

Nilay Noyan

Principal Research Scientist
 Middle-Mile Planning, Research, and Optimization Science
 AMAZON, Seattle, USA
 nilayn@amazon.com

Research Interests

- Decision Making Under Uncertainty; Large-scale Optimization; Stochastic Programming; Risk Modeling; Statistical Inference Methods
- Stochastic Optimization Applications; in particular, humanitarian logistics, sustainable urban transportation, airline revenue management

Education

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|---|-----------------|
| RUTGERS UNIVERSITY | NEW JERSEY, USA |
| <i>Ph.D., Operations Research</i> | 10/2006 |
| • Dissertation: <i>Optimization with first order stochastic dominance constraints</i> | |
| Advisor: Andrzej Ruszczyński | |
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| RUTGERS UNIVERSITY | NEW JERSEY, USA |
| <i>M.S., Operations Research</i> | 01/2004 |
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| MIDDLE EAST TECHNICAL UNIVERSITY | ANKARA, TURKEY |
| <i>B.S., Industrial Engineering</i> | 06/2001 |
| • Minor: Sociology | |

Professional Experience

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| AMAZON | SEATTLE, USA |
| <i>Principal Research Scientist</i> | 10/2020-Present |
| <i>Senior Research Scientist</i> | 09/2019-10/2020 |
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| SABANCI UNIVERSITY | ISTANBUL, TURKEY |
| <i>Professor, Industrial Engineering</i> | 10/2019-10/2020 |
| <i>Associate Professor, Industrial Engineering</i> | 10/2012-09/2019 |
| <i>Assistant Professor, Manufacturing Systems and Industrial Engineering</i> | 09/2006-09/2012 |
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| UNIVERSITY OF CALIFORNIA, BERKELEY | CALIFORNIA, USA |
| <i>Visiting Scholar, Industrial Engineering and Operations Research</i> | 06/2014-08/2014 |
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| THE OHIO STATE UNIVERSITY | OHIO, USA |
| <i>Visiting Scholar, Department of Integrated Systems Engineering</i> | 02/2014-05/2014 |
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| AVAYA LABS RESEARCH | NEW JERSEY, USA |
| <i>Research Scientist, Data Analysis Research Department</i> | 05/2005 - 08/2005 |

- Developed applications of operations research and statistics to the measurement of the contact centers as part of Avaya's next generation contact center measurement and management product.
- Developed tools to visualize detailed historical data related to contact center activities. Specifically these tools provide very concise representations of call and agent details that would otherwise be presented in lengthy, hard to understand tabular reports. Based on these ideas a *patent*, titled "*Timeline visualization for call center processes*", was granted by the United States Patent and Trademark Office.

LAMSADE AT THE UNIVERSITY OF PARIS-DAUPHINE
Visiting Researcher

PARIS, FRANCE
 05/2006 - 07/2006

- Supported by DIMACS (Center for Discrete Mathematics and Theoretical Computer Science).

RUTCOR-RUTGERS CENTER FOR OPERATIONS RESEARCH
Teaching and Research Assistant

NEW JERSEY, USA
 09/2002 - 08/2006

DEPARTMENT OF MATHEMATICS, RUTGERS UNIVERSITY
Lecturer

NEW JERSEY, USA
 06/2003 - 08/2003

Awards and Honors

- The Research Encouragement Award, METU Prof.Dr. Mustafa N. Parlar Education and Research Foundation, 2017
- The Science Academy, Turkey - Young Scientist Award (BAGEP), 2014
- Graduating Class Teaching Award, Sabancı University, 2013
- CAREER Award Recipient, The Scientific and Technological Research Council of Turkey (TUBITAK), 2012-2015
- Invited Tutorial Speaker at 2018 INFORMS Annual Meeting, Phoenix, 2018.
<http://meetings2.informs.org/wordpress/phoenix2018/tutorials/>
- Invited Speaker in the "Best of Women in OR/MS (WORMS)" session at INFORMS, San Francisco, 2014; featuring presentations by three women authors of papers published in top INFORMS journals
- An article about one of my papers is featured in the Institute of Industrial Engineers' (IIE) Industrial Engineer Magazine to highlight the impact of industrial engineering research on professional practice.
<http://www.iienet2.org/IndustrialEngineer/details.aspx?id=38767>
- Outstanding Reviewer Award 2016, OR Spectrum.
<https://link.springer.com/article/10.1007/s00291-016-0470-y>
- Fellowship/Research Scholarship, Rutgers University, USA, 2001-2006.

