal of Applied Probability*, Vol. 42, 919-931.
- [P11] Hyun-Soo Ahn, M. Mayorga, and J. G. Shanthikumar. 2006. Optimal production and capacity policy in a make-to-stock System with multi-class demand. *Probability in the Engineering and Informational Sciences*, 20, 609-634,
- [P12] Hyun-soo Ahn and R. Righter. 2006. Dynamic load balancing with flexible workers, *Advances in Applied Probability*, 38, 621-642.
- [P13] Hyun-soo Ahn , Mehmet Gumus, and Philip Kaminsky. 2007. Pricing and manufacturing decisions when demand is a function of prices in multiple periods. *Operations Research*, 55, 1039-1057.
- [P14] Jung-hyun Kim, Hyun-soo Ahn, Rhonda Righter. 2009. Optimal production policies with multistage stochastic demand leadtimes. *Probability in the Engineering and Informational Sciences*, 23, 515-543.
- [P15] Hyun-soo Ahn , Mehmet Gumus, and Philip Kaminsky. 2009. Inventory, discounts, and the timing effects. *M&SOM*, 11-4, 613-629.
- [P16] Katia Frank, Hyun-soo Ahn, Rachel Zhang. 2009. Inventory policies for a make-to-order system with a perishable component and fixed ordering cost. *Naval Research Logistics*, 56. 127-141.
- [P17] Hyun-soo Ahn. 2010. Understanding and Managing Variability Wiley Encyclopedia of Operations Research and Management Science.
- [P18] Jung-Hyun Kim, Hyun-soo Ahn, Rhonda Righter. 2011. Managing queues with Heterogeneous Servers. *Journal of Applied Probability*, 48(2) 435-452.

- [P19] Chia-wei Kuo, Hyun-soo Ahn, Goker Aydin. 2011. Dynamic pricing of limited inventories when customers negotiate. *Operations Research*, 59, 882-897.
- [P20] Maria Mayorga, Hyun-soo Ahn. 2011. Joint Management of Capacity and Inventory in Make-to-Stock Production Systems. *European Journal of Operational Research*, 212 (2), 312-324.
- [P21] Chia-wei Kuo, Hyun-soo Ahn, Goker Aydin. 2013. Pricing Policy in a Supply Chain: Negotiation or Posted Pricing. *Production and Operations Management* 22(3):626-641.
- [P22] Hyun-soo Ahn and Mark E. Lewis 2013. Flexible Server Allocation and Customer Routing Policies for Two Parallel Queues when Service Rates are not Additive. *Operations Research* 61(2): pp. 344–358.
- [P23] Hark-chin Hwang, Hyun-soo Ahn, Philip Kaminsky. 2013. Basis Paths and a Polynomial Algorithm for the Multi-Stage Production-Capacitated Lot-Sizing Problem. *Operations Research* 61(2): pp. 469-482.
- [P24] Franklin Dexter, Hyun-soo Ahn, Richard H. Epstein. 2013. Choosing which provider sees the next patient in the preanesthesia evaluation clinic based on the relative speeds of the providers. *Anesthesia & Analgesia*, pp 919-923.
- [P25] Maria Mayorga, Hyun-soo Ahn, Goker Aydin. 2012. Assortment with Inventory Decisions with Multiple Quality Levels. *Annals of Operations Research*, Vol 211(1), 301-331.
- [P26] Man Yu, Hyun-soo Ahn, Roman Kapuscinski. 2014. Rationing Capacity in Advance to Signal Quality. Forthcoming in *Management Science*.
- [P27] Man Yu, Roman Kapuscinski, Hyun-soo Ahn. 2014. Advance Selling and Interdependent Consumer Valuations. Forthcoming in *Management Science*.
- [P28] Anyan Qi, Hyun-soo Ahn, Amitabh Sinha. 2014. Investing in a Shared Supplier in a Competitive Market: Stochastic Capacity. *POMS*
- [P29] Ruthy Beer, Hyun-soo Ahn, Steve Leider. 2016. Can Trustworthiness in a Supply Chain be signaled? Accepted at *Management Science*
- [P30] Hwang, H. Ahn, H., Kaminsky, P. 2016 Transportation-Based Approach for the Two-Stage Production-Capacitated Lot-Sizing Problem. Accepted at *Journal of Global Optimization*.
- [P31] Anyan Qi, Hyun-soo Ahn, Amitabh Sinha. 2016. Capacity Investment with Demand Learning. Accepted at *Operations Research*.
- [P32] Hyun-soo Ahn, Stefanus Jasin, Philip-Kaminsky, Yang Wang. Multi-Period Batch Production and Distribution Problem. Accepted at *Operations Research*
- [P33] Gabriel Zayas-Caban, Hyun-soo Ahn. 2017. Dynamic Control of a Single Server System When Jobs Change Status, Accepted at *Probability in Engineering and Informational Science*.
- [P34] Bam Amornpetchkul, Hyun-Soo Ahn, Ozge Sahin. 2015 Conditional Promotion and Cognitive Overspending. Accepted *Production and Operations Management*

- [P35] Beryl Chen, Xiuli Chao, Hyun-soo Ahn, 2016 Dynamic Pricing and Inventory Control with Nonparametric Demand Learning. Accepted, *Operations Research*
- [P36] Tyler, Moxey, Hakjin Chung, Hyun-soo Ahn, Rhonda Righter. 2017. When is Anarchy Beneficial? *Performance Evaluation Review*.
- [P37] Hakjin Chung, Hyun-soo Ahn, Stefanus Jasin, 2018 On (Re-Scaled) Multi-Attempt Approximation of Customer Choice Model and its Application to Assortment Optimization. Accepted *Production and Operations Management*
- [P38] Anyan Qi, Hyun-soo Ahn, Amitabh Sinha. 2019. To share or not to share? Contract structures for capacity investments in shared suppliers. *Production and Operations Management*, 27(8)
- [P39] Hakjin Chung, Hyun-soo Ahn, Rhonda Righter, 2020 The Potentially Negative Effects of Cooperation in Service Systems, 2020, *Advances in Applied Probability*
- [P40] Hyun-soo Ahn, Derek Wang, Owen Wu. 2021. Asset Selling under Debt Obligations. Forthcoming, *Operations Research*.
- [P41] Ruthy Beer, Hyun-soo Ahn, Stephen Leider. The Signaling and Incentive Effects of Supplier Awards. Accepted at *M&SOM*

