

DEMET BATUR

Associate Professor
Supply Chain Management and Analytics
College of Business
University of Nebraska-Lincoln

HLH 511J, 730 N. 14th St., P.O. Box 880491, Lincoln, NE 68588-0491
Phone: (402) 472-0935, Email: dbatur@unl.edu
Website: <https://business.unl.edu/people/dbatur>

1 Educational Background

- 2006 Ph.D., Industrial and Systems Engineering, Georgia Institute of Technology
- 2004 M.S., Industrial and Systems Engineering, Georgia Institute of Technology
- 2001 B.S., Industrial Engineering, Marmara University, Istanbul, Turkey

2 Employment History

- 8/2019–Present Associate Professor, Supply Chain Management and Analytics, College of Business, University of Nebraska-Lincoln, Lincoln, NE
- 8/2011–8/2019 Assistant Professor, Supply Chain Management and Analytics, College of Business, University of Nebraska-Lincoln, Lincoln, NE
- 8/2009–8/2011 Lecturer, Industrial and Management Systems Engineering, University of Nebraska-Lincoln, Lincoln, NE
- 1/2008–8/2009 Postdoctoral Research Associate, Industrial and Management Systems Engineering, University of Nebraska-Lincoln, Lincoln, NE
- 6/2006–1/2008 Associate Consultant, TransSolutions, Fort Worth, TX
- 9/2002–6/2006 Graduate Assistant, Industrial and Systems Engineering, Georgia Institute of Technology, Atlanta, GA

3 Publications

3.1 Journal Publications

- J1. **D. Batur** and F. Choobineh, “Selecting the best alternative based on its quantile,” **INFORMS**

Journal on Computing, 33(2), 657–671, 2021.

- J2. Z. Zhao¹, M.C. Vuran, **D. Batur**, and E. Ekici, “Shades of white: Impacts of population dynamics and TV viewership on available TV spectrum,” **IEEE Transactions on Vehicular Technology**, (68)3, 2427–2442, 2019.
- J3. **D. Batur**, J. Ryan, Z. Zhao¹, and M.C. Vuran, “Dynamic pricing of wireless internet based on usage and stochastically changing capacity,” **Manufacturing & Service Operations Management**, 21(4), 713–948, 2019.
- J4. **D. Batur**, L. Wang², and F. Choobineh, “Methods for system selection based on sequential mean-variance analysis,” **INFORMS Journal on Computing**, 30(4), 625–786, 2018.
- J5. **D. Batur**, J.M. Bekki, and X. Chen, “Quantile regression metamodeling: Toward improved responsiveness in the high-tech electronics manufacturing industry,” **European Journal of Operational Research**, 264(1), 212–224, 2018.
- J6. **D. Batur** and F. Choobineh, “Stochastic dominance based comparison for system selection,” **European Journal of Operational Research**, 220(3), 661–672, 2012.
- J7. **D. Batur** and F. Choobineh, “A quantile-based approach to system selection,” **European Journal of Operational Research**, 202(3), 764–772, 2010.
- J8. **D. Batur** and S.-H. Kim, “Finding feasible systems in the presence of constraints on multiple performance measures,” **ACM Transactions on Modeling and Computer Simulation**, 20(3), 13, 2010.
- J9. **D. Batur**, D. Goldsman, and S.-H. Kim, “An improved standardized time series Durbin–Watson variance estimator for steady-state simulation,” **Operations Research Letters**, 37(4), 285–289, 2009.
- J10. **D. Batur** and S.-H. Kim, “Fully sequential selection procedures with parabolic boundary,” **IIE Transactions**, 38(9), 749–764, 2006.

3.2 Peer-Reviewed Conference Publications

- C1. Y. Bai¹, M.C. Vuran, **D. Batur**, and S. Goddard, “Stoop: Stochastically-dominant access point selection in enterprise WLANs,” in *Proc. of the 2017 IEEE International Conference on Smart Computing (SMARTCOMP)*, 1–8, Hong Kong, China.
- C2. Z. Zhao¹, M.C. Vuran, **D. Batur**, and E. Ekici, “Ratings for spectrum: Impacts of TV viewership on TV whitespace,” in *Proc. of the 2014 IEEE Global Communications Conference (GLOBECOM)*, 941–947, Austin, TX.
- C3. J.M. Bekki, X. Chen, and **D. Batur**, “Steady-state quantile parameter estimation: An empirical comparison of stochastic kriging and quantile regression,” in *Proc. of the 2014 Winter Simulation Conference (WSC)*, 3880–3891, Savannah, GA.