Patents

Noyan, N., Paddock, H.R., Tendick, P.H., 2009. Timeline visualization for call center processes, granted by the United States Patent and Trademark Office (USPTO #: 7636433).
<http://www.google.com/patents/US7636433>

Published Journal Papers and Tutorials

1. Bülbül, K., N. Noyan and H. Erol, 2020. Multi-Stage Stochastic Programming Models for Provisioning Cloud Computing Resources, *European Journal of Operational Research*, 288 (3), 886-901. <https://doi.org/10.1016/j.ejor.2020.06.027>
2. Gutjahr, W. J., N. Vandaele, N. Noyan, and L. Van Wassenhove, 2020. Innovative approaches in humanitarian operations, *OR Spectrum*, 42, 585-589. <https://doi.org/10.1007/s00291-020-00598-6>
3. Noyan, N., M. Meraklı, and S. Küçükyavuz, 2019. Two-stage Stochastic Programming under Multivariate Risk Constraints with an Application to Humanitarian Relief Network Design, to appear, *Mathematical Programming*. <http://dx.doi.org/10.1007/s10107-019-01373-4>
4. Noyan, N., 2018. Risk-Averse Modeling and Optimization, In INFORMS TutORials in Operations Research, Recent Advances in Optimization and Modeling of Contemporary Problems, 221-254. <https://pubsonline.informs.org/doi/abs/10.1287/educ.2018.0183>
5. Noyan, N. and G. Rudolf, 2018. Optimization with stochastic preferences based on a general class of scalarization functions, *Operations Research*, 66(2), 463-486. <http://dx.doi.org/10.1287/opre.2017.1671>
6. Elçi, Ö., N. Noyan, and K. Bülbül, 2018, Chance-Constrained Stochastic Programming under Variable Reliability Levels with an Application to Humanitarian Relief Network Design, *Computers and Operations Research*, 96, 91-107. <http://dx.doi.org/10.1016/j.cor.2018.03.011>
7. Elçi, Ö. and N. Noyan, 2018. A Chance-Constrained Two-Stage Stochastic Programming Model for Humanitarian Relief Network Design, *Transportation Research Part B: Methodological*, 108, 55-83. <https://doi.org/10.1016/j.trb.2017.12.002>
8. N. Noyan and G. Kahvecioğlu, 2018. Stochastic Last Mile Relief Network Design with Resource Reallocation, *OR Spectrum*, 40(1), 187-231. <http://dx.doi.org/10.1007/s00291-017-0498-7>
9. Kolak, O. I., O. Feyzioğlu, N. Noyan, 2018. Bi-level multi-objective traffic network optimisation with sustainability perspective, *Expert Systems with Applications*, 104(15), 294-306. <http://dx.doi.org//10.1016/j.eswa.2018.03.034>
10. Liu, X., S. Küçükyavuz, and N. Noyan, 2017. Robust Multicriteria Risk-Averse Stochastic Programming Models, *Annals of Operations Research*, 259(1), 259-294. <http://dx.doi.org/10.1007/s10479-017-2526-z>
11. Atakan S., K. Bülbül, and N. Noyan, 2017. Minimizing Value-at-Risk in Single Machine Scheduling Problems, *Annals of Operations Research*, 248(1), 25-73. <http://dx.doi.org/10.1007/s10479-016-2251-z>
12. Feyzioğlu, O. and N. Noyan, 2017. Risk-averse Toll Pricing in a Stochastic Transportation Network, *European Journal of Industrial Engineering*, 11 (2): 133-167. <http://dx.doi.org/10.1504/EJIE.2017.083248>
13. Küçükyavuz S. and N. Noyan, 2016. Cut Generation for Optimization Problems with Multivariate Risk Constraints, *Mathematical Programming*, 159 (1), 165-199. <http://dx.doi.org/10.1007/s10107-015-0953-7>

