

MEHMET U.S. AYVACI

The University of Texas at Dallas
Information Systems at the Jindal School of Management
December 2023

EDUCATIONAL HISTORY

University of Wisconsin · Madison, WI · August 2012

Ph.D. in Industrial & Systems Engineering

Stanford University · Palo Alto, CA · 2005

M.S. in Management Science & Engineering

Texas A&M University · College Station, TX · 2003

B.S. in Industrial Engineering

EMPLOYMENT HISTORY

INFORMATION SYSTEMS at the University of Texas, Dallas, TX

Associate Professor (2019-Current)

Assistant Professor (2012-Current)

INFORMATION, RISK, AND OPERATIONS MANAGEMENT at the University of Texas, Austin, TX

Visiting Assistant Professor (2017-2018)

INDUSTRIAL AND SYSTEMS ENGINEERING & RADIOLOGY at the University of Wisconsin, Madison, WI

Research Assistant (2008-2012)

CENTER FOR OPERATIONS EXCELLENCE (COE), Vancouver, BC

Project Manager (2007-2008)

EPCGlobal-GS1 US (RFID Standardization Consortium), Lawrenceville, NJ

Business Analyst (2005)

PROFESSIONAL RECOGNITIONS AND HONORS

PRABUDDHE DE BEST PAPER AWARD—(WITS–Workshop on Information Systems and Technology · 2023)

BEST PAPER AWARD RUNNER UP—(INFORMS Information Systems Society · 2023)

BEST PAPER AWARD—(POMS College of Healthcare Operations Management · 2021)

BEST STUDENT PAPER RUNNER-UP—(Decision Analysis Society, INFORMS · 2021, Z Mobini–student entrant)

BEST PUBLISHED PAPER AWARD —(Information Systems Research · 2020)

BEST PAPER AWARD —(INFORMS eBusiness Section · 2018)

BEST PAPER AWARD RUNNER UP—(CHITA · 2018)

DISTINGUISHED SERVICE AWARD—(Management Science · 2017)

BEST YOUNG RESEARCHER AWARD—(CHITA/WHITE · 2016)

BEST PAPER AWARD FINALIST—(INFORMS CIST · 2015)

BEST PAPER AWARD FINALIST—(CHITA/WHITE · 2015)

BEST STUDENT PAPER RUNNER-UP—(Decision Analysis Society, INFORMS · 2015, ME Ahsen–student entrant)

BEST STUDENT PAPER AWARD—(Decision Analysis Society, INFORMS · 2012)

HONORABLE MENTION—(Doing Good with Good OR Competition, INFORMS · 2012)

ACHIEVEMENTS IN ORIGINAL INVESTIGATION

(* : Students, † : Authors in Alphabetical Order, ‡ : Co-first author)

