

Dr. Kemal Gürsoy

CONTACT INFORMATION	Rutgers Business School Newark & New Brunswick Rutgers University 100 Rockafeller Road, Room 5146 Piscataway, NJ 08854 USA	<i>Tel:</i> +1-848-445-9242 <i>Fax:</i> +1-732-445-1133 kgursoy@business.rutgers.edu sites.rutgers.edu/kemal-gursoy
TEACHING INTERESTS	<ul style="list-style-type: none">• Statistics and Probability• Mathematical Statistics• Operations Management	RESEARCH INTERESTS <ul style="list-style-type: none">• Stochastic Optimization• Random Geometry• Topological Statistics
EDUCATION	<p>M.B.A., 2002, Rutgers University/RBS, Newark/New Brunswick, NJ, USA</p> <ul style="list-style-type: none">• Area of Study: Management Science & Information Systems• Specialization: Operations Management. <p>Ph.D., 1997, Rutgers University, NJ, USA</p> <ul style="list-style-type: none">• Dissertation: <i>Branch and bound methods for sequentially choosing among competing projects</i>• Dissertation Adviser: Professor Michael N. Katehakis• Areas of Study: Management Science & Information Systems, Statistics <p>M.S., 1987, University of Pennsylvania, Philadelphia, PA, USA</p> <ul style="list-style-type: none">• Area of Study: Systems Engineering• Specialization: Artificial Intelligence & Robotics, Decision Sciences & Information Systems <p>B.S., 1980, M.S., 1981, Middle East Technical University, Ankara, Turkey</p> <ul style="list-style-type: none">• Master's Thesis: <i>Time-varying parameter estimation with extended Kalman filters for adaptive control applications</i>• Thesis Adviser: Professor Halil Ö. Gülcür• Areas of Study: Electrical Engineering, Mathematics• Specialization: Adaptive Systems, Stochastic Control Theory, Applications of Algebraic Geometry, Differential Geometry and Lie Algebra for Nonlinear Dynamic Systems.	
TEACHING EXPERIENCE	<p>Associate Professor of Professional Practice July 2019 - present</p> <p>Assistant Professor of Professional Practice July 2014 - June 2019</p> <p>Instructor July 2013 - June 2014</p> <p>Rutgers University/RBS, Department of Management Science and Information Systems, Newark and New Brunswick campuses, New Jersey</p> <ul style="list-style-type: none">• Lectured Statistical Methods In Business. Authored many pages of course material archived at http://www.rci.rutgers.edu/~kgursoy• Attended DIMACS Seminars.• Attended MSIS Department Seminars.• Attended Applied Probability Society Seminars. <p>Visiting Professor Summer terms, 2000-2016</p> <p>Bogazici University, Department of Mathematics, Istanbul, Turkey</p> <ul style="list-style-type: none">• Authored many pages of course material archived at http://www.math.boun.edu.tr/instructors/visitors/gursoy/gursoy.htm• Lectured Probability Theory, Mathematical Statistics, and Multivariate Statistics	

Part Time Lecturer

1/2010-12/2012

Rutgers University, Department of Statistics, Piscataway, NJ

- Lectured Theory of Probability, Theory of Statistics, Statistics for Research, Multivariate Statistical Analysis, Statistical Quality Control
- Authored many pages of course material archived at <http://stat.rutgers.edu/~kgursoy>.

Associate Professor

9/2005-8/2008

Kean University, Department of Management Science, Union, NJ

- Lectured Statistical Methods In Business, Operations Management
- Authored many pages of course material archived at <http://kean.edu/~kgursoy>.

Assistant Professor

9/1996-8/2005

Long Island University, Department of Managerial Sciences, Brooklyn, NY

- Lectured Statistical Methods In Business, Operations Management, Information Systems, Business Economics, Time-Series Analysis, Corporate Finance, Mathematical Models for Finance.
- Authored many pages of course material archived at <http://liu.edu/~kgursoy>.

SOFTWARE SKILLS Computer Programming:

- **FORTRAN, C**
- **Maple, R, SAS**

Skills :

- Linear algebra, differential geometry, topology, Monte Carlo analysis, nonlinear numerical methods, statistics, probability, stochastic processes, optimization.