14. Noyan N., B. Balçık, and S. Atakan, 2016. A Stochastic Optimization Model for Designing Last Mile Relief, *Transportation Science*, 50 (3), 1092-1113.
<https://dx.doi.org/10.1287/trsc.2015.0621>
15. Hong, X., M. Lejeune, and N. Noyan, 2015. Stochastic Network Design for Disaster Preparedness, *IIE Transactions*, 47 (4), 329-357.
<http://dx.doi.org/10.1080/0740817X.2014.919044>
 - Featured in the *Institute of Industrial Engineers' (IIE) Industrial Engineer Magazine*, March, 47 (3), <http://www.iienet2.org/IndustrialEngineer/details.aspx?id=38767>
16. Noyan, N. and G. Rudolf, 2015. Kusuoka Representations of Coherent Risk Measures in General Probability Spaces, *Annals of Operations Research*, 229 (1), 591-605.
<http://dx.doi.org/10.1007/s10479-014-1748-6>
17. Rudolf, G., N. Noyan, and V. Giard, 2014. Modeling Sequence Scrambling and Related Phenomena in Mixed-Model Production Lines, *European Journal of Operational Research*, 237 (1): 177-195.
<http://dx.doi.org/10.1016/j.ejor.2014.02.041>
18. Noyan, N. and G. Rudolf, 2013. Optimization with multivariate conditional value-at-risk constraints, *Operations Research*, 61 (4):990-1013.
<http://dx.doi.org/10.1287/opre.2013.1186>
19. Aydın, N., Ş.İ. Birbil, J.B.G. Frenk, and N. Noyan, 2013. Single-Leg Airline Revenue Management with Overbooking, *Transportation Science*, 47 (4): 560-583.
<http://dx.doi.org/10.1287/trsc.1120.0444>
20. Kolak, O. I., Ş.İ. Birbil, O. Feyzioğlu, N. Noyan, and S. Yalçındağ, 2013. Using Emission Functions in Modeling Environmentally Sustainable Traffic Assignment Policies, *Journal of Industrial and Management Optimization*, 9 (2): 341-363.
<http://dx.doi.org/10.3934/jimo.2013.9.341>
21. Topaloğlu, H., Ş. I. Birbil, J.B.G. Frenk, and N. Noyan, 2012. Tractable Open Loop Policies for Joint Overbooking and Capacity Control Over a Single Flight Leg with Multiple Fare Classes, *Transportation Science*, 46 (4): 460-481.
<http://dx.doi.org/10.1287/trsc.1110.0403>
22. Şeker, M. and N. Noyan, 2012. Stochastic Optimization Models for the Airport Gate Assignment Problem, *Transportation Research Part E: Logistics and Transportation Review*, 48 (2): 438-459.
<http://dx.doi.org/10.1016/j.tre.2011.10.008>
23. Noyan N., 2012. Risk-Averse Two-Stage Stochastic Programming with an Application to Disaster Management, *Computers and Operations Research*, 39 (3): 541-559.
<http://dx.doi.org/10.1016/j.cor.2011.03.017>
24. Rudolf, G., N. Noyan, D. Papp, and F. Alizadeh, 2011. Bilinear Optimality Constraints for the Cone of Positive Polynomials, *Mathematical Programming, Ser. B*, 129 (1): 5-31.
<http://dx.doi.org/10.1007/s10107-011-0458-y>
25. Noyan N., 2010. Alternate Risk Measures for Emergency Medical Service System Design, *Annals of Operations Research*, 181 (1) : 559-589.
<http://dx.doi.org/10.1007/s10479-010-0787-x>
26. Lejeune, M. and N. Noyan, 2010. Mathematical Programming Approaches for Generating p-efficient Points, *European Journal of Operational Research*, 207 (2): 590-600.
<http://dx.doi.org/10.1016/j.ejor.2010.05.025>

27. Alizadeh, F., J. Eckstein, N. Noyan, and G. Rudolf, 2008. Arrival Rate Approximation by Nonnegative Cubic Splines. *Operations Research*, 56 (1): 140-156.
<http://dx.doi.org/10.1287/opre.1070.0443>
28. Noyan N. and A. Ruszczyński, 2008. Valid Inequalities and Restrictions for Stochastic Programming Problems with First Order Stochastic Dominance Constraints. *Mathematical Programming, Ser. A*, 114 (2): 249-275.
<http://dx.doi.org/10.1007/s10107-007-0100-1>
29. Noyan N. and A. Prékopa, 2006. A Variant of the Hungarian Inventory Control Model. *International Journal of Production Economics*, 103 (2): 784-797.
<http://dx.doi.org/10.1016/j.ijpe.2005.10.009>
30. Noyan N., G. Rudolf, and A. Ruszczyński, 2006. Relaxations of Linear Programming Problems with First Order Stochastic Dominance Constraints. *Operations Research Letters*, 34 (6): 653-659.
<http://dx.doi.org/10.1016/j.orl.2005.10.004>

Submitted Journal Papers

1. Noyan, N., G. Rudolf, and M. Lejeune, 2018. Distributionally Robust Optimization with Decision-Dependent Ambiguity Set, *INFORM Journal on Computing*, under revision.
http://www.optimization-online.org/DB_HTML/2018/09/6821.html
2. Koca, E., N. Noyan and H. Yaman, 2019. Two-Stage Facility Location Problems with Restricted Recourse, under review.
http://www.optimization-online.org/DB_FILE/2020/02/7617.pdf

Research Reports

1. Noyan, N., and G. Rudolf, 2012. Kusuoka Representations of Coherent Risk Measures in Finite Probability Spaces. *RUTCOR-Rutgers Center for Operations Research*, RRR 33-2012.
http://rutcor.rutgers.edu/pub/rrr/reports2012/33_2012.pdf
2. Noyan N., D. Papp, G. Rudolf, and F. Alizadeh, 2009. Bilinearity Rank of the Cone of Positive Polynomials and Related Cones. *RUTCOR-Rutgers Center for Operations Research*, RRR 7-2009.
<http://rutcor.rutgers.edu/2009.html>
3. Rudolf, G., N. Noyan, and F. Alizadeh, 2005. Optimality Constraints for the Cone of Positive Polynomials. *RUTCOR-Rutgers Center for Operations Research*, RRR 1-2005.
<http://rutcor.rutgers.edu/2005.html>

Book Chapters

Birbil, Ş.İ., J.B.G., Frenk, B. Kaynar, and N. Noyan, 2009. Risk Measures and Their Applications in Asset Management. In: *The VaR Implementation Handbook*, Gregoriou, Greg N. (Ed.), 311-338, The McGraw-Hill Companies, New York.

