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## Kerem Bülbül

Sabancı University  
Faculty of Engineering and Natural Sciences  
Orhanlı, Tuzla, 34956 Istanbul, Turkey

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### Current Research Interests

- Modeling and Analysis of Scheduling Systems – with a recent emphasis on stochastic aspects
- Mathematical Programming and Computational Optimization – with an emphasis on novel methodological and practical aspects of decomposition methods
- Modeling and Optimization for Cloud Computing

### Education

UNIVERSITY OF CALIFORNIA, BERKELEY  
*Ph.D., Industrial Engineering and Operations Research* BERKELEY, CA  
08/2002

- Dissertation: *Just-In-Time Scheduling with Inventory Holding Costs*  
Advisors: Candace A. Yano  
Philip M. Kaminsky

- Minors: Applied Statistics, Management of Technology

UNIVERSITY OF CALIFORNIA, BERKELEY  
*M.S., Industrial Engineering and Operations Research* BERKELEY, CA  
12/1997

BOĞAZIÇI UNIVERSITY  
*B.S., Industrial Engineering* ISTANBUL, TURKEY  
06/1996

### Academic Experience

SABANCI UNIVERSITY  
*Associate Professor, Industrial Engineering* ISTANBUL, TURKEY  
04/2012 - present

SABANCI UNIVERSITY  
*Assistant Professor, Industrial Engineering* ISTANBUL, TURKEY  
09/2003 - 03/2012

UNIVERSITY OF CALIFORNIA, BERKELEY  
*Visiting Scholar, Dept. of Industrial Engineering & Operations Research* BERKELEY, CALIFORNIA  
06/2014 - 08/2014

THE OHIO STATE UNIVERSITY  
*Visiting Scholar, Department of Integrated Systems Engineering* COLUMBUS, OHIO  
02/2014 - 05/2014

## Industrial Experience

RAPT INC.

SAN FRANCISCO, CA

*Decision Engineer, Customer Implementation Services*

*09/2002 - 07/2003*

- Responsibilities included understanding customer business problems and framing them for analysis with Rapt products, interpreting major analytic results to customers, training key customers to understand and use Rapt products, identifying new features based on customer interaction for future releases, and validating new analytic functionality.

LAWRENCE BERKELEY NATIONAL LABS

BERKELEY, CA

*Graduate Student Researcher*

*06/1998 - 10/2000*

- Worked for the Human Genome Project. Documented and organized biological protocols. Developed shop floor scheduling methods for genome sequencing and built a database management system to track throughput, yield and rework.

HEWLETT PACKARD

SANTA CLARA, CA

*Graduate Student Researcher*

*07/1997 - 06/1998*

- Worked for the Wireless Infrastructure Division. Developed a factory simulation model to evaluate new shop floor dispatching rules.

## Consulting Experience

HITIT COMPUTER SERVICES

ISTANBUL, TURKEY

*05/2013-07/2013, 11/2013-03/2014*

- Assisted with the development of the airline crew planning and optimization offering.

MAPTRIKS

ISTANBUL, TURKEY

*04/2015-09/2015, 11/2015-04/2016*

- Helped the company (*i*) run statistical analyses on various problems from the retail sector, (*ii*) design the service location network for a satellite television provider.

## Honors

- Ph.D. student Halil Şen received the third prize in the Student Paper Competition at the 13th International Conference on Project Management and Scheduling (PMS 2012), Leuven, Belgium, 2012.
- Third prize, Student Research Presentation Competition, PRISMS Conference, Stanford, CA, 2002.
- First prize, 1st Annual Institute of Industrial Engineers (IIE) / Tefen Graduate Student Competition, IIE Conference, Phoenix, AZ, 1999.
- Ranked 1st among 75 in the department, 3rd among 412 in the College of Engineering, Boğaziçi University, Istanbul, Turkey, 1996.

## Published/Submitted Journal Papers

Bülbül, K., Kaminsky, P., and Yano, C. (2004). Flow Shop Scheduling with Earliness, Tardiness and Intermediate Inventory Holding Costs. *Naval Research Logistics*, 51(3):407-445.

<http://dx.doi.org/10.1002/nav.20000>

Bülbül, K., Kaminsky, P., and Yano, C. (2007). Preemption in Single Machine Earliness/Tardiness Scheduling. *Journal of Scheduling*, 10(4-5):271-292.

