

TEVFIK AKTEKIN
Associate Professor of Decision Sciences
Department of Decision Sciences
University of New Hampshire
tevfik.aktekin@unh.edu

APPOINTMENTS

UNIVERSITY OF NEW HAMPSHIRE Associate Professor of Decision Sciences Director of Master of Science in Business Analytics	September 2016 – Present August 2020 – Present
UNIVERSITY OF NEW HAMPSHIRE Assistant Professor of Decision Sciences	September 2010 – August 2016
THE GEORGE WASHINGTON UNIVERSITY Visiting Assistant Research Professor, Institute for Integrating Statistics in Decision Sciences	July 2009 – July 2010

EDUCATION

The George Washington University, Washington, D.C. PhD in Decision Sciences with a Minor in Statistics/OR Dissertation Topic: Three Essays in Bayesian Call Center Modeling	September 2004 – May 2009
The George Washington University, Washington, D.C. MBA, Management Decision Making	September 2002 - May 2004
Yildiz Technical University, Istanbul, Turkey BSc, Mechanical Engineering	September 1998 - June 2002

AREAS OF EXPERTISE: Bayesian inference, state space time series analysis, Bayesian queueing, Markov chain Monte Carlo methods

RESEARCH

Statistics and Operations Research:

1. Aktekin, T. and Soyer, R. (2011) "Call Center Arrival Modeling: A Bayesian State Space Approach", **Naval Research Logistics**, Vol 58(1), pp. 28-42.
2. Aktekin, T. and Soyer, R. (2012) "Bayesian Analysis of Queues with Impatient Customers: Applications to Call Centers", **Naval Research Logistics**, Vol 59(6), pp. 441-456.
3. Musal, M. and Aktekin, T. (2013) "Bayesian Spatial Modeling of HIV Mortality via Zero-inflated Poisson Models", **Statistics in Medicine**, Vol 32 (2), pp. 267-281.
4. Aktekin, T. and Caglar, T. (2013) "Imperfect Debugging in Software Reliability: A Bayesian Perspective", **European Journal of Operational Research**, Vol 227 (1), pp. 112-121.
5. Aktekin, T., Soyer, R. and Xu F. (2013) "Assessment of Mortgage Default Risk via Bayesian State Space Models", **Annals of Applied Statistics**, Vol 7 (3), pp. 1450-1473.
6. Aktekin, T. (2014) "Call Center Service Process Analysis: Bayesian Parametric and Semi-parametric Mixture Modeling", **European Journal of Operational Research**, Vol 234 (3), pp. 709-719.
7. Aktekin, T. and Soyer, R. (2014) "Bayesian Analysis of Abandonment in Call Center Operations", **Applied Stochastic Models**, Vol 30 (2), pp. 141-156.
8. Aktekin, T. and Musal, M. (2015) "Analysis of Income Inequality Measures on the HIV Mortality: a Spatio-Temporal Bayesian Perspective", **Journal of the Royal Statistical Society: Series A**, Vol 178 (2), pp. 383-403.
9. Aktekin, T. and Ekin, T. (2016), "Stochastic Call Center Staffing with Uncertain Arrival, Service and Abandonment Rates: A Bayesian Perspective", **Naval Research Logistics**, Vol 63 (6), pp. 460-478.
10. Aktekin, T., Polson, N., and Soyer, R. (2018) "Sequential Bayesian Analysis of Multivariate Count Data", **Bayesian Analysis**, Vol 13 (2), pp. 385-409.
11. Aktekin, T., Polson, N., and Soyer, R. (2020) "A Family of Multivariate Non-Gaussian Time Series Models", **Journal of Time Series Analysis**, Vol 41 (5), pp. 691-721.
12. Ekin, T. and Aktekin, T. (2021), "Decision Making under Uncertain and Dependent System Rates in Service Systems", **European Journal of Operational Research**, Vol 291 (1), pp. 335-348.
13. Irie, K., Glynn, G. and Aktekin, T. (2022) "Sequential Modeling, Monitoring, and Forecasting of Streaming Web Traffic Data", **Annals of Applied Statistics**, Vol 16 (1), 300-325.

Business Applications:

14. Yalcinkaya G. and Aktekin T. (2015), "Brand Extension Effects and Core Attributes of Experience Product Franchises: A Bayesian Approach", **Journal of Product Innovation Management**, Vol 32 (5), pp. 731-746.