Conference Proceedings

1. Yeniterzi, S., R. Yeniterzi, A. Küçükural, N. Noyan, and U. Sezerman, 2008. A New Approach to Measure the Similarities of Protein Structures Using Network Properties. *HIBIT08, International Symposium on Health Informatics and Bioinformatics*, Istanbul, Turkey.
2. Alizadeh F., J. Eckstein, N. Noyan, and G. Rudolf, 2005. Arrival rate approximation by nonnegative cubic splines. *2005 IEEE International Conference on Electro/Information Technology (EIT 2005)*, Pages: 195-200, May 2005, Lincoln, Nebraska.
<http://dx.doi.org/10.1109/EIT.2005.1626990>
3. Kolak, O. I., D. Akın, Ş.İ. Birbil, O. Feyzioğlu, and N. Noyan, 2011. Multicriteria sustainability evaluation of transport networks for selected European countries. *WCE 2011, Proceedings of the World Congress on Engineering 2011*, Lecture Notes in Engineering and Computer Science 2190 (1), Pages: 117-122, July 2011, London, UK.
4. Atakan, S., B. Tezel, K. Bülbül, and N. Noyan, 2011. Minimizing Value-at-Risk in the Single-Machine Total Weighted Tardiness Problem. *In Proceedings of the 5th Multidisciplinary International Scheduling Conference on Scheduling: Theory & Applications (MISTA 2011)*, 9-11 August 2011, Phoenix, Arizona, USA, pages 215-229.

Grants/Projects

TUBITAK 1001 Project, *Robust Risk-Averse Stochastic Programming Models For Multicriteria Decision Making Problems (115M560)*.

The Scientific and Technological Research Council of Turkey, 10/2015-10/2017, 171,900 TL.

- For many decision-making problems under uncertainty, it is essential to take into account decision makers' risk preferences and specify the preferences based on multiple stochastic performance measures/criteria. Such decision-making problems arise in a wide range of areas, including humanitarian logistics, homeland security budget allocation, and financial management. In the scope of this project, we intend to study various risk-averse optimization models for multicriteria decision-making problems and develop associated effective solution methods. In such problems, finding best decisions requires specifying preference relations among vector-valued random variables, where each dimension of a vector corresponds to a decision criterion. In this respect, we consider the multivariate preference relations primarily based on the risk measure called "conditional value-at-risk - (CVaR)"; such relations provide a higher flexibility to express decision makers' risk preferences and allow us to represent a wider range of views.

TUBITAK Career Award, *Stochastic Programming Models for the Post-disaster Relief Network Design Problem (111M543)*.

The Scientific and Technological Research Council of Turkey, 03/2012-10/2015, 170,886 TL.

Partially joint work with Burcu Balçık (Özyeğin University).

- In the chaotic post-disaster environment, there is uncertainty in factors affecting the structure of the relief distribution network. However, the relief network design decisions have to be taken before the uncertainties related to the post-disaster situations are resolved because the relief operations must be initiated as promptly as possible. Since the relief network design decisions significantly affect the performance of disaster response (in terms of response time, sufficiency of relief supplies, etc.), it is important to develop decision-making models that effectively incorporate the inherent uncertainty. It is also essential to address the critical concerns of relief organizations, which are providing accessible and equitable service to beneficiaries. In this project, we characterize the concepts of accessibility and equity within the context of last mile distribution network design and develop metrics to incorporate these critical concerns into optimization models. We aim at developing stochastic programming

models for the last mile relief network design problem that incorporate the accessibility and equity while capturing the uncertain aspects of the post-disaster environment.

http://bsi.sabanciuniv.edu/en/portfolio_page/humanitarian-relief-network-design-under-unc

TUBITAK 1001 Project, *Models and Algorithms for Risk Averse Machine Scheduling Problems (112M864)*.

The Scientific and Technological Research Council of Turkey, 04/2013-04/2016, 173,495 TL.

Joint work with Kerem Bülbül (PI, Sabancı University).

- In its more than half a century old history the machine scheduling literature has mostly ignored the risk that may arise from the uncertainty inherent in the problem parameters. Research has either adopted a completely deterministic point of view or a risk-neutral approach where in most cases distributional assumptions are put in place for uncertain parameters and the goal is to optimize the expected value of the objective function. In practice, the performance of either approach is closely related to the degree of uncertainty. Clearly, with increased uncertainty the solution of a deterministic or a risk-neutral scheduling model may produce undesirable performance for some realizations of the random data and be considered as “risky.” Building upon this perspective, our primary goal in this project is to construct risk-averse machine schedules by explicitly factoring in the uncertainty in the problem parameters into the scheduling models. The literature on this topic is at best scarce except for some related work on robust scheduling models. In the scope of this project, we intend to contribute to the literature by developing novel, interesting, and challenging risk-averse machine scheduling models and associated solution algorithms under two popular risk measures (value-at-risk and conditional value-at-risk).