<http://dx.doi.org/10.1007/s10951-007-0028-6>

Bülbül, K. and Erçetin, Ö. (2007). Maximum Precision-Lifetime Curve for Joint Sensor Selection and Data Routing in Sensor Networks. *European Transactions on Telecommunications*, 18(7):815-823.

<http://dx.doi.org/10.1002/ett.1218>

Erçetin, Ö., Gürbüz, Ö., Bülbül, K., Çiftçioğlu, E.N., and Aksu, A. (2007). A Practical Routing and MAC Framework for Maximum Lifetime Sensor Telemetry. *IEICE Transactions on Communications*, E90-B(11):3146-3157.

<http://dx.doi.org/10.1093/ietcom/e90-b.11.3146>

Tekiner, H., Birbil, Ş.İ., and Bülbül, K. (2009). Robust Crew Pairing for Managing Extra Flights. *Computers & Operations Research*, 36(6):2031-2048.

<http://dx.doi.org/10.1016/j.cor.2008.07.005>

Bülbül, K., Erçetin, Ö., and Ünlüyurt, T. (2009). Hop Constrained Energy-Efficient Broadcasting: Insights from Massively Dense Ad Hoc Networks. *IEEE Transactions on Mobile Computing*, 8(2):188-202.

<http://dx.doi.org/10.1109/TMC.2008.105>

Çiftlikli, S., Öztoprak, F., Erçetin, Ö., and Bülbül, K. (2009). Distributed Algorithms for Delay Bounded Minimum Energy Wireless Broadcasting. *International Journal of Interdisciplinary Telecommunications and Networking*, 1(2):46-65. doi: 10.4018/jitn.2009040104.

<http://www.igi-global.com/bookstore/Article.aspx?TitleId=4044>

Bülbül, K. (2011). A Hybrid Shifting Bottleneck-Tabu Search Heuristic for the Job Shop Total Weighted Tardiness Problem. *Computers & Operations Research*, 38(6):967-983.

<http://dx.doi.org/10.1016/j.cor.2010.09.015>

Muter, İ., Birbil, Ş.İ., Bülbül, K., and Şahin, G. (2012). A Note on “A LP-Based Heuristic for a Time-Constrained Routing Problem.” *European Journal of Operational Research*, 221(2):306-307.

<http://dx.doi.org/10.1016/j.ejor.2012.03.048>

Muter, İ., Birbil, Ş.İ., Bülbül, K., Şahin, G., Yenigün, H., Taş, D., and Tüzün, D. (2013). Solving a Robust Airline Crew Pairing Problem with Column Generation. *Computers & Operations Research*, 40(3):815-830.

<http://dx.doi.org/10.1016/j.cor.2010.11.005>

Bülbül, K. and Kaminsky, P. (2013). A Linear Programming-Based Method for Job Shop Scheduling. *Journal of Scheduling*, 16(2):161-183.