MANAGEMENT JOURNALS

Publications

1. “Value of Algorithm-Enabled Process Innovation: The Case of Sepsis” · †Adjerid I, Ayvaci MUS, Ozer O · *MS&OM* 25 (4), 1545-1566 (2023)
 - *Runner Up, Best Paper Award, Conference on Health IT and Analytics 2018.*
 - *POMS 2019, College of Healthcare OM, Research in Practice Showcase Presentation.*
2. “The Business of Healthcare: Physician Integration in Bundled Payments” · Vlachy J*, Ayer T, Ayvaci MUS, Raghunathan S. · *MS&OM* 25 (3), 996-1012 (2023).
3. “When IT Creates Legal Vulnerability: Not Just Overutilization but Underprovisioning of Health Care Could be a Consequence” · Kim Y*, Ayvaci MUS, Raghunathan S, Ayer T · *MIS Quarterly* · 46(3), (2022)
 - *Best Paper Award, INFORMs eBusiness Section 2018.*
4. “Designing Payment Contracts for Healthcare Services to Induce Information Sharing: The Adoption and the Value of Health Information Exchanges (HIEs)” · †Ayvaci MUS, Cavusoglu H, Kim Y*, Raghunathan S · *MIS Quarterly*, · 25 (2), (2021).
5. “The Impact of Health Information Exchanges on Emergency Department Length of Stay” · †Ayer T, Ayvaci MUS, Karaca Z, Vlachy J · *Production and Operations Management* 28 (3), 740-758 (2019).
 - *Finalist, Best Paper Competition at INFORMS CIST 2015.*
 - *Finalist, Best Paper Competition at Workshop on Health IT & Economics (Currently CHITA) 2015.*
 - Practitioner Newsletter Article on Findings: **ED Management** Vol. 31, No. 6; p. 61-72, *Investigators Find Connection Between Health Information Exchange Use, Shorter ED Stays.*
 - **UTD News Center**, March 14, 2019. *Health Information Exchanges May Remedy Long Emergency Stays.*
6. “When Algorithmic Predictions Use Human-Generated Data: A Bias-Aware Classification Algorithm for Breast Cancer Diagnosis” · † Ahsen ME, Ayvaci MUS, Raghunathan S · *Information Systems Research* 30 (1), 97-116 (2019).
 - *Best Published Paper Award, Information Systems Research Journal, 2020*
 - *Young Researcher Award, Workshop on Health IT and Economics (Currently CHITA) 2016*
 - *Finalist, Best Student Paper Competition of DAS-INFORMS (ME Ahsen, student entrant)*
7. “Preference-Sensitive Management of Post-Mammography Decisions in Breast Cancer Diagnosis” · Ayvaci MUS, Alagoz O, Ahsen ME, Burnside ES · *Production and Operations Management* 27 (12), 2313-2338 (2018).
8. “Timing the Use of Breast Cancer Risk Information in Biopsy Decision Making” · Ayvaci MUS, Ahsen ME, Raghunathan S, Gharibi Z* · *Production and Operations Management*, 26 (7), p. 1333-1358 (2017).
 - *This paper was covered by more than a dozen news outlets including Science Daily, MedicalXpress, Medical News Today etc.*¹

¹See for example <https://healthmanagement.org/c/imaging/news/patient-risk-profiles-improve-mammogram-readings> and <http://medicalxpress.com/news/2014-06-breast-cancer-diagnosis-mammography-patient.html>

9. “The Effect of Budgetary Restrictions on Breast Cancer Diagnostic Decisions” · Ayvaci MUS, Alagoz O, Burnside ES · **Manufacturing & Service Operations Management**, 14 (4) p. 600-617, (2012).
 - *Honorable Mention, Doing Good with Good OR Competition.*
 - *Winner, Best Student Paper Competition of DAS-INFORMS*

Selected Articles Under Review or Revision

10. “Contests for Predictive Algorithms: Ensembling, Interdependency, and Optimal Rewards Design” · Ahsen M E, Ayvaci MUS, Raghunathan S, Subramanyam R · **Management Science, Revising for 2nd Round**
11. “It Takes Two to Make It Right: How Nurses’ Response to Sepsis Alerts Impacts Physicians’ Process Compliance” · †Ayvaci MUS, Mobini Z*, Ozer O · **MS&OM, Revising for 3rd Round**
12. “Will Machines Take Over? Algorithms for Human-Machine Collaborative Decision Making in Healthcare” · Ahsen M E, Ayvaci M U S, Mookerjee R · **Management Science, Revising for 2nd Round**
13. “To Catch a Killer: A Data-Driven Personalized Sepsis Alert System, Accounting for Caregivers Compliance Behavior” · †Ayvaci MUS, Mobini Z*, Ozer O · **Management Science, Revising for Resubmission**
 - *Best Paper Award, POMS College of Healthcare Operations Management 2021*
14. “Optimal Quality Oversight in Kidney Transplantation and Its Impact on Transplant Centers’ Waitlist Management” · Gharibi Z*, Do H T, Hahsler M, Ayvaci M U S · **Health Care Management Science, Revising for 2nd Round**

Work In Progress

15. “When Systemic Biases Taint Algorithms: A Path to More Equitable Access in Healthcare” · With Aksoy O, Cezar A, Raghunathan S. (**Working Paper**)
 - *Best Paper Award, WITS–Workshop on Information Systems and Technology 2023*
16. “Repairing the Digital Divide Can Increase the Service Divide, The Effect of Patient Portals on Kidney Allocation” · With Kim Y*, Sun S., Raghunathan S., Tanriover B. · (**Working Paper**)