TUBITAK 1001 Project, *Developing Traffic Assignment Optimization Models and Solution Methods for Establishing Sustainable Urban Transportation Policies (109M137)*.

The Scientific and Technological Research Council of Turkey, 09/2009-09/2012, 205,390 TL.

Joint work with Orhan Feyzioglu (PI, Galatasaray University).

- Urban transport systems, which cause negative externalities such as congestion, high energy consumption and air pollution, play a vital role in maintaining sustainability when designed appropriately. In this project, our main focus is on guaranteeing that the associated system outputs support the sustainable development of society in terms of environmental, economic, and social issues. Traditionally, policies are based on the objective of minimizing the travel times of the users, however, this economic goal is insufficient by itself. In this respect, the main objective of this project is to capture other goals related to sustainability dimensions and integrate sustainability principals into optimization models for urban transport system planning and provide decision support to the development of transport policies.

Travel Demand Estimation Models.

Research Grant by Istanbul Metropolitan Municipality, 08/2007 - 08/2009, 15,000 TL.

Joint work with Güvenç Şahin.

- Estimating travel demand is an important issue in managing congested traffic, which is a serious problem of the city of Istanbul. The process of demand estimation is an attempt to understand and predict the behavioral patterns of individuals, i.e., the choices made on routes and transportation modes. In this project, we investigated potential improvements in travel demand estimation procedures that were used by the Directorate of Transportation Planning of Istanbul Metropolitan Municipality and developed models using statistical inference techniques to estimate the travel mode choices. In particular, we developed a mixed (hybrid) logit model of travel mode choice that accommodates taste heterogeneity (taste differences across individuals) due to both observed and unobserved individual attributes. We applied the proposed discrete choice model, which relaxes some of the restrictive assumptions of the currently used multinomial logit model, to the real data on approximately 354,000

trips, and showed that it could provide potentially better estimations. Fortunately, the advent of fast computers and the development of advanced simulation techniques made the estimation of such an analytically intractable mode choice model formulation very practical.

Asset Placement Model.

Merrill Lynch, 01/2003 - 05/2003.

- Participated in developing an investment/asset allocation tool to assist the Merrill Lynch Financial Advisors. Identified the best investment vehicles to maximize the client's accumulation of retirement assets and after tax retirement income based on various investment factors such as tax bracket, investment time horizon, portfolio turnover, risk tolerance, investment risk, and expected return.

Graduate Students

THESIS SUPERVISION

- Nurşen Aydın (MS.), *New Models for Single Leg Airline Revenue Management with Overbooking, No-Shows, and Cancellations*, co-advised with Ş.İ. Birbil, Sabancı University, July 2009.
- Merve Şeker (MS.), *Stochastic Airport Gate Assignment Problem*, Sabancı University, August 2010.
- Ceyda Sol (MS.), *Identification of Disease Related Significant Single Nucleotide Polymorphisms (SNPs)*, co-advised with Uğur Sezerman, Sabancı University, February 2010.
- Semih Yalçındağ (MS.), *Modeling Sustainable Traffic Assignment Policies with Emission Functions and Travel Time Reliability*, Sabancı University, August 2010.
- Semih Atakan (MS.), *Minimizing Value-at-Risk in Single Machine Scheduling Problems*, co-advised with K. Bülbül, Sabancı University, August 2012.
- Birce Tezel (MS.), *Open Loop Policies For Single-Leg Air-Cargo Revenue Management*, co-advised with J.B.G. Frenk, Sabancı University, August 2012.
- Gökçe Kahvecioğlu (MS.), *Stochastic Last Mile Relief Network Design with Resource Reallocation*, Sabancı University, August 2014.
- Özgün Elçi (MS.), *Chance-Constrained Stochastic Programming Models for Humanitarian Relief Network Design*, co-advised with K. Bülbül, Sabancı University, August 2016.

Courses Taught

- IE 305 - Simulation (junior/senior)
- IE 401 - Production and Service Systems Operations (junior/senior)
- IE 302 - Stochastic Models in Operations Research (junior/senior)
- ENS 491/492 - Senior Project
- IE 503 - Stochastic Processes (graduate)
- ENS 505 - Methods of Statistical Inference (graduate)
- IE 680 - Revenue Management (graduate)
- IE 602 - Stochastic Programming (graduate)

- IE 501: Linear Programming and Extensions (graduate)

University Service

- Faculty board member, 11/2014 - 11/2017.
- Curriculum committee member, 08/2012 - 07/2018.
- Graduate academic coordinator for the IE program, 02/2010 - 05/2012.
- TA assignment and evaluation committee member, 02/2010 - 05/2012.
- Web committee member, 08/2012- 02/2014.
- Gürsel Sönmez research award committee member, 2011, 2015, 2016.
- Diploma area advisor, 09/2007 - 09/2009, 09/2015 - 09/2019.
- Academic ethics committee, 12/2017 - 09/2018.