<http://dx.doi.org/10.1007/s10951-012-0270-4>

- Muter, İ., Birbil, Ş.İ., and Bülbül, K. (2013). Simultaneous Column-and-Row Generation for Large-Scale Linear Programs with Column-Dependent-Rows. *Mathematical Programming*, 142(1-2):47-82.  
<http://dx.doi.org/10.1007/s10107-012-0561-8>
- Şen, H. and Bülbül, K. (2015). A Strong Preemptive Relaxation for Weighted Tardiness and Earliness/Tardiness Problems on Unrelated Parallel Machines. *INFORMS Journal on Computing*, 27(1):135-150.  
<http://dx.doi.org/10.1287/ijoc.2014.0615>
- Yelbay, B., Birbil, Ş.İ., and Bülbül, K. (2015). The Set Covering Problem Revisited: An Empirical Study of the Value of Dual Information. *Journal of Industrial and Management Optimization*, 11(2):575-594.  
<http://dx.doi.org/10.3934/jimo.2015.11.575>
- Birbil, Ş.İ., Bülbül, K., Frenk, J.B.G., and Mulder, H.M. (2015). On EOQ Cost Models with Arbitrary Purchase and Transportation Costs. *Journal of Industrial and Management Optimization*, 11(4):1211-1245.  
<http://dx.doi.org/10.3934/jimo.2015.11.1211>
- Yelbay, B., Birbil, Ş.İ., Bülbül, K., and Jamil, H.M. (2016). Approximating the Minimum Hub Cover Problem on Planar Graphs. *Optimization Letters*, 10(1):33-45.  
<http://dx.doi.org/10.1007/s11590-015-0876-5>
- Atakan, S., Bülbül, K., and Noyan, N. (2017). Minimizing Value-at-Risk in Single-Machine Scheduling. *Annals of Operations Research*, 248(1):25-73.  
<http://dx.doi.org/10.1007/s10479-016-2251-z>
- Bülbül, K. and Şen, H. (2017). An Exact Extended Formulation for the Unrelated Parallel Machine Total Weighted Completion Time Problem. *Journal of Scheduling*, 20(4):373-389.  
<http://dx.doi.org/10.1007/s10951-016-0485-x>
- Muter, İ., Birbil, Ş.İ., and Bülbül, K. (2018). Benders Decomposition and Column-and-Row Generation for Solving Large-Scale Linear Programs with Column-Dependent-Rows. *European Journal of Operational Research*, 264(1):29-45.  
<http://dx.doi.org/10.1016/j.ejor.2017.06.044>
- Yelbay, B., Birbil, Ş.İ., Bülbül, K., and Jamil, H.M. (2016). Trade-offs Computing Minimum Hub Cover toward Optimized Graph Query Processing. *Submitted for publication*.  
<http://arxiv.org/abs/1311.1626>
- Elçi, Ö., Noyan, N., and Bülbül, K. (2016). Chance-Constrained Stochastic Programming under Variable Reliability Levels with an Application to Humanitarian Relief Network Design. *Submitted for publication*.  
<http://research.sabanciuniv.edu/32880/>
- Yelbay, B., Birbil, Ş.İ., and Bülbül, K. (2017). Mathematical Programming Models Based on Hub Covers in Graph Query Processing. *Submitted for publication*.  
[http://www.optimization-online.org/DB\\_HTML/2014/11/4674.html](http://www.optimization-online.org/DB_HTML/2014/11/4674.html)
- Bülbül, K., Kedad-Sidhoum, S., and Şen, H. (2017). Single-Machine Common Due Date Total Earliness/Tardiness Scheduling with Machine Unavailability. *Submitted for publication*.  
[http://www.optimization-online.org/DB\\_HTML/2017/03/5906.html](http://www.optimization-online.org/DB_HTML/2017/03/5906.html)

Bürgy, R. and Bülbül, K. (2017). The Job Shop Scheduling Problem with Convex Costs. *Submitted for publication*.

[http://www.optimization-online.org/DB\\_HTML/2017/06/6107.html](http://www.optimization-online.org/DB_HTML/2017/06/6107.html)

## Refereed Conference Proceedings

Erçetin, Ö., Gürbüz, Ö., Bülbül, K., and Aksu, A. (2005). Joint Sensor Selection and Data Routing in Sensor Networks. *Networking 2005: Lecture Notes in Computer Science*, 3462: 828-839.

[http://dx.doi.org/10.1007/11422778\\_67](http://dx.doi.org/10.1007/11422778_67)

Bülbül, K. (2005). Job Shop Scheduling with Earliness, Tardiness and Intermediate Inventory Holding Costs. *Proceedings of the 2nd Multidisciplinary International Conference on Scheduling: Theory and Applications (MISTA 2005)*, 1:188-192.

<http://www.mistaconference.org/2005/proceedings.html>

Aksu, A., Erçetin, Ö., Ünlüyurt, T., Bülbül, K., and Kılıç, K. (2005). Energy Efficient and Reliable Routing with Cooperative Diversity in Wireless Ad-hoc Networks. *20th International Symposium on Computer and Information Sciences - ISCIS 2005, Advances in Computer Science and Engineering Series*, 339-348.

[http://dx.doi.org/10.1142/9781860947308\\_0033](http://dx.doi.org/10.1142/9781860947308_0033)

Kundakçioğlu, Ö.E., Bülbül, K., Ünlüyurt, T., Kılıç, K., and Erçetin, Ö. (2005). Minimum Power Multicasting with Delay Bound Constraints in Ad Hoc Wireless Networks. *20th International Symposium on Computer and Information Sciences - ISCIS 2005, Advances in Computer Science and Engineering Series*, 252-263.

[http://dx.doi.org/10.1142/9781860947308\\_0025](http://dx.doi.org/10.1142/9781860947308_0025)

Bülbül, K., Erçetin, Ö., and Ünlüyurt, T. (2007). Delay Constrained Minimum Power Broadcasting in Wireless Networks. *5th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt 2007)*, 1-9.