¹ Ph.D. student.

² M.S. student.

- C4. **D. Batur** and F. Choobineh, “Mean-variance based ranking and selection,” in *Proc. of the 2010 Winter Simulation Conference (WSC)*, 1160–1166, Baltimore, MD.
- C5. **D. Batur** and F. Choobineh, “Do mean-based ranking and selection procedures consider systems’ risk?,” in *Proc. of the 2009 Winter Simulation Conference (WSC)*, 423–433, Austin, TX.
- C6. **D. Batur** and S.-H. Kim, “Procedures for feasibility detection in the presence of multiple constraints,” in *Proc. of the 2005 Winter Simulation Conference (WSC)*, 692–698, Orlando, FL.
- C7. G. Malone, S.-H. Kim, D. Goldsman, and **D. Batur**, “Performance of variance updating ranking and selection procedures,” in *Proc. of the 2005 Winter Simulation Conference (WSC)*, 825–832, Orlando, FL.

4 Awards and Recognition

- Faculty Fellow, Nebraska Governance and Technology Center, 2020–2021.

5 Research Grants

- G1. *Collaborative Research: SWIFT: LARGE: DYNAmWIC: Dynamic mmWave Spectrum Sharing Techniques for Public Safety*
Sponsor: National Science Foundation (ECCS-2030272)
PIs: M.C. Vuran (UNL Lead PI), E. Ekici (OSU PI)
UNL Co-PIs: **D. Batur**, J. Ryan
Project period: Jan. 2021–Dec. 2023
Budget: \$920,000 (UNL portion \$500,000)
Outcome: Journal paper J11 (working paper)
- G2. *SpecEES: CoSeC-RAN: Cognitive Secure Cloud RAN for Efficient Spectrum Sharing*
Sponsor: National Science Foundation (CNS-1731833)
PIs: M.C. Vuran (UNL Lead PI), E. Ekici (OSU PI)
UNL Co-PIs: Q. Yan, **D. Batur**, J. Ryan
Project period: Oct. 2017–Sept. 2020
Budget: \$600,000 (UNL portion \$435,399)
Outcome: Journal paper J12 (working paper)
- G3. *Collaborative Research: Cog-TV: Business and Technical Analysis of Cognitive Radio TV Sets for Enhanced Spectrum Access*
Sponsor: National Science Foundation (CNS-1247941)
PIs: M.C. Vuran (UNL Lead PI), E. Ekici (OSU PI)
UNL Co-PI: **D. Batur**
Project period: Jan. 2013–Dec. 2016
Budget: \$462,518 (UNL portion \$283,879)
Outcome: Journal papers J2 and J3

- G4. *Optimization-via-simulation with Stochastic Dominance*
Sponsor: Constance Miriam and Ethel Corrine Syford Memorial Fund, Research Council,
 University of Nebraska-Lincoln
PI: **D. Batur**
Co-PI: F. Choobineh
Project period: Jan. 2011–Dec. 2011
Budget: \$2,500
Outcome: J4 is an outcome of this project
- G5. *Optimizing Transportation for a Nebraska Ethanol Plant*
Sponsor: Aurora Cooperative, Nebraska
PI: E. Jones
Co-PI: **D. Batur**
Project period: Jul. 2010–Jul. 2011
Budget: \$5,000
Outcome: M.S. thesis of Sarah Asio
- G6. *Cost-Effective Optimal Deployment Techniques for Wireless Underground Sensor Networks*
Sponsor: Maude Hammond Fling Faculty Interdisciplinary Research Fellowship, Research
 Council, University of Nebraska-Lincoln
PI: M.C. Vuran
Co-PIs: **D. Batur**, F. Choobineh
Project period: Jan. 2010–Dec. 2010
Budget: \$19,561

6 Conference Presentations

6.1 Competitively Selected Presentations

- P1. **D. Batur**, J. Ryan, F. Guo, and M.C. Vuran, “Dynamic spectrum capacity sharing,” in *MSOM Conference*, Singapore, 2019.
- P2. **D. Batur**, J. Ryan, Z. Zhao, and M.C. Vuran, “Dynamic pricing of Internet under changing capacity,” in *MSOM Conference*, Dallas, TX, 2018.
- P3. **D. Batur**, J. Ryan, Z. Zhao, and M.C. Vuran, “Dynamic pricing of wireless internet based on usage and stochastically changing capacity,” in *MSOM Conference*, Chapel Hill, NC, 2017.
- P4. **D. Batur** and F. Choobineh, “Mean-variance based ranking and selection,” in *Winter Simulation Conference*, Baltimore, MD, 2010.
- P5. **D. Batur** and F. Choobineh, “Do mean-based ranking and selection procedures consider systems’ risk?,” in *Winter Simulation Conference*, Austin, TX, 2009.