## Working Papers

- [P42] Yan Yin, Hyun-soo Ahn, Damian Beil. The role of cost modeling in competitive bid Procurement Gathering Pre-Auction Intelligence on Suppliers. Under review at *Operations Research*
- [P43] Hoda Parvin, Hyun-soo Ahn, Mark van Oyen. 2013. Control Policies for the N-network with Impatient Customers and Finite Buffers. Under revision *IIE Transactions*
- [P44] Hakjin Chung, Hyun-soo Ahn, So-Yeon Chun. Dynamic Pricing with Point Redemption. Revision under review at M&SOM
- [P45] Jacob Chestnet, Hyun-soo Ahn, Ravi Anupindi. Giving it away for free to increase profit. Submitted.
- [P46] Mengzhenyu Zhang, Hyun-soo Ahn, Joline Uichanco. Pricing for a New Product, Revision *Operations Research*
- [P47] Eren Cetinkaya, Hyun-soo Ahn, Izak Duenyas. 2018. Competition and Collaboration in Capacity Investments. Working paper
- [P48] Bam Amornpetchkul, Hyun-soo Ahn, Ozge Sahin. Dynamic Pricing with Transshipments for Dual-Channel
- [P49] Yan Yin, Hakjin Chung, Hyun-soo Ahn, Damian Beil. Procurement Auctions and Error-Prone RFQ. el Retailers. Working paper

[P50] Ruthy Beer, Hyun-soo Ahn, Steve Leider. 2021. The Impact of Decision Rights and Long-Term Relationships on Innovation Sharing. 3<sup>rd</sup> round review at *Management Science*

[P51] Hyun-soo Ahn, Chris Ryan, Joline Uichanco, Zhenyu Zhang, 2021, On the Performance of Certainty-Equivalence Pricing, 2<sup>nd</sup> round review at *Management Science*

[P52] Hyun-soo Ahn, John-Silverholz, Suezze Song, and Xiaoyu Wu, 2021. Optimal COVID-19 Containment Strategies: Evidence Across Multiple Mathematical Models, Submitted.

# Invited Talks

## Recent seminar

**2021:** POMS-HK Distinguished Speaker Seminar

Cornell University

USC Marshall school of Business

Johns Hopkins Carey School of Business

**2019:** Washington University at St. Louis

**2018:** UT Dallas

**2017:** University of Maryland, UC San Diego

**2016:** University of Oregon, University of California at  
Berkeley Chinese University of Hong-Kong

**2015:** University of Toronto, University of Minnesota, University of Illinois,

**2014:** Carnegie-Melon, Chinese University of Hong Kong, Univ. of Pittsburgh, Yale.,  
KHUST, National University of Singapore

**2013:** University of California at Berkeley, University of California at Los Angeles, National  
Taiwan University,

**2012:** Chicago Booth School of Business, HKUST Business School. University of City  
College in London, Purdue University. Kenan-Flagler Business School at University of  
North Carolina

## Other University Seminar

Cornell University, Case Western University, Washington University at Saint Louis,  
Northwestern University (IEMS), Purdue University (IE), Tilberg University, University of  
Arizona.

**Industry talks:** Hewlett Packard, Samsung Electronics, Intercontinental Hotel, Cosmetics  
Industry CEO Forum (South Korea), Cosmax.

**Invited discussant:** M&SOM SIG Conference, 2008, Consumer oriented OM models  
conference, Washington University, 2007, Competition with Delays conference, Washington  
University, 2004, Informs Doctoral Colloquium.

**Over 100+ conference presentations.**

## Professional Activities and Service

### For Ross School of Business & University of Michigan

- Director of Master of Supply Chain Management
- Ph.D. program coordinator 2008-2011
- Curriculum committee: 2010-
- Invited panel for new faculty orientation. 2006, 2007, 2008
- Invited lecturer for Prepare initiative 2009-
- Participated in new faculty recruiting
- Faculty advisor: Delta Sigma Pi, Ross Follies



- Faculty Senate Grievance Committee
- University Conflict Resolution Board.

#### **For Academic community**

- Invited cluster organizer, INFORMS 2014 at San Francisco (20+ clusters and 100+ sessions)
- co-chair, INFORMS doctoral colloquia, 2002
- co-chair, M&SOM student paper competition. 2009
- cluster chair, M&SOM sponsored cluster (26 sessions) at INFORMS, 2005.
- M&SOM best paper selection committee. 2010
- Invited speaker, INFORMS doctoral colloquia, 2005
- Session chair for more than dozen INFORMS sessions
- Panel judge for National Science Foundation, US-Israel Binational Science Foundation, M&SOM student paper competition, POMS student paper competition, JFIG paper competition
- Associate editor and guest editor for a special issue: Probability in the Engineering and Informational Sciences, Editorial Review Board: POMS
- Associate editor for Operations Research.
- **Referee** for Management Science, Operations Research, M&SOM, Journal of Applied Probability, Advances in Applied Probability, Queueing Systems, Operations Research Letters, Naval Research Logistics, IIE Transactions, Probability in the Engineering and Informational Sciences, European Journal of Operational Research.