<http://dx.doi.org/10.1109/WIOPT.2007.4480041>

Çoban, E., Muter, İ., Taş, D., Birbil, Ş.İ., Bülbül, K., Şahin, G., Topçu, Y.İ., Tüzün, D., and Yenigün, H. (2008). Column Generation Approaches to a Robust Airline Crew Pairing Model for Managing Extra Flights. *Operations Research Proceedings 2008: Selected Papers of the Annual International Conference of the German Operations Research Society (GOR)*, 439-444.

<http://research.sabanciuniv.edu/13088/>

Şen, A. and Bülbül, K. (2008). A Survey On Multi-Trip Vehicle Routing Problem. *Proceedings of the VI. International Logistics & Supply Chain Congress*, 401-407.

<http://research.sabanciuniv.edu/13087/>

Atakan, S., Tezel, B., Bülbül, K., and Noyan, N. (2011). Minimizing Value-at-Risk in the Single-Machine Total Weighted Tardiness Problem. *Proceedings of the 5th Multidisciplinary International Conference on Scheduling: Theory and Applications (MISTA 2011)*, 215-229.

<http://www.schedulingconference.org/previous/publications/index.php?year=2011>

Mutlu, E., Birbil, Ş.İ., Bülbül, K., and Yenigün, H. (2011). High Level Rule Modeling Language for Airline Crew Pairing. *ICNAAM 2011: International Conference on Numerical Analysis and Applied Mathematics*, 1389:798-801.

<http://dx.doi.org/10.1063/1.3636853>

Şen, H. and Bülbül, K. (2012). A Simple, Fast, and Effective Heuristic for the Single-Machine Total Weighted Tardiness Problem. *13th International Conference on Project Management and Scheduling (PMS 2012)*, 282-286.

<http://www.econ.kuleuven.be/eng/tew/academic/prodbel/PMS2012/proceedings.pdf>

## Book Chapters

Bülbül, K., Ulusoy, G., and Şen, A. (2007). Classic Transportation Problems. *Logistics Engineering Handbook*, ed. Don. G. Taylor, CRC Press.

<http://research.sabanciuniv.edu/10849/>, or [go to the book's official web site](#).

Pamay, M.B., Bülbül, K., and Ulusoy, G. (2014). Dynamic Resource Constrained Multi-Project Scheduling Problem with Weighted Earliness/Tardiness Costs. *Essays in Production, Project Planning and Scheduling: A Festschrift in Honor of Salah Elmaghraby*, eds. P.S. Pulat, S.C. Sarin, R. Uzsoy, Springer Verlag.

<http://research.sabanciuniv.edu/23066/>, or [go to the book's official web site](#).

## Miscellaneous Publications

Instructor's Manual for

Simchi-Levi, D., Kaminsky, P., and Simchi-Levi, E. (2002). *Designing and Managing the Supply Chain*, 2nd Edition, McGraw-Hill/Irwin.

[Go to the book's web site on Amazon.com](#).

## Grants

*Decision Support Models for Waste Management.*

Istanbul Metropolitan Municipality, 01/2007 - 01/2009, 10,300 TL (\$8,000).

Researcher. Joint with Ş. İlker Birbil, Tonguç Ünlüyurt, Gürdal Ertek.

*Robust Airline Crew Pairing: Models, Solution Techniques and Applications.*

The Scientific and Technological Research Council of Turkey, 02/2007 - 02/2010, 188,150 TL (\$145,000).

Researcher. Joint with Ş. İlker Birbil, Hüsnü Yenigün, Dilek Tüzün, İlker Topçu.

*Dynamic Multi-Project Scheduling under Uncertainty.*

The Scientific and Technological Research Council of Turkey, 04/2010 - 07/2012, 143,360 TL (\$96,000).

Researcher. Joint with Gündüz Ulusoy, Ümit Bilge.

*Models and Algorithms for Risk Averse Machine Scheduling Problems.*

The Scientific and Technological Research Council of Turkey, 04/2013 - 04/2016, 173,495 TL (\$96,000).

Principal Investigator. Joint with Nilay Noyan.

## Conference Presentations, Invited Talks

*Preemption in Single Machine Earliness/Tardiness Scheduling.*

Joint work with P. Kaminsky and C. Yano.  
INFORMS Conference, Miami Beach, FL, 2001.

*m-Machine Flow Shop Earliness/Tardiness Problem With Intermediate Inventory Holding Costs.*

Joint work with P. Kaminsky and C. Yano.  
PRISMS Conference, Stanford, CA, 2002.