MEDICAL AND INFORMATICS JOURNALS (BY SUBJECT)

Health Economics

17. “Human-AI Collaborative Decision Making for Screening Mammography” · Ahsen ME, Ayvaci MUS, Mookerjee R, Stolovitzky G · Under Review at **Lancet Digital Health**
18. “Transplant Physician and Surgeon Compensation: How to Account for Non-billable and Value-Based Work” Giacoma T, Ayvaci MUS, Gaston R., Tanriover B, **American Journal of Transplantation**² 20: p. 641–652, 2020.
19. “Cost-effectiveness Analysis of Immunosuppression Therapy in Primary Deceased Donor Renal Transplantation” · Gharibi Z*, Ayvaci MUS, Hahsler M, Giacoma T., Gaston R., Tanriover B · **Transplantation**³, 101 (6), p. 1234–1241, 2017.

²Impact factor: 7.163, #5 among 203 in Surgery, #2 among 25 in Transplantation

³Impact factor: 3.960, #16 among 203 in Surgery

20. “Cost-effectiveness of adjuvant FOLFOX and LV5FU2 chemotherapy for patients with stage II colon cancer” · **Ayvaci MUS**, Shi J, Alagoz O, Lubner S · **Medical Decision Making**⁴, 33 (4), p. 521–532, 2013.

- *Was included in Tufts Medical Center cost-effectiveness analysis registry, therefore has a direct impact - www.cearegistry.org*

Analytics/Machine Learning in Healthcare

21. “Clinically Guided Adaptive Machine Learning Update Strategies for Predicting Severe COVID-19 Outcomes” **Ayvaci MUS**, Jacob V, Ryu Y, Gundreddy S, Tanriover B. Under Review at *Plos One*
22. “Predicting Post-Heart Transplant ESRD Risk in Adults: A Patient-Level Machine Learning Decision Tool ” Mete M, †**Ayvaci MUS**, ..., Tanriover B. *Kidney International Reports*, 7 (6), p. 1410–1415, 2022.
23. “Estimating Waiting Time for Deceased Donor Renal Transplantation in the Era of New Kidney Allocation System” · Torlak F*, **Ayvaci MUS**, Ahsen ME, Arce C, Miguel Vasquez, Tanriover B. · **Transplantation Proceedings**.
- *Was highlighted as the cover story by “Kidney News,” the monthly magazine of American Society of Nephrology (the leading professional society in Nephrology).*
24. “Predicting Invasive Breast Cancer versus DCIS in Different Age Groups” · **Ayvaci MUS**, Alagoz O, Chhatwal J, del Rio AM, Sickles E, Nassif H, Kerlikowske K, Burnside ES · **BMC Cancer**⁵, 14:584, 2014.
25. “A Comprehensive Methodology for Determining the Most Informative Mammographic Features” · Wu Y, Alagoz O, **Ayvaci MUS**, del Rio MJ, Vanness DJ, Woods R, Burnside ES · **Journal of Digital Imaging**, 26 (5), p. 941-947, 2013.
26. “Computer Aided Diagnostic Models in Breast Cancer Screening” · Ayer T, Ayvaci MUS, Liu ZX, Alagoz O, Burnside ES · **Imaging in Medicine**, 2(3) p. 313-23, 2010. (*Invited paper*)
27. “Uncovering Age-Specific Invasive and DCIS Breast Cancer Rules Using Inductive Logic Programming” · Nassif H, Page D, **Ayvaci MUS**, Shavlik J, and Burnside E S · 1st ACM International Health Informatics Symposium (**IHI’10**), Arlington, VA, pp. 76-82, 2010. (*Refereed conference paper*)
28. “Information Extraction for Clinical Data Mining: A Mammography Case Study” · Nassif H, Woods R, Burnside E S, **Ayvaci MUS**, Shavlik J, and Page D · 9th IEEE International Conference on Data Mining Workshops (**ICDMW’09**), Miami, pp. 37-42, 2009. (*Refereed conference paper*).