Professional Activities

- Jury member for 2020 INFORMS Prize.
<https://www.informs.org/Recognizing-Excellence/INFORMS-Prizes/INFORMS-Prize>
- Elected board member of European Working Group on Stochastic Optimization (EWGSO); January 2019-present, <https://www.mii.lt/ewgso/index.php?page,board.en>
- Elected board member of Stochastic Programming Society, Committee on Stochastic Programming (COSP): July 2013-July 2019, <https://stoprog.org/cosp-members>.
- Associate Editor of *INFORMS Journal on Computing*.
- Associate Editor of *IIE Transactions*.
- Associate Editor of *Networks*.
- Editorial Board Member of *OR Spectrum*.
- Guest Editor of Special Issue of *OR Spectrum*, “Innovative Use of Technology and Analytics for Humanitarian Operations”, in progress. Co-editors: Walter J. Gutjahr, Nico Vandaele and Luk N. Van Wassenhove.
- Co-director, Systems Modelling and Decision Analytics (SyMDA) Lab,
<http://symda.sabanciuniv.edu/>
- Researcher, Smart Mobility and Logistics (SML) Lab, <http://sml.sabanciuniv.edu/>
- Advisory Board Member, Center of Excellence in Data Analytics, Sabanci University, May 2017-Present
<http://ceda.sabanciuniv.edu/en/>
- Member of the Young Science Academy of Turkey, <http://bilimakademisi.org/genc-ba/>.
- Scientific Committee Member, International Conference on Stochastic Programming 2019, Trondheim, Norway.
<https://www.ntnu.edu/icsp>

- Program committee member, International Conference on Stochastic Programming 2016, Búzios, Brazil.
- 2016 and 2019 COSP (Committee on Stochastic Programming) Student Paper Prize Committee Chair
<https://stoprog.org/student-paper-winners>.
- Scientific committee member, European Conference on Stochastic - Optimization Computational Management Science Conference (ECSSO-CMS 2020), Venice, Italy.
url<https://www.unive.it/pag/38159>.
- Cluster organizer - Humanitarian Logistics, National Congress on Operations Research and Industrial Engineering (YAEM 2015), Ankara, Turkey, 2015.
- Program committee member, National Conference on Operations Research and Industrial Engineering (YAEM 2010), Istanbul, Turkey, 2010.
- Referee for scientific journals: *Operations Research*, *SIAM Journal on Optimization*, *Mathematical Programming*, *Transportation Science*, *European Journal of Operational Research*, *Annals of Operations Research*, *Naval Research Logistics*, *Optimization Letters*, *Transportation Research Part E*, *International Journal of Production Economics*, *Production and Operations Management*, *OR Spectrum*, *Transportation Research Part B: Methodological*, *IIE Transactions*.
- Grant proposal review panelist for TUBITAK research projects, TUBITAK project progress reviewer, and TUBITAK Industrial R&D project reviewer.
- Member, Operational Research Society of Turkey (ORST).
- Member, Institute for Operations Research and the Management Sciences (INFORMS).
- Member, Stochastic Programming Society.
- Member, Mathematical Optimization Society.
- Member, INFORMS Public Sector Operations Research (PSOR).

Conference Presentations, Invited Talks

- *A Variant of the Hungarian Inventory Control Model*.
Joint work with A. Prékopa.
The Tenth International Conference on Stochastic Programming, Tucson, AZ, 2004.
- *Arrival Rate Approximation by Nonnegative Cubic Splines*.
Joint work with F. Alizadeh, J. Eckstein, and G. Rudolf.
 - The International Federation of Operational Research Societies (IFORS), Honolulu, Hawaii, 2005.
 - INFORMS Annual Meeting, San Francisco, 2005.
- *Valid Inequalities for First Order Stochastic Dominance Constraints*.
Joint work with A. Ruszczyński.
 - **(Invited talk)** Rutgers-Stevens Workshop on Risk-Averse Optimization, Rutgers University, New Brunswick, NJ, 2005.
 - INFORMS Annual Meeting, San Francisco, 2005.

