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Education:

- Ph.D. in Operations Research, 1994-1999.
  RUTCOR, Rutgers University, NJ, USA.
  Thesis: "Sequential Testing of Complex Systems"
  Advisor: Prof. Endre Boros

- B.S. in Industrial Engineering, 1990-1994.
  Bilkent University, Ankara, Turkey.

- Ankara Fen Lisesi, 1987-1990.

Research Interests:

Applications of combinatorial optimization in manufacturing and service systems.

Work Experience:

- Faculty Member, Sabanci University, Istanbul, Turkey, 2000-.
  Faculty of Engineering and Natural Sciences.
  Assist. Prof. 2000-2009
  Assoc. Prof. 2009-1018
  Prof. 2018-Present.

- Visiting Researcher, NYU Polytechnic Institute, August 2012-January 2013.

- Senior Transportation Analyst, TEMS, MD, USA, 1999-2000.

- Teaching Assistant, Rutgers University, NJ, USA, 1996-1999.

Publications: (* means indexed in Web of Science)
Journal

1. (*) Shahmoradi Z, Ünlüyurt T, "Failure Detection for Series Systems When Tests are Unreliable", accepted, Computers and Industrial Engineering, 118, 309-318, 2018.
2. (*) Hosseini SA, Şahin G, **Ünlüyurt T**, "A penalty-based scaling algorithm for the multi-period multi-product distribution planning problem", Engineering Optimization, 49, (4), 583-596, 2017.
3. (*) Daldal R, Özlük Ö, Selçuk B, Shahmoradi Z, **Ünlüyurt T**, "Sequential testing in batches", Annals of Operations Research, 253, (1), 97-117, 2017.
4. (*) Allen SR, Hellerstein L, Kletenik D, **Ünlüyurt T**, "Evaluation of monotone DNF formulas", Algorithmica, 77, (3), 661-685, 2017.
5. (*) Daldal R, Gamzu I, Segev D, **Ünlüyurt T**, "Approximation algorithms for sequential batch-testing of series systems", Naval Research Logistics, 63, (4), 275-286, 2016.

6. (*) **Ünlüyurt T,** Tunçer Y, "Estimating the performance of emergency medical service location models via discrete event simulation", Computers & Industrial Engineering, 102, 467-475, 2016.
7. (*) Türker UC, **Ünlüyurt T**, Yenigün H, "Effective algorithms for constructing minimum cost adaptive distinguishing sequences", Information and Software Technology, 74, 69-85, 2016.
8. (*) Hosseini SA, Şahin G, **Ünlüyurt T**, A Polyhedral-Based Approach for the Multi-Period Multi-Commodity Networks, Journal of Applied Mathematics, 2014.
9. (*) **Ünlüyurt T**, Aydın C, Improved rehandling strategies for container retrieval process, Journal of Advanced Transportation, 46, (4), 378-393, 2012.
10. (*)Başar A, Çatay B, **Ünlüyurt T**, A taxonomy for emergency service station location problem, Optimization Letters,6, (6), 1147-1160, 2012.
11. (*) Çatay B, Özlük Ö, **Ünlüyurt T**, TestAnt: An ant colony system approach to sequential testing under precedence constraints, *Expert Systems with Applications*, 38, 14945-14951, 2011.
12. (*) Başar A, Çatay B, **Ünlüyurt T**, A multi-period double coverage approach for locating the emergency medical service stations in Istanbul, *Journal of The Operational Research Society*, 62, (4), 627-637, 2011.
13. (*) **Ünlüyurt T**, Boros E, A note on "Optimal resource allocation for security in reliability systems", *European Journal of Operational Research,* 199, (2), 601-603, 2009.
14. (*) Bülbül K, Erçetin Ö, **Ünlüyurt T**, Hop Constrained Energy Efficient Broadcasting: Insights from Massively Dense Ad Hoc Networks, *IEEE Tran. in Mobile Computing*, 8, (2): 188-202, 2009.
15. Çatay B, Başar A, **Ünlüyurt T,** İstanbul'da Acil Yardım İstasyonlarının Yerlerinin Planlanması (Planning the Locations of the Emergency Medical Service Stations in Istanbul), *Endüstri Mühendisliği*, 4: 20-35, 2008. (in Turkish)
16. (*) Kundakçıoğlu ÖE, **Ünlüyurt T**, Bottom-up Construction of Minimum Cost AND/OR Trees for Sequential Fault Diagnosis, *IEEE Tran. in Systems, Man and Cybernetics, Part A: Systems and Humans*, 37, (5): 621-629, 2007.
17. (*) **Ünlüyurt T**, Testing systems of identical components, *Journal of Combinatorial Optimization,* 10, (3):261-282, 2005.
18. (*) **Ünlüyurt T**, Sequential testing of complex systems: A review, *Discrete Applied Mathematics*, 142, (1-3):189-205, 2004.
19. (*) Boros E, **Ünlüyurt T**, Diagnosing double regular systems, *Annals of Mathematics and Artificial Intelligence*, 26, (1-4):171-191,1999.