Desktop Editing and Productivity Software:

- Microsoft Office, OpenOffice.org, LibreOffice, Corel WordPerfect, Google Docs
- Vim, Emacs, Eclipse
- T_EX (L^AT_EX, B_IB_TE_X, P_STricks)

Operating Systems:

- Microsoft Windows family,
- Apple OS X,
- Linux, BSD, and other UNIX variants

BOOKS

- [1] Gürsoy, K., *Lecture Notes on Statistical Methods in Business, Second Edition*, Kendall/Hunt Publishing Co., Dubuque, Iowa, 2022, ISBN 979-8-7657-3092-8.
- [2] Gürsoy, K., *Lecture Notes on Statistical Methods in Business*, Kendall/Hunt Publishing Co., Dubuque, Iowa, 2021, ISBN 978-1-7924-7744-7.
- [3] Gürsoy, K., Baykal-Gürsoy, M., Gürsoy, A., *An Introduction to Probability and Statistics*, Kendall/Hunt Publishing Co., Dubuque, Iowa, 2015, ISBN 978-1-4652-7705-3.
- [4] Gürsoy, K., *Management with Information Systems*, Kendall/Hunt Publishing Co., Dubuque, Iowa, 2003, ISBN 0-7575-0344-6.

- [1] Gürsoy, K., "An Optimal Selection for Ensembles of Influential Projects," **Annals of Operations Research**, pp. 1-20, February 2020.
- [2] Gürsoy, K., "How to Measure and Predict Sustainability?" **Proceedings of the Oxford Business and Economics Conference**, pp. 1-8, July 2017.
- [3] Gürsoy, K., "Optimal Selections among Competing Projects: Multi-Armed Bandits," **Proceedings of the Cambridge Business and Economics Conference**, pp. 1-9, July 2014, ISBN 9780974211428.
- [4] Gürsoy, K. and Baykal-Gürsoy, M., "Forecasting: State-Space Models and Kalman Filter Estimation," **Wiley Encyclopedia of Operations Research and Management Sciences**, pp. 1-9, January 2011.
- [5] Baykal-Gürsoy, M. and Gürsoy, K., "Semi-Markov Decision Processes: Nonstandard Criteria," **Journal of Probability in The Engineering and Informational Systems**, Vol. 21, No. 4, pp. 635-657, 2007.
- [6] Gürsoy, K., "An Exponential Model for Treatment Effects Without a Control Group," **Turkish Journal of Mathematics**, Vol. 29, No. 2, pp. 193-200, 2005.
- [7] Nugent, E., Baykal-Gürsoy, M. and Gürsoy, K., "Residuals for k-Step-Ahead Controlled Processes and Related Monitoring Problems," **Journal of Quality & Reliability Engineering International**, Vol. 21, No. 1, pp. 63-80, 2005.
- [8] Gürsoy, K. and Katchakis, M., "On Maximizing the Availability of Two Component Series Systems in Discrete Time," **American Journal of Mathematical and Management Sciences**, Vol. 23, No. 1&2, pp. 61-73, 2003.
- [9] Gülcür, H.Ö., Akman, V. and Gürsoy, K., "CAD: An Adaptive Controller Based on the Extended Kalman Filter," **Proceedings of IFAC**, pp. 452-473, 1982.

- [1] Gürsoy K., "Category Theory and Decision Making," 2022, <https://doi.org/10.7282/00000227>
- [2] Gürsoy K., "A Model Theoretic Approach to Classify Influential Projects," 2021, <https://doi.org/10.7282/00000099>
- [3] Gürsoy K., "Shape Theory and Topological Statistics," 2020, <https://doi.org/doi:10.7282/t3-ws6g-8563>
- [4] Sundararajan A. and Gürsoy K., "Telecom Customer Churn Prediction," 2020, <https://doi.org/doi:10.7282/t3-76xm-de75>
- [5] Inamdar S. R. and Gürsoy K., "Cloud Hosted Business-Data Driven BI Platforms," 2019, <https://doi.org/doi:10.7282/t3-f5vq-4938>
- [6] Shah S. H. and Gürsoy K., "Customer Transaction Prediction," 2019, <https://doi.org/doi:10.7282/t3-0j57-mt16>
- [7] Sahai L. S. and Gürsoy K., "Real Time Credit Card Fraud Detection," 2019, <https://doi.org/doi:10.7282/t3-qe71-9791>
- [8] Mannadier N. and Gürsoy K., "Neural Networks for Text Classification," 2019, <https://doi.org/doi:10.7282/t3-pbzf-3m92>