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15. Yalcinkaya, G., Aktekin, T., Yenyurt, S., and Umar, S. (2017), "How Often Should a Firm Modify its Products? A Bayesian Analysis of Automobile Modification Cycles", **Marketing Letters**, Vol 28 (1), pp. 85-97.
16. Aktekin, T., Dutta, D., and Sohl, J. (2018), "Entrepreneurial firms and financial attractiveness for securing debt capital: a Bayesian analysis", **Venture Capital**, Vol 20 (1), pp. 27-50.
17. Yalcinkaya, G., Aktekin, T., Yenyurt, S. (2020), "Out with the Old: A Bayesian Approach to Estimating Product Modification Rates", **Journal of Business Research**, Vol 118, pp. 141-149.

Book Chapters (peer reviewed):

18. Soyer, R., Aktekin, T., and Kim, B. (2015), Bayesian Modeling of Time Series of Counts with Business Applications, **Handbook of Discrete-Valued Time Series**.

Under Review and Working Papers:

1. Bayesian Analysis of Spatio-Temporal Disease Mapping Models: Applications to COVID-19 in California (with Muzaffer Musal), target: Journal of the Royal Statistical Society – Series A.
2. Bayesian Sequential Learning and Decision Making in Bike-Sharing Systems (with Babak Zafari, Bumsoo Kim, and Luis Novoa de Oro), target: European Journal of Operational Research.
3. Family of Poisson-Hypergeometric Beta Models and their Bayesian Analysis (with Nick Polson), working paper, target: Journal of the Royal Statistical Society: Series B.
4. Zero-Inflated Poisson State Space Models: Application to Consumer Good Demand Purchasing (with Refik Soyer), target: Journal of Time Series Analysis.

CONFERENCE PRESENTATIONS (Presenter)

- "State Space Analysis of Non-Gaussian Time Series Models", at INFORMS, Indianapolis, IN, October 2022 (upcoming).
- "Sequential Modeling, Monitoring, and Forecasting of Streaming Web Traffic Data", at ISI (Virtual), July 2021.
- "Staffing in Service Systems with Dependent and Uncertain Rates", at INFORMS-Advances in Decision Analysis, Milan, Italy, June 2019
- "Bayesian Analysis of Multivariate Dynamic Transformed Exponential Family Models", at GDRR, Washington, DC, May 2019
- "A Bayesian Family of Multivariate Non-Gaussian State Space Models", at NESS, Hartford, CT, May 2019
- "Sequential Bayesian Analysis of Multivariate Count Data", at JSM, Vancouver, Canada, August 2018
- "Bayesian analysis of a general class of dynamic multivariate non-Gaussian family of models", at ASA-Boston Chapter, November 2017
- "General Class of Multivariate Exponential Family of State Space Models", at BISP, Italy, June 2017
- "Bayesian Inference and Augmented Probability Simulation in Call Center Staffing", at INFORMS, Nashville, November 2016
- "A Generalized Exponential Family of Multivariate State Space Models and Particle Learning", at ISBA, Italy, June 2016.
- "Bayesian State Space Modeling of Multivariate Poisson Time Series using Particle Filtering" at GDRR, Istanbul, Turkey, June 2015
- "Bayesian State-Space Modeling of Poisson Processes" at IWAP, Antalya, Turkey, June 2014
- "Bayesian Imperfect Debugging in Software Reliability" at GDRR, Cork, Ireland, July 2013 (Young Bayesian Scholar Travel Award for GDDR-Ireland Conference)
- "The Drivers of Product Modification Cycles: A Bayesian Approach" at INFORMS-Marketing, Istanbul, Turkey, July 2013
- "Bayesian Parametric and Semi-parametric Modeling of Call Center Abandonment" at INFORMS, Phoenix, October 2012
- "Bayesian State Space Modeling of Poisson Time Series" at INFORMS, Charlotte, November 2011
- "Imperfect Debugging in Software Reliability: A Bayesian Approach" at JSM, Miami, August 2011
- "Bayesian Analysis of Mortgage Default Risk" at INFORMS, Austin, November 2010
- "Bayesian State Space Approach to Mortgage Default Risk" at ISBA, Alicante, Spain, May 2010
- "Bayesian Modeling of Queues in Call Centers" at INFORMS, San Diego, October 2009
- "Computational Issues in Bayesian Call Center Modeling" at INFORMS, San Diego, October 2009
- "Bayesian Inference of Abandonment Processes in Call Centers" at JSM, Washington DC, August 2009
- "Bayesian Queue Modeling in Call Centers" at BISP, Bressanone / Brixen, Italy, June 2009
- "Call Center Arrival Modeling: A Bayesian State Space Approach" at INFORMS, Washington DC, October 2008
- "Bayesian Software Reliability" at INFORMS, Seattle, November 2007
- "Imperfect Debugging in Software Reliability: A Bayesian Perspective" at NDSI, Baltimore, March 2007

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CONFERENCE PRESENTATIONS (Non-Presenter)