Book Chapter:
1. Boros E, Ünlüyurt T, Sequential testing of series-parallel systems of small depth, In: Computing Tools for Modeling, Optimization and Simulation, 39-74, 2000, Laguna and Velarde eds., Kluwer Academic Publishers, Boston.

Volumes Edited:
1. Kundakcioglu OE, Ulusoy G, Ünlüyurt T, Special Issue on 30th National Conference on Operations Research and Industrial Engineering, Optimization Letters, 6, (6), 2012.

Conference Proceedings: (* means indexed in Web of Science)

1. Akcapinar K, Gurbuz O, **Ünlüyurt T**, "Optimal Power Control for Full Duplex Wireless Networks with Full Interference", International Balkan Conference on Communications and Networking, Tirana, Albania, May 31-June 2, 2017.

2. (*) Tozlu B, Daldal R, **Ünlüyurt T**, Çatay B," Crew constrained home care routing problem with time windows ", IEEE Symposium Series on Computational Intelligence (2015), USA: IEEE (Institute of Electrical and Electronics Engineers) 2015, 1751-1757

3. (*) Türker UC, **Ünlüyurt T**, Yenigün H, " Lookahead-based approaches for minimizing adaptive distinguishing sequences ", Merayo, Mercedes G. and Montes de Oca, Edgardo (eds.), 26th IFIP International Conference on Testing Software and Systems, Madrid: Springer Berlin Heidelberg, September 2014, 32-47

4. Allen SR, Hellerstein L, Kletenik D, **Ünlüyurt T**, " Evaluation of DNF formulas ", International Symposium on Artificial Intelligence and Mathematics (ISAIM 2014), Boca Raton, FL: Florida Atlantic University, January 2014

5. **Ünlüyurt T**, Tunçer Y," Estimating the performance of EMS location models via simulation ", 44th International Conference on Computers & Industrial Engineering (CIE'44) / 9th International Symposium on Intelligent Manufacturing & Service Systems (IMSS'14), Sakarya, Turkey: Sakarya Univesity 2014

6. (*) Işık G, **Ünlüyurt T**, " Sequential testing of 3-level deep series-parallel systems", IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), USA: IEEE (Institute of Electrical and Electronics Engineers), December 2013

7. **Ünlüyurt T**, Aydın C, "Rehandling strategies for container retrieval", 13th Euro Working Group on Transportation Meeting (EWGT2009), Padua, Italy: University of Padova, September 2009.

8. Başar A, Çatay B, **Ünlüyurt T**, "A new model and tabu search approach for planning the emergency service stations", Fleischmann, Bernhard and Borgwardt, Karl Heinz and Klein, Robert and Tuma, Axel (eds.), Annual International Conference of the German Operations Research Society, 2008, Berlin Heidelberg: Springer, August 2009, 41-46

9. (*) Çatay B, Ozluk O, **Ünlüyurt T**, An Ant Colony Algorithm for the Sequential Testing Problem under Precedence Constraints, IEEE International Conference on Service Operations and Logistics, and Informatics, IEEE/SOLI, 1800-1805, 2008.