- *Methods for Solving Optimization Problems with Stochastic Dominance Constraints.*
Joint work with A. Ruszczyński and G. Rudolf.
INFORMS Annual Meeting, Pittsburgh, 2006.
- *Optimization with First Order Stochastic Dominance Constraints.*
Joint work with A. Ruszczyński.
INFORMS International, Puerto Rico, 2007.
- *Bilinear Complementary Conditions for Positive Polynomials.*
Joint work with F. Alizadeh, and G. Rudolf.
 - Second Mathematical Programming Society International Conference on Continuous Optimization, ICCOPT II & MOPTA-07, Ontario, Canada, 2007.
 - 2006 Spring Central Sectional Meeting Notre Dame, IN, 2006.
- *Valid Inequalities and Restrictions for Stochastic Programming Problems with First Order Stochastic Dominance Constraints.*
Joint work with A. Ruszczyński.
(Invited talk) The 11th International Conference on Stochastic Programming, Vienna, Austria, 2007.
- *Emergency Medical Service System Design with Risk Measures.*
 - INFORMS Annual Meeting, Washington, DC, 2008.
 - **(Invited talk)** IORCIBS Seminar, Koç University, Faculty of Administrative Sciences and Economics, Istanbul, Turkey, 2008.
 - **(Invited talk)** Department of Industrial Engineering Seminar, Middle East Technical University, Ankara, Turkey, 2008.
- *Single-leg Airline Revenue Management with Overbooking and Cancellations.*
Joint work with N. Aydın, Ş.İ. Birbil, and J.B.G. Frenk.
 - 23rd European Conference on Operational Research, Bonn, Germany, 2009.
 - 30th National Congress on Operations Research and Industrial Engineering (YAEM 2010), Istanbul, Turkey, 2010.
 - 24th European Conference on Operational Research, Lisbon, Portugal, 2010.
- *An Efficient Method for Generating p -Efficient Points.*
Joint work with M. Lejeune.
 - **(Invited talk)** 24th Mini Euro Conference on Continuous Optimization and Information-Based Technologies in The Financial Sector, Izmir, Turkey, 2010.
 - 24th European Conference on Operational Research, Lisbon, Portugal, 2010.
 - 12th International Conference on Stochastic Programming, Halifax, Nova Scotia, Canada, 2010.
- *Modeling Sustainable Traffic Assignment Policies Using Bilevel Programming.*
Joint work Ş. I. Birbil, O. Feyzioglu, O. I. Kolak and S. Yalçındağ.
 - 24th European Conference on Operational Research, Lisbon, Portugal, 2010.
 - (Ulaşım ağlarında geçiş ücretlendirmesi için CVaR içeren rassal iki seviyeli programlama modelleri), 30th National Congress on Operations Research and Industrial Engineering (YAEM 2010), Istanbul, Turkey, 2010.
- *Stochastic Airport Gate Assignment Problem.*
Joint work M. Şeker.

- 24th European Conference on Operational Research, Lisbon, Portugal, 2010.
- (Rassal Havaalanı Kapı Atama Problemi), 30th National Congress on Operations Research and Industrial Engineering (YAEM 2010), Istanbul, Turkey, 2010.
- *A Stochastic Programming Approach for Stochastic Assembly Line Balancing with Line Stoppages.*
Joint work F. T. Altekin and S. S. Kara.
 - 24th European Conference on Operational Research, Lisbon, Portugal, 2010.
 - (Rassal iş süreli montaj hatlarının dengelenmesi için bir stokastik programlama modeli), 30th National Congress on Operations Research and Industrial Engineering (YAEM 2010), Istanbul, Turkey, 2010.
- *Stochastic Bilevel Programming Models with CVaR for Toll Pricing in Transportation Networks (Ulaşım ağlarında geçiş ücretlendirmesi için CVaR içeren rassal iki seviyeli programlama modelleri).*
Joint work Ş. I. Birbil, O. Feyzioğlu, and S. Yalçındağ.
30th National Congress on Operations Research and Industrial Engineering (YAEM 2010), Istanbul, Turkey, 2010.
- *Risk-averse two-stage stochastic programming model for disaster management (Afet yönetimi için risk ölçütü içeren iki aşamalı rassal programlama modeli).*
(Invited talk) 30th National Congress on Operations Research and Industrial Engineering (YAEM 2010), Istanbul, Turkey, 2010.
- *Minimizing Value-at-Risk in the Single Machine Total Weighted Tardiness Problem.*
Joint work S. Atakan, B. Tezel and K. Bülbül.
 - 31th National Congress on Operations Research and Industrial Engineering (YAEM 2011), Sakarya, Turkey, 2011.
 - INFORMS 2011 Midwestern Conference, Columbus, OH, 2011.
 - MISTA 2011-5th Multidisciplinary International Scheduling Conference, Phoenix, Arizona, 2011.
- *Single Leg Airline Revenue Management With Overbooking.*
Joint work with N. Aydın, Ş.İ. Birbil, and J.B.G. Frenk.
(Invited talk) INFORMS 2011 Midwestern Conference, Columbus, OH, 2011.
- *Stochastic Network Design for Disaster Preparedness.*
Joint work with X. Hong, and M. Lejeune.
 - **(Invited talk)** 32th National Congress on Operations Research and Industrial Engineering (YAEM 2012), Istanbul, Turkey, 2012.
 - 19th Triennial Conference of the International Federation of Operational Research Societies (IFORS), Melbourne, Australia, 2011.
 - U.S. Army Conference on Applied Statistics, Annapolis, MD, October 2011.
- *Stochastic Optimization Model for The Last Mile Distribution Network Design Problem in Humanitarian Relief.*
Joint work with S. Atakan, B. Balçık.
 - **(Invited talk)** 32th National Congress on Operations Research and Industrial Engineering (YAEM 2012), Istanbul, Turkey, 2012.
 - **(Invited talk)** EURO-INFORMS Joint International Meeting, Rome, Italy, 2013.
 - **(Invited talk)** Joint 2nd Workshop of the Turkish and Israeli Operations Research Societies (WITOR2), Tel-Aviv, Israel, 2013.