CONFERENCE
PRESENTATIONS

- [1] Category Theory and Optimal Decisions, Fall 2022 INFORMS Annual Conference, October 2022, Indianapolis, Indiana.
- [2] A Model Theoretic Approach to Categorization of Projects, Fall 2021 INFORMS Annual Conference, October 2021, Anaheim, CA. *Chaired the Analytics III Session.*
- [3] On Dynamic Systems and Kalman Filter Estimation, Fall 2020 INFORMS Annual Conference, November 2020 (On-Line).
- [4] Geometric Statistics: Topological Data Analysis, Fall 2020 INFORMS Annual Conference, November 2020 (On-Line). *Chaired the Data Driven Methodologies for Decision Making Session.*
- [5] Shape theory and Topological Statistics, Fall 2019 INFORMS Annual Conference, October 2019, Seattle, WA.
- [6] Predicting and Managing Sustainability, Fall 2018 INFORMS Annual Conference, November 2018, Phoenix, Arizona.
- [7] Extended Kalman Filter for Predicting Sustainability, Fall 2017 INFORMS Annual Conference, October 2017, Houston, Texas. *Chaired the Technology Management Session.*
- [8] How to Measure and Predict Sustainability? Oxford Business and Economics Conference, July 2017, Oxford University, Oxford, UK.
- [9] Random Dimensional Spaces, INFORMS Annual Meeting, November 2016, Nashville, Tennessee.
- [10] Moments of a Random Set, INFORMS Annual Meeting, November 2015, Philadelphia, Pennsylvania.
- [11] On Maximizing the Availability of Systems Composed of Repairable Components, 18th INFORMS Applied Probability Society Conference, July 2015, Koc University, Istanbul, Turkey.
- [12] Optimal Procurement: Case of A Cost Conscious Manufacturer, Fall 2014 Annual Meeting of INFORMS, San Francisco, California. *Chaired the Inventory Management Session.*
- [13] Optimal Selections among Competing Projects, Conference on Business & Economics Program, July 2014, Cambridge University, Cambridge, UK.
- [14] Influential Multi-Armed Bandits, Fall 2007 Conference of INFORMS, Seattle, Washington.
- [15] Random Graphs and Restricted Second Order Logic, Fall 2006 INFORMS Conference, Pittsburgh, Pennsylvania.
- [16] Evolving Bayesian Graphs, Fall 2005 INFORMS Conference, San Francisco, California.
- [17] Residuals for k-Step-Ahead Controlled Processes and Related Monitoring Problems, July 2003 INFORMS Conference, Istanbul, Turkey. *Chaired the Health Care Session.*
- [18] Alignment of Mammogram Pairs, Fall 2002 IEEE 2nd Joint EMBS-BMSE Conference, Houston, Texas.
- [19] Approximating the Stochastic Diffusion Equation by an Ordinary Differential Equation, Fall 2001 INFORMS Conference, Miami, Florida. *Chaired the Probability Session.*
- [20] Models of Repair Allocations in Discrete Time, Fall 2000 INFORMS Conference, San Antonio, Texas. *Chaired the Queuing and Inventory Control Session.*

- [21] Utilization of Statistics to Understand Causality, Spring 2000 INFORMS Conference, Salt Lake City, Utah.
- [22] On Maximizing the Reliability of Series Systems in Discrete Time, Fall 1999 INFORMS Conference, Philadelphia, Pennsylvania.
- [23] What We Could Use: Chaos Theory vs. Time-Series Analysis, 1998 International Conference of The Academy of Business Administration, July, Barcelona, Spain. Chaired the Stochastic Processes and Their Applications Session.
- [24] How to Treat All The Patients and Acquire Sufficient Information About the Treatment Effect, 1997 Conference of The Academy of Business Administration, April, Cancun, Mexico.
- [25] Hub and Spoke System Design with Concave Cost, Fall 1996 INFORMS Conference, Atlanta, Georgia.