*Scheduling a Make-To-Order Manufacturing Supply Chain With Intermediate Inventory Holding Costs.*

Joint work with P. Kaminsky and C. Yano.  
INFORMS Conference, San Jose, CA, 2002. CORS/INFORMS Conference, Banff, AB, Canada, 2004.

*Challenges of Pricing Hard Disk Drives in a Competitive Market.*

Joint work with M. Goldbach and P. Dagum at Rapt Inc.  
EuroINFORMS Conference, Istanbul, Turkey, 2003.

*Just-In-Time Scheduling with Intermediate Inventory Holding Costs.*

Boğaziçi University, Istanbul, Turkey, 2004.

*Job Shop Scheduling with Earliness, Tardiness and Intermediate Inventory Holding Costs.*

INFORMS Conference, Denver, CO, 2004. MISTA Conference, New York, NY, 2005. INFORMS Conference, San Francisco, CA, 2005. INFORMS Conference, Pittsburgh, PA, 2006.

*Due Date Management in Single Stage Make-to-Order Systems with Lead Time Sensitive Customers.*

Joint work with A. Aydın.  
Euro Conference, Reykjavik, Iceland, 2006 (presented by A. Aydın).

*Delay Constrained Minimum Power Broadcasting in Wireless Networks.*

Joint work with Ö. Erçetin and T. Ünlüyurt.  
IBM T.J. Watson Research Center, Yorktown Heights, NY, 2005. UC Berkeley, Berkeley, CA, 2005. Koç University, Istanbul, Turkey, 2006. Sabancı University, Istanbul, Turkey, 2007. Boğaziçi University, Istanbul, Turkey, 2007. INFORMS Int'l Conference, San Juan, Puerto Rico, 2007. INFORMS Conference, Seattle, WA, 2007. Bilkent University, Ankara, Turkey, 2009.

*A Distributed Algorithm for Delay Bounded Minimum Energy Wireless Broadcasting.*

Joint work with S. Çiftlikli and Ö. Erçetin.  
INFORMS Telecommunications Conference, Washington, DC, 2008 (presented by Serkan Çiftlikli).

*Column Generation Approaches to a Robust Airline Crew Pairing Model for Managing Extra Flights.*

Joint work with E. Çoban, İ. Muter, D. Taş, Ş.İ. Birbil, G. Şahin, Y.İ. Topçu, D. Tüzün, and H. Yenigün.  
National Conference on Operations Research and Industrial Engineering (YA/EM 08), Istanbul, Turkey, 2008 (presented by E. Çoban). Operations Research 2008, Augsburg, Germany, 2008 (presented by Ş.İ. Birbil). INFORMS Conference, Washington, DC, 2008 (presented by G. Şahin). National Conference on Operations Research and Industrial Engineering (YA/EM 09), Ankara, Turkey, 2009 (presented by D. Taş). EURO Conference, Bonn, Germany, 2009 (presented by İ. Muter).

*Pricing in Column Generation for a Robust Airline Crew Pairing Problem.*

Joint work with D. Taş, E. Çoban, İ. Muter, Ş.İ. Birbil, G. Şahin, Y.İ. Topçu, D. Tüzün, and H. Yenigün. National Conference on Operations Research and Industrial Engineering (YA/EM 08), Istanbul, Turkey, 2008 (presented by D. Taş). Operations Research 2008, Augsburg, Germany, 2008 (presented by D. Taş). EURO Conference, Bonn, Germany, 2009 (presented by D. Taş).

*A Survey On Multi-Trip Vehicle Routing Problem.*

Joint work with A. Şen.

VI. International Logistics & Supply Chain Congress, Istanbul, Turkey, 2008 (presented by A. Şen).

*A Fast Heuristic for the Set Covering Problem.*

Joint work with B. Yelbay and Ş.İ. Birbil.

National Conference on Operations Research and Industrial Engineering (YA/EM 09), Ankara, Turkey, 2009 (presented by B. Yelbay).

*A Primal-Dual Local Search Heuristic for the Set Covering Problem.*

Joint work with B. Yelbay and Ş.İ. Birbil.

EURO Conference, Lisbon, Portugal, 2010 (presented by B. Yelbay). National Conference on Operations Research and Industrial Engineering (YA/EM 10), Istanbul, Turkey, 2010 (presented by B. Yelbay).

*Set Covering Problem: Primal-Dual Method.*

Joint work with B. Yelbay and Ş.İ. Birbil.

Wayne State University, Detroit, MI, 2012 (presented by B. Yelbay).