10. (*) Bulbul K, Ercetin O, **Ünlüyurt T**, Delay Constrained Minimum Power Broadcasting in Wireless Networks, In: Proc. of 5th Intl. Symposium on Modeling and Optimization in Mobile, Ad Hoc, and *Wireless Networks (Wiopt), 1-9, 2007.*

11. (*) Tacettin M, **Ünlüyurt T**, An alternative proof that exact inference problem on Bayesian belief networks is NP-hard, *In: P. Yolum, T. Gungor, F. Gurgen, C. Ozturan, eds., Proc. of ISCIS 2005, LNCS 3733, 947-955, Istanbul, Turkey, 2005.*

12. **Ünlüyurt T**, Özdemir HM, Space allocation and location matching in container terminals, In: *A. Jaszkiewicz, M. Kaczmarek, J. Zak, M. Kubiak, eds., Advanced OR and AI Methods in Transportation, Proc. of 10th EWGT Meeting and 16th Mini-EURO Conference, 367-373, Poznan, Poland 2005.*

13. Aksu A, Erçetin Ö, **Ünlüyurt T**, Bülbül K, Kılıç K, Energy Efficient and Reliable Routing with Cooperative Diversity in Wireless Ad-hoc Networks, *In: T. Tuğcu, E. Gelenbe, M.U. Çağlayan, F. Alagöz, eds., Proc. of ISCIS 2005, Advances in Computer Science and Engineering Series, 339-348, 2005.*

14. Kundakçıoğlu ÖE, Bülbül K, **Ünlüyurt T**, Kılıç K, Erçetin Ö, Minimum Power Multicasting with Delay Bound Constraints in Ad Hoc Wireless Networks, *In: T. Tuğcu, E. Gelenbe, M.U. Çağlayan, F. Alagöz, eds., Proc. of ISCIS 2005, Advances in Computer Science and Engineering Series, 252-263, 2005.*

15. Lacksonen T, **Ünlüyurt T**, A global manufacturing system design project partnership, In: Electronic Proceedings of the 2003 ASEE/WFEO International Colloquium, American Society for Engineering Education.

16. Boros E, **Ünlüyurt T**, Diagnosing double regular systems, In: *Artificial Intelligence and Mathematics -- AIM'98, Electronic Proceedings of the Fifth International Symposium on Artificial Intelligence and Mathematics, January , 1998, E. Boros and R. Greiner, eds.*

Projects:

1. Researcher, Examination of Finite State Machine Specification Methods for Testing Functional Requirements of Digital Systems and the Development of New Heuristic Approaches, TUBITAK International, 114E921, 2015-2017.
2. Project Director, Two extensions of the Sequential Testing Problem: Jointly batching and sequencing tests and estimating the expected cost of testing strategies TUBITAK 1001 , 113M478 rogram. Budget: 154.250 TL, 2013-2016.
3. Researcher, Heuristics for generating short adaptive distinguishing sequences, TUBITAK 1002 program, 113E292. Budget: 16.500 TL, 2013-2014.
4. Project Director, Developing evacuation strategies in the case of a disaster, Projem İstanbul, İBB. Budget: 15.000 TL, 2007-2009.
5. Project Director, Optimization of marine transportation system of Istanbul, Projem İstanbul, İBB. Budget: 15.000 TL, 2007-2008.
6. Researcher, Decision support systems for waste collection, Projem İstanbul, İBB. Budget: 10.000 TL, 2006-2008.
7. Researcher, Planning the locations of emergency medical stations in Istanbul, Projem İstanbul, İBB. Budget: 10.000 TL, 2006-2007.
8. Researcher, Project Analysis and Development Methodology, September 2002-November 2003. (Supported by Logo Business Solutions)

Graduate Student Supervision:

1. Neda Tanoumand, MS, 2017, *A branch and price algorithm for resource constrained vehicle routing problem with time windows*.
2. Mohamad Reza Afgafh, MS, 2017, *A simulation analysis of different allocation and pricing policies for cloud computing service providers*.
3. Rebi Daldal (Gürsel Sönmez Research Awardee) MS, 2015, *Sequential testing of a series system in batches*.
4. Zahed Shahmoradi MS, 2015, *Fault localization of a series system when tests are unreliable.*
5. Başak Tozlu MS, 2015, *Modeling and analysis of a home care routing problem.*
6. Seyed Ahmad Hosseini, PhD, 2014. *Multi Period Multi Commodity Network Flows*. (co-advised with Güvenç Şahin)
7. Gürkan Işık MSc 2014, *Sequential testing of series parallel systems.*
8. Elif Özdemir, MS, 2011. *Testing Strategies for k out of n Systems under General Type Precedence Constraints.*
9. Yasir Tunçer, MS, 2011. *Estimating the Performance of EMS Location Models via Simulation*
10. Aydın Tanrıverdi, MS, 2008. *Testing Strategies for k out of n Systems under Forest Type Precedence Constraints.*
11. Ayfer Başar, MS, 2008. (Co-supervised with Bülent Çatay) *Planning of Emergency Medical Service Stations and Ambulances*
12. Mustafa Kümek, MS, 2007. *Ship Self Air Defense Analysis for Different Operation Conditions Using Simulation.*

13. Cenk Aydın, MS, 2006. *Improved Rehandling Strategies for Container Retrieval Process.*
14. Erhun Kundakçıoğlu, MS, 2004. *Sequential Classification via Sequential Testing.*
15. Hacı Murat Özdemir, MS, 2003. *Hierarchical Modeling and Analysis of Container Terminal Operations.*
16. Ekim Özaydın, MS, 2003. *Capacitated Vehicle Routing Problem with Time Windows.*
17. Öykü Oflezer, MS, 2002 (Co-supervised with Bülent Çatay). *Operations Reversal: An Investigation of Capacitated and Uncapacitated Models.*
18. Mustafa Tacettin, MS, 2002. *A Polynomial Transformation from Vertex Cover Problem to Exact Inference Problem.*
19. Ercüment Kenger (Boğaziçi University), MS, 2002. (Co-supervised with Gülay Barbarasoğlu). *Airline Rescheduling Operations: A Heuristic Approach.*

Presentations: (* presented by a co-author)

- Fault localization for series systems when tests are unreliable, IFORS 2017, Quebec City, Canada.
- Estimating the expected cost of function evaluation strategies, 16th International Conference on Operational Research, KOI 2016, Osijek, Croatia.
- A review of approximation algorithms for function evaluation problem, Computer Science and Engineering Seminar Series, Sabanci University, 2016.
- Ekip Kısıtlı Evde Sağlık Bakımı Rotalama Problemi, YAEM 2016, Yaşar University, İzmir, Turkey.
- Sequential Testing in Batches with Fixed Costs, Leuven University, Leuven Belgium, 2015. (Invited talk)
- Sequential Testing with fixed costs in batches, INFORMS 2015, Philedelphia, USA
- Seri sistemler için genelleştirilmiş sınama problem, YAEM 2015, METU Ankara, Turkey.
- Ozluk O, Selçuk B, Ünlüyurt T, Sequential Testing with Fixed Costs in Batches, IFORS 2014, Barcelona Spain.
- Tunçer Y, Ünlüyurt T, Estimating the Performance of EMS Location Models via Simulation, IFORS 2011, Melbourne, Australia, 2011.
- Ünlüyurt T, Özdemir E, Sequential Testing of k-out-of-n Systems under Precedence Constraints, INFORMS 2010, Austin, USA, 2010.
- Çatay B, Ozluk O, Ünlüyurt T, Sequential testing under precedence constraints, IFORS 2008, Sandton, South Africa, 2008.
- Aydin, C, Ünlüyurt, T., Improved Rehandling Strategies for Retrieving Containers from a Bay, INFORMS, Pittsburgh, PA, USA, November 2006.
- Ünlüyurt, T., Kundakcioglu, E., Bottom-Up Construction of Minimum Cost AND/OR Trees for Sequential Fault Diagnosis, INFORMS, San Francisco, CA, USA, November 2005.
- (*) Özaydın, E. and Ünlüyurt T., A Hybrid Heuristic for the Vehicle Routing Problem with Time Windows, EURO/INFORMS 2003, İstanbul, Turkey, July 2003.
- (*) Özdemir, H.E. and Ünlüyurt, T., A Hierarchical Model for Container Terminal Operations, EURO/INFORMS 2003, İstanbul, Turkey, July 2003.
- Oflezer, Ö, Çatay, B. and Ünlüyurt, T., Improving Operational Efficiency through Operations Reversal, IFORS 2002, Edinburgh, Scotland, July 2002.
- Ünlüyurt, T., Sequential Testing of Systems Consisting of Identical Systems and Huffman Coding, INFORMS National Meeting, Miami, FL, USA, November 2001.