Comparative Effectiveness and Other Clinical

29. “Effectiveness of Casirivimab-Imdevimab Monoclonal Antibody Treatment Among High-Risk Patients With Severe Acute Respiratory Syndrome Coronavirus 2 B.1.617.2 (Delta Variant) Infection” · Al-Obaidi, MM,...,**Ayvaci MUS**,..., Tanriover B · **Open Forum Infectious Diseases**, 9 (7), 2022
30. “Impact of Induction Immunosuppression on Patient Survival in Heart Transplant Recipients Treated with Tacrolimus and Mycophenolic Acid in the Current Allocation Era” ’ · Amin AA,..., **Ayvaci MUS**,..., Tanriover B · **Clinical Transplantation**, 33:e13651, 2019.
31. “Induction Regimen and Survival in Simultaneous Heart-Kidney Transplant Recipients” · Ariyamuthu VK, ..., **Ayvaci MUS**, ..., Tanriover B · **The Journal of Heart and Lung Transplantation**⁶, 37 (5), p. 587-595, 2018

- *An editorial was written on the significance of the contribution of this paper.*

⁴Impact Factor: 2.890, #4 among 23 in medical informatics, #12 among 83 in Health Care Sciences & Services

⁵Impact Factor: 3.319

⁶Impact factor: 7.955, #1 among 25 in Transplantation, #3 among 203 in Surgery

32. “Simultaneous Liver-Kidney Transplantation in Liver Transplant Candidates With Renal Dysfunction: Importance of Creatinine Levels, Dialysis, and Organ Quality in Survival” · Tanriover B,..., **Ayvaci MUS**, ..., Vazquez M, Marrero J · **Kidney International Reports**, 1 (4), p. 221-229, 2016
33. “Acute Rejection Rates and Graft Outcomes According to Induction Regimen among Recipients of Kidneys from Deceased Donors Treated with Tacrolimus and Mycophenolate” · Tanriover B,..., **Ayvaci MUS**, ..., Vazquez M · **CJASN**⁷, (2016)
34. “Induction therapies in live donor kidney transplantation on tacrolimus and mycophenolate with or without steroid maintenance” · Tanriover B, ..., **Ayvaci MUS**, ..., Vazquez M · **CJASN**⁷ (2015).
- *An editorial was written on the significance of the contribution of this paper.*

OPERATIONS RESEARCH METHODS

33. “Optimally Solving Markov Decision Processes with Total Expected Discounted Reward Function: Linear Programming Revisited” · Alagoz O, Ayvaci MUS, Linderoth J T · **Computers & Industrial Engineering**, 2015 doi: <http://dx.doi.org/10.1016/j.cie.2015.05.031>.
34. “Uniformization in Markov Decision Processes” · Alagoz O, Ayvaci MUS · **Encyclopedia for Operations Research and Management Science** edited by James J. Cochran, John Wiley & Sons, Inc. · 2011. (*Refereed book chapter*)

SERVICE HIGHLIGHTS

Editorial Roles

Associate Editor, Operations Research (2024-)
 Associate Editor, Service Science (2024-)
 Department Editor, Healthcare Management Science (2023-)
 Associate Editor, Healthcare Management Science (2020-2023)
 Associate Editor, INFORMS Journal on Data Science (2020-)
 Guest Associate Editor, Management Science (2021)
 Associate Editor, ICIS (2022)

Student Advisement *First Placement*

Ozgur Aksoy (PhD Ongoing, Co-advisor),
 Zahra Mobini Dehkordi (PhD 2022, Co-advisor), *Georgia Tech, School of Management*
 Jan Vlachy (PhD 2021 at ISYE Georgia Tech, Co-advisor), *Google Inc.*
 YeongIn Kim (PhD in IS at UTD 2018, Co-advisor), *Virginia Commonwealth Univ., School of Business.*
 Zahra Gharibi (PhD in EM&IS at SMU 2018, Co-advisor), *SUNY Plattsburgh, School of Business*
 Mehmet Eren Ahsen (PhD in 2015 at Bioengineering, Non-Dissertation Advising 2013-2015), *University of Illinois UC, Gies School of Business*

INVITED TALKS

- Carlson School of Management, University of Minnesota, MN (2024)
- Eller College of Management, University of Arizona, AR (2023)
- ORIE, University of Texas at Austin, TX (2022)
- DFW Healthcare Student Summit, ACHE North Texas Chapter, TX (2021)
- Brandeis International Business School, Brandeis University, MA (2021)
- Pittsburgh Social Sciences Seminar, Katz School of Business, University of Pittsburgh, PA (2020)
- ISOM Research Workshop, Warrington College of Business, University of Florida, FL (2020)
- Industrial Engineering, University of Houston, TX (2020)
- School of Business, University of Wisconsin Madison, WI (2019).
- Simon Business School, University of Rochester, NY (2019).