*Pricing by Local Search in Column Generation for the Airline Crew Pairing Problem.*

Joint work with N. Aksoy, Ş.İ. Birbil, and H. Yenigün.

EURO Conference, Lisbon, Portugal, 2010 (presented by N. Aksoy). National Conference on Operations Research and Industrial Engineering (YA/EM 10), Istanbul, Turkey, 2010 (presented by N. Aksoy).

*Simultaneous Column-and-Row Generation for Large-Scale Linear Programs with Column-Dependent-Rows.*

Joint work with İ. Muter and Ş.İ. Birbil.

National Conference on Operations Research and Industrial Engineering (YA/EM 10), Istanbul, Turkey, 2010 (presented by İ. Muter). INFORMS 2011 Midwestern Conference, Columbus, OH, 2011. Ohio State University, Columbus, OH, 2011. 21st International Symposium on Mathematical Programming (ISMP 2012), Berlin, Germany, 2012.

*A Simple, Fast, and Effective Heuristic for the Single-Machine Total Weighted Tardiness Problem.*

Joint work with H. Şen.

EURO Conference, Lisbon, Portugal, 2010 (presented by H. Şen). National Conference on Operations Research and Industrial Engineering (YA/EM 10), Istanbul, Turkey, 2010 (presented by H. Şen). Turkish Naval Academy, Istanbul, Turkey, 2012 (presented by H. Şen).

*A Preemption-Based Heuristic for the Single-Machine Generalized Total Weighted Tardiness Problem.*

Joint work with H. Şen.

13th International Conference on Project Management and Scheduling (PMS 2012), Leuven, Belgium, 2012 (presented by H. Şen). National Conference on Operations Research and Industrial Engineering (YA/EM 12), Istanbul, Turkey, 2012 (presented by H. Şen).

*A Hybrid Shifting Bottleneck-Tabu Search Heuristic for the Job Shop Total Weighted Tardiness Problem.*  
EURO Conference, Lisbon, Portugal, 2010. National Conference on Operations Research and Industrial Engineering (YA/EM 10), Istanbul, Turkey, 2010.

*An LP-Based General Method for Job Shop Scheduling with Intermediate Inventory Holding Costs.*  
Joint work with P. Kaminsky.  
INFORMS Conference, Austin, TX, 2010 (presented by P. Kaminsky).

*A Linear Programming Based Method for Resource Constrained Multi-Project Scheduling Problem with Weighted Earliness/Tardiness Costs.*  
Joint work with M.B. Pamay and G. Ulusoy.  
National Conference on Operations Research and Industrial Engineering (YA/EM 11), Sakarya, Turkey, 2011 (presented by M.B. Pamay).

*Dynamic Resource Constrained Multi-Project Scheduling Problem with Weighted Earliness/Tardiness Costs.*  
Joint work with M.B. Pamay and G. Ulusoy.  
International Conference on Industrial Engineering and Operations Management (IEOM 2012), Istanbul, Turkey, 2012 (presented by G. Ulusoy).

*High Level Rule Modeling Language for Airline Crew Pairing*  
Joint work with E. Mutlu, Ş.İ. Birbil, and H. Yenigün.  
Symposium on Computer Languages, Implementations and Tools (SCLIT 2011), Kassandra, Halkidiki, Greece, 2011 (presented by E. Mutlu).

Lecture on *Introduction to Computational Complexity & NP-Completeness*  
Summer School on Scheduling, Yalova, Turkey, 2011.

*Minimizing Value-at-Risk in the Single Machine Total Weighted Tardiness Problem.*  
Joint work with S. Atakan, B. Tezel, and N. Noyan.  
National Conference on Operations Research and Industrial Engineering (YA/EM 11), Sakarya, Turkey, 2011 (presented by S. Atakan). INFORMS 2011 Midwestern Conference, Columbus, OH, 2011 (presented by B. Tezel). MISTA Conference, Phoenix, AZ, 2011 (presented by S. Atakan).

*A Strong Preemptive Relaxation for Weighted Tardiness and Earliness/Tardiness Problems on Unrelated Parallel Machines.*  
Joint work with H. Şen.  
National Conference on Operations Research and Industrial Engineering (YA/EM 13) – joint with the IIE Conference, Istanbul, Turkey, 2013 (presented by H. Şen). EuroINFORMS Conference, Rome, Italy, 2013. Joint 2nd Workshop of the Turkish and Israeli Operations Research Societies, Tel Aviv, Israel, 2013.