- Ünlüyurt, T., Sequential Testing of Systems Consisting of Identical Systems and Huffman Coding, Koç University, Istanbul, Turkey, October 2001. (Invited talk)
- Boros, E. and Ünlüyurt, T.,Sequential Testing of Complex Systems, GERAD, Montreal, Canada, May 1999. (Invited talk)
- Boros, E. and Ünlüyurt, T., Diagnosis of Series-Parallel Systems, INFORMS National Meeting, Montreal, Canada, April 1998.
- Boros, E. and Ünlüyurt, T., Sequential Diagnosis of Double Regular Systems, Fifth International Symposium on Artificial Intelligence and Mathematics, Ft. Lauderdale, FL, USA, January 1998.
- Boros, E. and Ünlüyurt, T., Sequential Diagnosis of Double Regular Systems, INFORMS National Meeting, San Diego, CA, USA May 1997.

Teaching Experience:

Sabancı University
- Stochastic Processes, graduate.
- Simulation, graduate.
- Linear Programming and Extensions, graduate.
- Decision Economics, undergraduate.
- Simulation, undergraduate.
- Engineering Optimization, graduate.
- Network Flows and Graph Theory, graduate.
- Special Topics in IE (Optimization Problems in Sensor Networks)
- Deterministic Models in Operations Research, undergraduate.

Rutgers University
- Linear Programming, undergraduate.
- Operations Management, MBA.

Industrial Experience:

- Consultant to Okan University Teknopark (for a TEYDEB project for an automotive company.)
- Senior Transportation Analyst, TEMS Inc., MD, USA, July 1999-July 2000. Responsible for development of software that performs capacity analysis for a hub and spoke rail system consisting of 9 main lines.

Awards and Honors:

- TUBİTAK 2219 Yurt Dışı Doktora Sonrası Araştırma Bursu, Ağustos 2012-Şubat 2013, (for visiting Prof. Lisa Hellerstein at NYU Polytechnic Institute).
- DIMACS Summer Fellowship, Summers of 1996-1999.
- Excellence Fellowship, Rutgers University 1994-1996.
- Ranked first in the graduating class of 1994, Department of Industrial Engineering, Bilkent University.
- TUBITAK High Honour Scholarship, 1991-1994.
- Bilkent Scholarship, 1990-1994.
- VAKSA Fellowship, 1990-1994.

Administrative Duties:

- Accreditation coordinator, 2015-present.
- Advisor for students having difficulty to graduate.
- Gürsel Sönmez Research Award Committee coordinator, 2010-2011.
- Program Coordinator, 2003-2004, 2008-2011.
- Graduate advisor, 2014-2015.
- Undergraduate program advisor, 2002-2008.
- Curriculum committee, 2002-2003.
- Faculty Course Scheduling coordinator, 2001-2008.
- Program Coordinator, 2003-2004, 2008-2011.

Professional Activities:

- INFORMS member.
- Refereed various TEYDEB projects.
- Refereed for
- Annals of Mathematics and Artificial Intelligence, Discrete Mathematics, Discrete Applied Mathematics, European Journal of Operations Research , International Journal of Production Research , Naval Research Logistics, IEEE Transactions on Reliability, Annals of Operations Research, Journal of Scheduling, Production Planning and Control, Endüstri Mühendisliği, Journal of Electronic Testing: Theory and Applications, Computers & Industrial Engineering, Computers & Operations Research, Omega, IEEE Transactions on Mobile Computing, IIE Transactions, Artificial Intelligence, IEEE Transactions on Automation Science and Engineering, Central European Journal of Operations Research, Microelectronics Journal, Transportation Research Part E.