6.2 Invited Presentations

- P6. **D. Batur**, J. Ryan, Z. Zhao, and M.C. Vuran, “Dynamic pricing of Internet under changing capacity,” in *POMS Annual Conference*, Houston, TX, 2018.

- P7. **D. Batur** and F. Choobineh, “Quantile-based selection,” in *INFORMS Annual Meeting*, Houston, TX, 2017.
- P8. **D. Batur** and F. Choobineh, “Quantile-based comparison for system selection,” in *INFORMS Annual Meeting*, Philadelphia, PA, 2015.
- P9. **D. Batur** and J.M. Bekki, “Estimating cycle time quantiles using quantile-regression based metamodels,” in *INFORMS Annual Meeting*, Minneapolis, MN, 2013.
- P10. **D. Batur** and F. Choobineh, “Is mean-based selection good enough in ranking and selection procedures?,” in *INFORMS Annual Meeting*, San Diego, CA, 2009.
- P11. **D. Batur** and S.-H. Kim, “Procedures for feasibility detection in the presence of multiple constraints,” in *Winter Simulation Conference*, Orlando, FL, 2005.
- P12. G. Malone, S.-H. Kim, D. Goldsman, and **D. Batur**, “Performance of variance updating ranking and selection procedures,” in *Winter Simulation Conference*, Orlando, FL, 2005.

6.3 Contributed Presentations

- P13. **D. Batur**, J. Ryan, and M.C. Vuran, “Dynamic resource sharing in private 5G networks with slicing,” in *INFORMS Annual Meeting*, 2023.
- P14. **D. Batur**, J. Ryan, and M.C. Vuran, “Dynamic resource sharing in private 5G networks with slicing,” in *IFORS Conference*, 2023.
- P15. **D. Batur**, J. Ryan, F. Guo, and M.C. Vuran, “Dynamic spectrum capacity sharing,” in *POMS Annual Conference*, 2021.
- P16. **D. Batur**, J. Ryan, Z. Zhao, and M.C. Vuran, “Pricing of internet dynamically under changing capacity and customer usage,” in *POMS Annual Conference*, Seattle, WA, 2017.
- P17. **D. Batur**, J. Ryan, Z. Zhao, and M.C. Vuran, “Dynamic pricing for wireless Internet based on changing capacity and usage,” in *POMS Annual Conference*, Orlando, FL, 2016.
- P18. **D. Batur**, J. Ryan, Z. Zhao, and M.C. Vuran, “Pricing of internet dynamically under changing capacity,” in *INFORMS Annual Meeting*, Nashville, TN, 2016.
- P19. **D. Batur** and J.M. Bekki, “Regression-based metamodels in estimation of cycle time quantiles in semiconductor manufacturing,” in *INFORMS Annual Meeting*, San Francisco, CA, 2014.
- P20. **D. Batur** and J.M. Bekki, “Regression-based metamodeling in estimation of cycle time quantiles in semiconductor manufacturing industry,” in *POMS Annual Conference*, Atlanta, GA, 2014.
- P21. **D. Batur**, F. Choobineh, and D. Olson, “Selection of the best portfolio based on value-at-risk,” in *DSI Annual Meeting*, San Francisco, CA, 2012.
- P22. **D. Batur** and F. Choobineh, “Stochastic dominance based system selection,” in *INFORMS Annual Meeting*, Charlotte, NC, 2011.
- P23. **D. Batur** and F. Choobineh, “Stochastic dominance based ranking and selection in simulation,” in *INFORMS Annual Meeting*, Austin, TX, 2010.