*A Strong Preemptive Formulation for Minsum Scheduling on Unrelated Parallel Machines.*  
Joint work with H. Şen.  
The Ohio State University, Columbus, Ohio, 2014. University of Southern California, Los Angeles, CA, 2014. Sabancı University, Istanbul, Turkey, 2014. 22nd International Symposium on Mathematical Programming (ISMP 2015), Pittsburgh, PA, 2015. National Conference on Operations Research and Industrial Engineering (YA/EM 15), Ankara, Turkey, 2015. Istanbul Şehir University, Istanbul, Turkey, 2015.

*Minimizing Value-at-Risk in Single-Machine Scheduling.*

Joint work with S. Atakan and N. Noyan.

INFORMS Optimization Society Conference, Houston, TX, 2014. INFORMS Conference, San Francisco, CA, 2014.

*Single-Machine Earliness-Tardiness Scheduling with Periods of Machine Unavailability.*

Joint work with S. Kedad-Sidhoum and H. Şen.

IFORS Conference, Barcelona, Spain, 2014 (presented by S. Kedad-Sidhoum).

*Mathematical Programming Models and Relaxations for the Minimum Hub Cover Problem.*

Joint work with B. Yelbay and Ş.İ. Birbil.

IFORS Conference, Barcelona, Spain, 2014 (presented by B. Yelbay).

*Approximating the Minimum Hub Cover Problem on Planar Graphs and Its Application to Query Optimization.*

Joint work with B. Yelbay, Ş.İ. Birbil, and H.M. Jamil.

SIAM Conference on Optimization, San Diego, CA, 2014 (presented by B. Yelbay).

*Benders Decomposition and Column-and-Row Generation for Solving Large-Scale Linear Programs with Column-Dependent-Rows.*

Joint work with İ. Muter and Ş.İ. Birbil.

National Conference on Operations Research and Industrial Engineering (YA/EM 15), Ankara, Turkey, 2015 (presented by İ. Muter). INFORMS Conference, Nashville, TN, 2016.

*Chance-Constrained Stochastic Programming Under Variable Reliability Levels with an Application to Humanitarian Relief Network Design.*

Joint work with Özgün Elçi and Nilay Noyan.

INFORMS Conference, Nashville, TN, 2016 (presented by Ö. Elçi).

*On Job Shop Scheduling with Convex Costs and its Application to Just-in-Time Scheduling.*

Joint work Reinhard Bürgy.

IFORS Conference, Québec City, QC, Canada, 2017 (presented by R. Bürgy).

## Theses Supervised

*Warehouse Layout and Material Handling Planning at Brisa.*

Selçuk Öztürk, Master's Project in the Leaders for Industry Program at Sabancı University, co-advised with Can Akkan, September 2004 - February 2005.

*Joint Inventory and Pricing Decisions in Retail Industry.*

Özlem Bilginer, Master's Thesis, co-advised with Kemal Kılıç, August 2005.

*Due Date Quotation in Make-to-Order Systems with Lead Time Sensitive Customers.*

Ayhan Aydın, Master's Thesis, August 2006.

*Pricing in Column Generation for a Robust Airline Crew Pairing Problem.*

Duygu Taş, Master's Thesis, co-advised with Ş. İlker Birbil, August 2008.

*Column Generation Approaches to a Robust Airline Crew Pairing Model for Managing Extra Flights.*  
Elvin Çoban, Master's Thesis, co-advised with Ş. İlker Birbil, August 2008.

*Energy Efficient Broadcasting in Wireless Ad Hoc Networks.*  
Serkan Çiftlikli, Master's Thesis, co-advised with Özgür Erçetin, August 2008.

*Primal-Dual Heuristics for Solving the Set Covering Problem.*  
Belma Yelbay, Master's Thesis, co-advised with Ş. İlker Birbil, February 2010.

*A Simple, Fast, and Effective Heuristic for the Single-Machine Total Weighted Tardiness Problem.*  
Halil Şen, Master's Thesis, August 2010.

*Pricing by Local Search in Column Generation for the Airline Crew Pairing Problem.*  
Nimet Aksoy, Master's Thesis, co-advised with Ş. İlker Birbil and Hüsnü Yenigün, August 2010.

*High Level Rule Modeling Language for Airline Crew Pairing: Design and Implementation.*  
Erdal Mutlu, Master's Thesis, co-advised with Hüsnü Yenigün, February 2011.