- *Sixth Annual Workshop on Supply Chain and Logistics.*
Invited as a discussant/presenter. Bilkent University, June 25, 2012.
- *Optimization with multivariate conditional-value-at-risk constraints.*
Joint work with G. Rudolf.
 - (Invited talk) 21st International Symposium on Mathematical Programming (ISMP), Berlin, 2012.
 - (Invited seminar), Stevens Institute of Technology, New Jersey, USA, October 25, 2012.
 - ICSP 2013, The XIII International Conference on Stochastic Programming, Bergamo, Italy, 2013.
 - (Invited talk), ICCOPT 2013, The Fourth International Conference on Continuous Optimization, Lisbon, Portugal, 2013.
 - (Invited talk), INFORMS Optimization Society Conference, Texas, USA, 2014.
 - (Invited talk), “Best of Women in OR/MS (WORMS)” session at INFORMS, San Francisco, 2014.
- *Stochastic Optimization Models for Designing Last Mile Relief Networks.*
Joint work with S. Atakan, B. Balçık.
(Invited talk) INFORMS Annual Meeting, San Francisco, 2014.
- *Minimizing Value-at-Risk in Single-Machine Scheduling.*
Joint work with S. Atakan and K. Bülbül.
 - (Invited talk), INFORMS Optimization Society Conference, Texas, USA, 2014.
 - (Invited talk), INFORMS Annual Meeting, San Francisco, 2014.
- *Cut Generation in Optimization Problems with Multivariate Risk Constraints.*
Joint work with S. Kucukyavuz.
 - (Invited talk) Mixed-Integer Programming Workshop, Columbus, OH, July 2014.
 - (Invited talk) INFORMS Annual Meeting, San Francisco, CA, November 2014.
 - (Invited seminar) Rutgers Business School, New Jersey, 2014.
 - (Invited seminar) Industrial and Systems Engineering, University of Southern California, Los Angeles, 2014.
 - (Invited talk) INFORMS Computing Society Conference, Richmond, VA, January 2015.
 - (Invited talk) The 22nd International Symposium on Mathematical Programming (ISMP 2015), Pittsburgh, PA, USA, July 2015.
- *Robust Multicriteria Risk-Averse Stochastic Programming Models.*
Joint work with X. Liu and S. Kucukyavuz.
 - (Invited talk) The 22nd International Symposium on Mathematical Programming (ISMP 2015), Pittsburgh, USA, July 2015.
 - (Invited talk) INFORMS Annual Meeting, Philadelphia, PA, November 2015.
- *Optimization with Multivariate Risk Constraints based on a General Class of Scalarization Functions.*
Joint work with G. Rudolf.
 - (Invited talk) The 22nd International Symposium on Mathematical Programming (ISMP 2015), Pittsburgh, USA, July 2015.
 - The XIV International Conference on Stochastic Programming (ICSP 2016), Búzios, Brazil, June 2016.
 - (Invited talk) INFORMS Annual Meeting, Houston, Texas, October 2017.

- *Risk-Averse Stochastic Modeling and Optimization.*
 - **(Invited seminar)**, Institute of Applied Mathematics, METU, December 26, 2017.
- *Two-stage Stochastic Programming Models under Multivariate Risk Constraints.*
Joint work with M. Meraklı and S. Küçükyavuz.
 - **(Invited talk)** INFORMS Annual Meeting, November 2016, Nashville, USA.
 - European Conference on Stochastic Optimization (ECISO 2017), Stochastic Optimization in Service Science, September 2017, Rome, Italy.
 - **(Invited talk)** XV Conference on Computational Management Science (CMS 2018), 29-31 May 2018, Trondheim, Norway.
- *Chance-Constrained Stochastic Programming under Variable Reliability Levels with an Application to Humanitarian Relief Network Design.*
Joint work with Ö. Elçi and K. Bülbül.
(Invited talk) INFORMS Annual Meeting, November 2016, Nashville, USA.
- *Distributionally Robust Optimization with Decision-Dependent Ambiguity Set.*
Joint work with M. Lejeune and G. Rudolf
 - **(Invited talk)** 23rd International Symposium on Mathematical Programming (ISMP 2018), 1-6 July 2018, Bordeaux, France.
 - **(Invited talk)** Workshop at the Mathematisches Forschungsinstitut Oberwolfach (MFO, Oberwolfach Research Institute for Mathematics), 19-25 August 2018, Germany.
https://www.mfo.de/occasion/1834/www_view
 - INFORMS Annual Meeting, Phoenix, November 2018.
 - The XV International Conference on Stochastic Programming, July 29-August 2, 2019, Trondheim, Norway.
- *Facility Location Problem with Restricted Recourse.*
Joint work with E. Koca and H. Yaman.
INFORMS Annual Meeting, October 2019, Seattle, USA.