- P24. **D. Batur** and F. Choobineh, “A quantile-based approach to system selection,” in *INFORMS Annual Meeting*, Washington, DC, 2008.
- P25. G. Malone, S.-H. Kim, D. Goldsman, and **D. Batur**, “Fully sequential procedures for Bernoulli selection,” in *IIE Annual Meeting*, Atlanta, GA, 2005.
- P26. **D. Batur** and S.-H. Kim, “Finding feasible systems when the number of systems or constraints is large,” in *INFORMS Annual Meeting*, San Francisco, CA, 2005.
- P27. **D. Batur** and S.-H. Kim, “Fully sequential selection procedures with parabolic boundary,” in *INFORMS Annual Meeting*, Denver, CO, 2004.

6.4 Poster Presentations

- P28. **D. Batur** and F. Choobineh, “Testing stochastic order for reliability analysis of complex systems,” in *Winter Simulation Conference*, Berlin, Germany, 2012.

7 Teaching and Advising

7.1 Courses Taught

1. Supply Chain Management and Analytics, University of Nebraska-Lincoln

- SCMA 335 Decision Making Models
 - Fall 2023, Fall-Spring 2022, Fall-Spring 2021, Fall-Spring 2020, Fall-Spring 2019, Fall-Spring 2018, Fall-Spring 2017, Fall-Spring 2016, Fall-Spring 2015, Fall 2014, Fall-Spring 2013, Fall-Spring 2012, Fall 2011
- SCMA 437 Risk and Decision Analysis
 - Fall 2023, Fall 2022, Fall 2021, Fall 2020, Fall 2019, Fall 2018, Fall 2017, Fall 2016, Fall 2015, Fall 2014, Fall 2013, Fall 2012, Fall 2011
- BSAD 395 Professional Internship
 - Summer 2022, Fall 2022
- SCMA 331 Operations and Supply Chain Management
 - Spring 2013, Spring 2012

2. Industrial and Management Systems Engineering, University of Nebraska-Lincoln

- IMSE 206 Engineering Economy
 - Spring 2011, Fall 2010
- IMSE 250 Introduction to Industrial Systems
 - Spring 2010
- IMSE 321 Engineering Statistics and Data Analysis
 - Spring 2011, Fall 2010, Fall 2009
- IMSE 440/840 Discrete-Event System Simulation
 - Fall 2010, Fall 2009

- IMSE 806 Decision and Risk Analysis
 - Fall 2010, Fall 2009
- IMSE 984 Advanced Simulation Modeling
 - Spring 2010

3. Industrial and Systems Engineering, Georgia Institute of Technology

- ISYE 2027 Probability with Applications
 - Spring 2006

7.2 Independent Studies

1. “Approximate dynamic programming coding in Matlab,” Undergraduate research, Spring 2021, (Undergraduate student: Lixin Cao).
2. “Value iteration algorithm coding in Matlab,” Undergraduate research, Summer 2020, (Undergraduate student: Sophie Hellebusch).
3. “Production scheduling at a cereal production company,” SCMA 399, Spring 2013 (Undergraduate students: Eric Kellogg, Adam Schroeder, Zack Bochery)
4. “Building a quantile regression model for cycle time estimation in semiconductor manufacturing,” SCMA 399, Fall 2012 (Undergraduate student: Sarah A. Valente)
5. “Working with a Senior Design Course team from Computer Science and Engineering at University of Nebraska-Lincoln to help develop a geographical asset editing tool for Nebraska Global,” SCMA 399, Fall 2011 and Spring 2012 (Undergraduate student: Cameron Kochenower)

7.3 Mentoring and Advising

1. Zhongyuan Zhao, Ph.D. in Computer Science and Engineering, “Improving spectrum efficiency by exploiting user and channel behaviors for next generation wireless networks,” Apr. 2019, **committee member**.
2. Yu Bai, Ph.D. in Computer Science and Engineering, “Stochastically dominant access point selection in wireless local area networks,” Nov. 2018, **committee member**.
3. Thammasak Thianniwet, Ph.D. in Computer Science and Engineering, “A framework for reverse engineering feature models,” Aug. 2016, **committee member**.
4. Ashkan Hassani, M.S. in Construction Management, “Application of Cobb-Douglas production function in construction time-cost analysis,” May 2013, **committee member**.
5. Endong Wang, Ph.D. in Construction Management, “Addressing uncertainties in the residential energy performance benchmarking and projecting through data mining approach,” Dec. 2012, **committee member**.
6. Anali Huggins, M.S. in Industrial Engineering, “A model for optimizing the allocation of ethanol production in the U.S.,” Dec. 2012, **supervisor**.