*A Linear Programming Based Method for the Resource Constrained Multi-Project Scheduling Problem with Weighted Earliness/Tardiness Costs.*  
M. Berke Pamay, Master's Thesis, co-advised with Gündüz Ulusoy, August 2011.

*Minimizing Value-at-Risk in Single Machine Scheduling Problems.*  
Semih Atakan, Master's Thesis, co-advised with Nilay Noyan, August 2012.

*Minimum Hub Cover Problem: Solution Methods & Applications.*  
Belma Yelbay, Ph.D. Thesis, co-advised with Ş. İlker Birbil, August 2014.

*Cut Generation Based Algorithms for Unrelated Parallel Machine Scheduling Problems.*  
Halil Şen, Ph.D. Thesis, August 2015.

*Chance-Constrained Stochastic Programming Models for Humanitarian Relief Network Design.*  
Özgün Elçi, Master's Thesis, co-advised with Nilay Noyan, August 2016.

*Stochastic Programming Models for Provisioning Cloud Computing Resources.*  
Hazal Erol, Master's Thesis, August 2017.

## Courses

- PROJ 102 - Freshman Project
- IE 301 - Deterministic Models in Operations Research (sophomore)
- IE 302 - Stochastic Models in Operations Research (junior)
- IE 409 - Project Management (junior/senior)
- IE 411 - Modeling and Analysis of Large Systems (senior)
- ENS 491/492 - Senior Project

- IE 501 - Linear Programming and Extensions (master's)
- IE 550 - Sequencing & Scheduling (master's)
- IE 567 - Manufacturing Systems Modeling (master's)
- IE 580 - Optimization in Wireless Networks (master's)
- DA 507 - Modeling and Optimization (Data Analytics master's degree program for professionals)

### University Service

- Curriculum committee member, 11/2003 - 09/2005.
- Graduate advisor for the IE program, 04/2004 - 09/2008.
- Graduate orientation coordinator for the College of Engineering, 09/2004 - 09/2008.
- Ph.D. committee member, 11/2004 - 02/2008.
- Ph.D. committee coordinator, 02/2008 - 01/2014.
- Diploma area advisor, 02/2011 - 08/2012.
- Accreditation committee member, 08/2012 - 01/2014.
- Coordinator of the Industrial Engineering Program, 09/2014 - present.

### Professional Activities

- Referee for *Annals of Operations Research*, *Computers and Industrial Engineering*, *Computational Optimization and Applications*, *Computers & Operations Research*, *European Journal of Operational Research*, *IEEE Transactions on Automation Science and Engineering*, *IIE Transactions*, *INFORMS Journal on Computing*, *International Journal of Production Research*, *Journal of Computer Science and Technology*, *Journal of Scheduling*, *Mathematical Programming Computation*, *Naval Research Logistics*, *Operations Research*, *Optimization Letters*, *Pamukkale University Journal of Engineering Sciences*, *The Journal of the Operational Research Society*, *Transactions on Operational Research*, *Transportation Research Part E*, *Transportation Science*, *Wiley Encyclopedia of Operations Research and Management Science*, *ISCIS 2006*, *MASS 2007*, *WCNC 2008*, *IEOM 2012*, *The Scientific and Technological Research Council of Turkey*.
- Industry and Alumni Liaison, INFORMS, UC Berkeley Student Chapter, 2001.
- Panelist, *Industry Job Search For PhD's*, INFORMS Conference, San Jose, CA, 2002.
- Judge, Case Study Competition, PRISMS Conference, Berkeley, CA, 2003.
- Program committee member, 2nd Workshop on Competitiveness – Sustainability, Valuation and Innovation, organized by TÜSIAD-Sabancı University Competitiveness Forum, Istanbul, Turkey, 2006.

- Program committee member, National Conference on Operations Research and Industrial Engineering (YA/EM 10), organized by Sabancı University, Istanbul, Turkey, 2010.
- Member, Institute for Operations Research and the Management Sciences(INFORMS), 2000 - present.
- Member, Institute of Industrial Engineers (IIE), 1998-1999.
- Member, Mathematical Programming Society, 2009-2010, 2012-2013, 2015-2016.

## Computing Skills

- PROGRAMMING:  
C, Visual Basic, Perl, Pascal, SQL, SIMAN.
- SOFTWARE PACKAGES:  
Matlab, CPLEX, CPLEX Optimization Studio, AMPL, GAMS, SPSS, S-Plus, Arena, ProModel.
- PLATFORMS:  
Microsoft Azure Machine Learning Studio.