⁷Impact factor: 5.250, #6 among 74 in Urology & Nephrology

- Showcase Presentation, College of Healthcare OM of POMS, SYNAPSE Mini-Conference (2019)
- Carey Business School, Johns Hopkins University, MD (2018).
- McCombs School of Business, University of Texas at Austin, TX (2018).
- Mendoza College of Business, University of Notre Dame, IN (2016).
- Agency for Healthcare Research and Quality, Rockville, MD (2016).
- Booth School of Business, University of Chicago, IL (2015).
- Smeal College of Business, Pennsylvania State University, PA (2015).
- “Patient-Centric Healthcare Management in the Age of Analytics” Conference, Kelley School of Business, Indiana University, IN (2015).
- Industrial and Systems Engineering, Georgia Institute of Technology, GA (2014).
- Clinical Sciences Department, UT Southwestern Medical Center, TX (2013).
- INFORMS Doing Good with Good OR Student Competition (2012).
- INFORMS Decision Analysis Society Best Student Paper Winner Presentation, DAS Meeting (2012).
- ISOM at Jindal School of Management, University of Texas at Dallas, TX (2012).
- Industrial Engineering, Arizona State University, AR (2012).
- Public Health & Health Policy at Weill Cornell Medical College, Cornell University, NY (2012).

TEACHING

Classroom Teaching

University of Texas at Austin, McCombs School of Business

Course Instructor

MIS 301: Introduction to Information Technology Management · UG level · (Fall 2017)

MIS 325: Database Management · UG level · (Spring 2017)

University of Texas at Dallas, Jindal School of Management

Course Instructor

HMG 6334: Healthcare Analytics · GR level · (2013-2022)

HMG 6323, MIS6317: Healthcare Informatics · GR level · (2012-2022)

HMG 4323, MIS 4320: Intro to Healthcare Information Systems · UG level · (Fall 2012-2021)

Other Notable Advisement/Service

Anwasha Bhattacharjee (Committee, 2016), *IS at UTD*.

Sezgin Ayabakan (Committee, 2014), *IS at UTD*.

OTHER SERVICE

Conferences

- CIST Program Committee (2015-2023),
- M&SOM Healthcare SIG, Co-Chair (2018), Judge (2019,2021,2022, 2023),
- INFORMS Healthcare Conf, Cluster Chair, “Information Technology Management” (2023); Cluster Chair, “HAS Sponsored Sessions” (2017); Cluster Chair, “Health IT and Management” (2015)
- M&SOM Service SIG, Judge (2020-2024),
- WISE Workshop Discussant (2015)

Committees

- INFORMS MS&OM Society Student Paper Competition, Judge (2013)
- POMS College of Healthcare Ops Best Healthcare Paper Competition, Judge (2017, 2022, 2023, 2024)
- INFORMS Decision Analysis Society Student Paper Competition, Co-Chair (2021-2022), Judge (2013)
- INFORMS Health Applications Society Student Paper Competition, Judge (2023)
- INFORMS DGWGOR Paper Competition, Co-Chair and Committee Member (2017-2019),
- INFORMS Pierskalla Student Paper Competition, Judge (2014, 2019, 2023),
- INFORMS Behavioral Operations Working Paper Competition, Judge (2022),
- INFORMS Decision Analysis Society, Co-Chair of Membership Committee (2017-2018), **Ad Hoc Referee** for Management Science, ISR, MISQ, ICIS, CIST, POMS, M&SOM, Operations Research, Health Care Management Science, TMIS, Interfaces, Omega, Medical Decision Making, Decision Sciences, Breast Cancer Research and Treatment, Transplantation, JMIR.