7. Sarah Asio, M.S. in Industrial Engineering, “A study on facility planning using discrete-event simulation: Case study of a grain delivery terminal,” Aug. 2011, **supervisor**.
8. Shaozhuo Dong, Ph.D. in Construction Management, “A symbolic modular representation approach using single element for simulating construction operations,” Aug. 2012, **committee member**.
9. Pourya Fasounaki, M.S. in Industrial Engineering, “A volume measurement model for granular material,” Aug. 2012, **committee member**.
10. Mahsa Khoshnoud, M.S. in Industrial Engineering, “Quantity and capacity expansion decisions for ethanol in Nebraska and a medium-sized plant,” Aug. 2012, **committee member**.
11. Lina Wang, M.S. in Industrial Engineering, “System selection based on controlled risk,” May 2012, **co-advisor**.

8 Service

8.1 University and Departmental Service

- Director, Undergraduate Minor in Business Analytics, SCMA, UNL, 2021–Present.
- Member, PhD Committee, SCMA, UNL, 2020–Present.
- Member, General Committee, CoB, UNL, 2020–Present.
- Member, Faculty Search Committee, Marketing Department, UNL, 2022.
- Peer teaching evaluation for instruction in SCMA 350, UNL, Fall 2022.
- Guest speaker, Women in STEM day event, CoB, UNL, Fall 2021.
- Peer teaching evaluation for instruction in SCMA 450, UNL, Fall 2021.
- Faculty advisor, Conagra capstone project, SCMA 474 Strategic Supply Chain Management, UNL, Fall 2021.
- Member, Strategic Planning Committee, CoB, UNL, Spring 2021.
- Member, Department P&T Committee, SCMA, UNL, Spring 2021.
- Peer teaching evaluation for instruction in SCMA 855, UNL, Spring 2021.
- Peer teaching evaluation for instruction in SCMA 331, UNL, Spring 2020.
- Head, Faculty Search Committee, SCMA, UNL, 2019–2020.
- Peer Teaching Evaluation for instruction in SCMA 331, UNL, Fall 2019.
- Member, Faculty Search Committee, SCMA, UNL, 2018–2019.
- At-large tenure track member, College of Business General Committee, UNL, 2015–2018.

- Member, Faculty Search Committee, SCMA, UNL, 2017–2018.
- Member, Faculty Search Committee, SCMA, UNL, 2016–2017.
- Member, Faculty Search Committee, Department of Management, UNL, 2015–2016.
- Member, Faculty Search Committee, Department of Management, UNL, 2014–2015.
- Member, Faculty Search Committee, Department of Management, UNL, 2013–2014.
- Member, Faculty Search Committee, Department of Management, UNL, 2012–2013.

8.2 Professional Society Service

- Chair, Recruiting and Retention of Members Committee, INFORMS Simulation Society, 2016–2018.
- Member/Chair, Committee for Underrepresented Minorities and Women, INFORMS Simulation Society, 2010–2012.

8.3 Editorial Activities

- Associate Editor, Supply Chain and Logistics, IISE Transactions, 2021–Present.
- Track coordinator, Analysis Methodology, 2021 Winter Simulation Conference.
- Track coordinator, Analysis Methodology, 2020 Winter Simulation Conference.
- Track coordinator, Analysis Methodology, 2019 Winter Simulation Conference.

8.4 Public Service

- Board member, City of Lincoln Telecommunications/Cable Television Advisory Board, 2021–Present.

8.5 Conference Session Organization

- Session chair/organizer, 2018 POMS Annual Conference, Houston, TX.
- Session chair/organizer, 2017 INFORMS Annual Meeting, Houston, TX.
- Session chair/organizer, 2016 INFORMS Annual Meeting, Nashville, TN.
- Session chair/organizer, 2015 INFORMS Annual Meeting, Philadelphia, PA.
- Session chair/organizer, 2013 INFORMS Annual Meeting, Minneapolis, MN.
- Session chair, 2012 Winter Simulation Conference, Berlin, Germany.
- Session chair, 2010 Winter Simulation Conference, Baltimore, MD.

8.6 Membership in Professional Organizations

- INFORMS
- INFORMS MSOM Society
- INFORMS Simulation Society
- INFORMS Women in OR/MS
- Institute of Industrial & Systems Engineers (IISE)