- “Bayesian Analysis of Spatio-Temporal Disease Mapping Models: Applications to COVID-19 in California” at INFORMS, October 2022 (upcoming).
- “Sequential Forecasting for Bursty Count Data” at EcoSta, June 2022
- “A Class of Bayesian Multivariate Time Series Models for Counts” at JSM, Chicago, August 2016
- “Poisson-Hyper Geometric Beta Models” at ISBA 2016, Sardinia, Italy, June 2016
- “Call Center Staffing Optimization with Uncertainty in Arrival, Service and Abandonment Rates” at INFORMS, San Francisco, November 2014
- “Short Life Cycle of an Experience Product's Long Life: A Bayesian Approach via Signaling Strategy” at INFORMS-Marketing Science, Istanbul, Turkey, July 2013
- “Entrepreneurial Firms and Signaling for Creditworthiness: A Bayesian Modeling Approach”, at Babson College Entrepreneurship Research Conference, June 2013

INVITED TALKS

- “A Family of Multivariate Non-Gaussian Time Series Models”, University of Tokyo, Department of Economics, October 2021.
- “Sequential Modeling, Monitoring, and Forecasting of Streaming Web Traffic Data”, The George Washington University, Department of Decision Sciences, March 2021.
- “Sequential Bayesian Analysis of Multivariate Count Data”, Texas State University, Department of QDM, April 2017.
- “Sequential Bayesian Analysis of Multivariate Count Data”, The George Washington University, Department of Decision Sciences, February 2017.
- “Sequential Bayesian Analysis of Multivariate Count Data”, University of New Hampshire, Department of Economics, January 2017.
- “Sequential Bayesian Analysis of Multivariate Count Data”, University of New Hampshire, Department of Mathematics and Statistics, December 2016.
- “Bayesian Learning and Water-Quality Research”, University of California - Santa Barbara, LTER, December 2016.
- “Bayesian State Space Modeling of Poisson Time Series”, University of New Hampshire, Paul College Scholar Series, February 2014.
- “Teaching Business Statistics: Best Wisdom and Biggest Challenges”, Boston University, New England Statistics Symposium, April 2012.
- “Bayesian State Space Modeling of Mortgage Default Risk”, University of Connecticut, Department of Statistics Colloquium, April 2011.
- “Bayesian Analysis of Queueing Systems”, University of New Hampshire, Department of Decision Science Research Series, April 2011.

SERVICE

Department Level:

- Course Coordinator for ADNM 420 – Business Statistics Fall 2010 to Spring 2013
- Committee Member for Business Analytics Option Taskforce – Fall 2013 to Present
- Committee Member for Decision Science Faculty Recruiting – Fall 2013, Fall 2015 (3 positions), Fall 2017 (2 positions)
- Committee Member for Merit/Equity Allocation – Fall 2015
- Committee Member for New MBA Specialization Proposals – Spring 2016
- Course Coordinator/Designer for New MBA Statistics Course – Fall 2017
- Chair for Decision Science Faculty Recruiting in Business Analytics – Fall 2017
- Organizer for Decision Sciences Departmental Seminar Series – AY 2017-2018
- Committee Member for Third Year Review – Spring 2018, Spring 2019 (2 cases)
- Chair for Third Year Review – Spring 2019
- Chair for MS in Business Analytics Program Task Force – Spring 2019 to Fall 2019
- Chair for Third Year Review – Spring 2020
- Chair for Decision Science Faculty Recruiting – Spring 2020
- Decision Science Summer Research Funding Committee – Spring 2020
- Committee Member for ISBA Revision Taskforce – AY 2020-2021
- Committee Member for Departmental Promotion and Tenure Committee – AY 2020-2021
- Chair for Decision Science Faculty Recruiting – Fall 2020
- Chair - MSBA Curriculum and Admissions Committee – Spring 2020 to Spring 2021
- Chair - MSBA Admissions Committee – AY 2020 to present

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- Chair and Committee Member for Third Year Review – Spring 2021 (2 cases)
- Chair for Decision Science Faculty Recruiting – Fall 2021 (2 positions)

College Level:

- Committee Member for Paul College Strategic Planning Taskforce – Spring 2014
- Committee Member for Paul College Business Analytics Taskforce – Spring 2014 to 2015
- Committee Member for Paul College IT Committee – Fall 2013 to Fall 2016
- Chair for Paul College IT Committee – Fall 2014 to Fall 2016
- Undergraduate Research Conference Judge – Spring 2014, Spring 2015
- Search Committee Member for the PAUL College IT Position – Spring 2015
- Committee Member for Paul College Promotion and Tenure Committee – AY 2017-2019
- Co-Chair – Center for Business Analytics Executive Director Search – Spring 2021
- Committee Member for Paul College Dean Search – AY21-22
- Chair - Business Analytics Faculty Advisory Board – Spring 2021 to present

University Level:

- Committee Member for UNH Writing Committee – Fall 2013 to Spring 2015
- Committee Member for UNH Master's in Analytics Curriculum Committee – Spring 2014 to Spring 2016
- Committee Member for Analytics and Data Science Faculty Recruiting – AY 2017-2018
- Organizer for UNH Interdisciplinary Data Science Seminar Series – AY 2017-2018
- Committee Member for Data Science Undergraduate Curriculum (CEPS) AY 2018-2019
- Committee Member for Graduate Analytics and Data Science Steering Committee – AY 2018-2019
- Reviewer for UNH CoRE Grants – Spring 2019 (4 cases)
- Committee Member for Creating a Data Science PhD Program – AY 2017-2020

Professional:

- Secretary for International Society of Bayesian Inference – Industrial Statistics– Fall 2017 to Spring 2019
- Treasurer for International Society of Bayesian Inference – Industrial Statistics– Fall 2012 to Spring 2014
- Reviewer for National Science Foundation, Journal of the American Statistical Association, Annals of Applied Statistics, Statistics in Medicine, Journal of Royal Statistical Society – Series A, European Journal of Operational Research, Annals of Operations Research, Naval Research Logistics, Applied Stochastic Models, Scandinavian Journal of Statistics, Brazilian Journal of Probability and Statistics, Reliability Engineering and System Safety, Expert Systems with Applications, Journal of Production Innovation Management, IIE Transactions, Handbook for Time Series Analysis
- Track Chair and Session Organizer at INFORMS – 2010, 2011, 2012
- Track Chair at ISBA (2 Sessions) – 2018
- Discussant at ISBA – 2018
- Program Committee (UNH representative) for NESS – 2019
- Track Chair and Session Organizer at NESS – 2019
- Track Chair – GDRR – 2019
- Scientific Committee Member for ISBIS/y-BIS Analytics Workshop – 2019
- Track Chair and Session Organizer at IFORS – 2020 (postponed)
- Guest Editor for Entropy on Special Issue “Bayesian Statistics and Applied Probability for Games and Decisions” – 2021-22.
- Track Chair and Session Organizer at INFORMS – 2022

OTHER WORK EXPERIENCE

THE GEORGE WASHINGTON UNIVERSITY

September 2005 – July 2010

Adjunct Faculty, Decision Sciences Department

- Taught graduate level courses such as Forecasting and Time Series Analysis, Management Science, Statistical Analysis for Managers and Operations Management

THE GEORGE WASHINGTON UNIVERSITY

September 2004 – May 2009

Teaching Assistant (PhD), Decision Sciences Department Decision Sciences Doctoral Candidate Representative

WORLDWIDE SOLUTIONS INC.

June 2007 – August 2008

Instructor

Developed and instructed the following weeklong seminars to executives of international government agencies and private organizations:

- Decision Analysis (Summer 2007)
- Management Decision Making (Fall 2007 and Summer 2008)

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STRATEGIC MANAGEMENT HEALTH CARE CONSULTING July 2007- September 2007
Research Consultant for the Institute for Integrating Statistics in Decision Sciences at GWU

- Developed fraud/anomaly detection statistical models for the Medicaid New York, Medicaid Pennsylvania and Medicare projects using SAS
- Presented findings to upper management and provided regular reports

THE GEORGE WASHINGTON UNIVERSITY September 2003 - May 2004
Teaching Assistant (MBA), Management Science Department

FUTUREPIPE SRL, Paris May 2003 - August 2003
Intern, Research Analyst

SODIMAS S.A., Turkey Corporation September 1998 – May 2002
(Agency of SODIMAS S.A. France in Turkey)
Operations Analyst, Operations and Logistics Department

AWARDS

- **University of New Hampshire, Peter T. Paul College, Excellence in Research Award, 2021.**
- **University of New Hampshire, Peter T. Paul College, MSBA Best Instructor Award, 2021.**
- **University of New Hampshire, Peter T. Paul College, Full Time MBA Best Instructor Award, 2017.**
- **University of New Hampshire, Outstanding Assistant Professor Award of Teaching, Research and Service (University level), 2016.**
- **University of New Hampshire, Peter T. Paul College, Excellence in Teaching Award for Tenure Track Faculty, 2015.**
- **University of New Hampshire, Peter T. Paul College, Full Time MBA Best Instructor Award, 2014.**
- **The George Washington University, Philip Amsterdam Graduate Teaching Assistant Award for Outstanding Teaching 2009, (No: 1 in the school of business, Top 5 university wide-honorable mention).**
- **Young Bayesian Scholar Travel Award for GDDR-Ireland Conference 2013.**
- **International Beta Gamma Sigma Honor Society Member** (worldwide highest recognition in a business program accredited by AACSB International).