AWARDS

- Hindi Y.U.V.A. at Rutgers University Guru Vandana, 2023.
- RBS NTT Excellence in Scholarly Contributions Award, 2021.
- Rutgers University Open and Affordable Textbook Grant, 2017-2018.
- Rutgers Business Governing Association Best BAIT Professor Award for 2016-2017.
- RBS Teaching Excellence Award for 2016-2017.

ACADEMIC
SERVICE

Rutgers University Senate, Student Affairs Committee

From 2017 to present.

Rutgers University Senate, Faculty and Personnel Affairs Committee

From 2014 to 2017.

Rutgers University, SAS Honors Program

Faculty Mentor.

RBS, New Brunswick Academic Standing Committee

Member.

RBS, MSIS Dept., PEC Committee

Member.

RBS, MSIS Dept., Teaching Methods and Innovations Committee

Member.

Ad Hoc Dean's Meritorious Service Evaluation Committee

Member.

Ad Hoc Task Force on NTT Promotions Appointments and Promotions

Member.

The Business Analytics and Information Technology Society

Participated in many activities of this Rutgers University Student Society.

Second, Third, and Fourth Rutgers Applied Probability Conferences

Member of the organization committees.

Academic advisor of the RBS, The Business Analytics and Information Technology Society,
from 2020.

Academic advisor of the Rutgers Business School Teams for the Johnson & Johnson University Case Competitions, 2014, 2015, 2016, 2017 and 2018.

ADVISING
RESEARCH
PROJECTS

*Rutgers University, RBS Newark and New Brunswick, MSIS Department,
MITA Program, Graduate Students:*

- Nidhi Mannadier, "Neural Networks for Text Classification," Spring 2019
- Saachi Hemal Shah, "Customer Transaction Prediction," Spring 2019
- Laksha Sahai, "Real-Time Credit Card Fraud Detection," Fall 2019
- Siddesh Rajesh Inamdar, "Cloud Hosted Business-Data Driven BI Platforms," Fall 2019
- Abhijit Sundararajan, "Telecom Customer Churn Prediction," Fall 2019

ADVISING THESES

*Rutgers University, RBS Newark and New Brunswick Honors Program,
Undergraduate Students, Capstone Research Thesis:*

- Amanda Phu, "The Effect of Coronavirus-19 Pandemic and Vaccination Process on New Jersey Businesses," May 2022.
- Ankit Patel, "Does Relative Strength Produces Financial Returns ?" May 2022.
- Swetcha Ananthu, "Comparative Time-Series Analysis of New Jersey's Seasonally Adjusted and Seasonally Unadjusted Unemployment Rates from 2010 to 2020," May 2020.

MENTORING

School of Arts and Sciences Honors Program Faculty Mentor

Mentoring numerous undergraduate students in the Honors College, from 2020 to present.

PROFESSIONAL
SERVICE

Rutgers University Honors College 2021 Spring Semester Large Assembly Colloquium

- Panelist, Representing Rutgers Business School, Newark and New Brunswick:
"Connections of Different Fields of Academia and Interests, Research and Other Activities"

Conference Service

- Chair of Several INFORMS sessions
- Chair of Several Academy of Business Administration sessions

Reviewer for Journals

- Annals of Operations Research
- Naval Research and Logistics
- Probability in the Engineering and Informational Sciences
- Society of Industrial and Applied Mathematics

Peer Review of Books

- Several book reviews on Information Systems, Operations Research, Experimental Mathematics, Causality and Statistics for the AMS, Cambridge University Press, Prentice Hall, John Wiley and McGraw-Hill publishing companies, since 1996

PROFESSIONAL
MEMBERSHIPS

- **INFORMS, The Institute for Operations Research and the Management Sciences**
Member since 1996
- **APS, Applied Probability Society**
Member since 1996
- **AMS, American Mathematical Society**
Member since 1992

CITIZENSHIP

Citizen of the **USA**.