

ERHAN KUTANOGLU

Graduate Program in Operations Research and Industrial Engineering
Department of Mechanical Engineering, The University of Texas at Austin
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ACADEMIC POSITIONS

Assistant Professor August 2002 – Present
Department of Mechanical Engineering, University of Texas, Austin, TX

- As a tenure-track faculty member in the Operations Research and Industrial Engineering Graduate Program, develop and teach courses, develop research program, advise students, and serve on departmental and university committees

Assistant Professor August 1999 – August 2002
Department of Industrial Engineering, University of Arkansas, Fayetteville, AR

EDUCATION

Ph.D., Industrial Engineering February 1999
Lehigh University, Bethlehem, PA

- *Concentration*: Operations research, manufacturing logistics and scheduling, resource allocation, mathematical programming, distributed algorithms.
- *Dissertation*: “Distributed Resource Scheduling: Optimization Models, Equilibrium Conditions, and Incentive Compatible Mechanisms” (*Advisor*: Prof. S. David Wu)

M.S., Industrial Engineering January 1995
Bilkent University, Ankara, Turkey

- *Thesis*: “Job Shop Scheduling under Dynamic and Stochastic Manufacturing Environment” - Investigation of uncertain events on manufacturing system performance (*Advisor*: Prof. Ihsan Sabuncuoglu).

B.S., Industrial Engineering June 1992
Bilkent University, Ankara, Turkey

RESEARCH INTERESTS

- *Models and Algorithms for Distributed Decision Making*
- *Manufacturing and Service Logistics and Supply Chain Management*
- *Integer Programming and Large-Scale Industrial Optimization*
- *Game Theoretic Models for Combinatorial Optimization*
- *Service Parts Logistics*
- *Semiconductor Manufacturing*

AWARDS

- *NSF CAREER Award*, 2002-2007, NSF.
- *Summer Research Award*, 2004, The University of Texas at Austin.
- *Selected to the INFORMS Young Researcher Roundtable*, 2005.
- *Graduate Scholarship*, 1995-1999, Department of IMSE, Lehigh University.
- *Graduate Fellowship*, 1992-1995, Department of Industrial Engineering, Bilkent University.
- *Undergraduate Fellowship*, 1987-1992, Department of Industrial Engineering, Bilkent University.

RESEARCH GRANTS**The University of Texas at Austin**

- "CAREER: Analysis of Multi-dimensional Coordination Problems in Service Parts Logistics Systems" *Sponsor: NSF, Industry Collaborator: IBM, Funding: \$375,000 Dates: August 2002 – July 2007 (PI).*
- "Research Experience for Undergraduates (REU) Supplement for NSF CAREER Grant" *Grantor: NSF, Funding: \$12,000 Dates: August 2004 – July 2007 (PI).*
- "Semiconductor: Fab-wide Control and Disruption Management in High Volume Semiconductor Manufacturing" *Sponsor: NSF and SRC, Industry Collaborators: AMD, IBM, Intel, and SEMATECH. Funding: \$400,000 Dates: October 2004 – August 2007. (Co-PI, with J. Qin and J. Hasenbein).*
- "Scope of Scheduling in Semiconductor Manufacturing" (Unrestricted Gift Funding) *Sponsor and Collaborator: AMD, Current Funding: \$38,500 Dates: March 2005 – December 2005, Pending Funding: \$100,000 Dates: January - December 2006 (PI).*
- "Integrated Analysis of Transportation and Inventory in Intermodal Distribution Networks" *Sponsor: Mack-Blackwell Transportation Center, Total Funding: \$109,000, Match: \$55,000, Dates: August 2002 – December 2003 (PI, with S.J. Mason, Total UT Portion: \$27,000, UT Actual Dollars: \$13,200).*
- "Inventory Analysis for Navy Supply Command" *Sponsor: NAVSUP/TLL, Total Funding: \$50,000, Dates: August 2002 – December 2003 (Co-PI, with M.D. Rossetti, UT Portion: \$0).*

University of Arkansas

- "Performance and Uptime Analysis for Production Lines at Con Agra" *Sponsor: Con Agra / TLL, Funding: \$50,000 Dates: August 2001 – July 2002 (PI, with T.R. Collins, E. Fant).*
- "Modeling and Analysis of Transportation Flows Created by E-commerce Transactions" *Sponsor: MBTC, Industry Collaborator: ABF, Total Funding: \$134,647, Match: \$67,385, Dates: August 2000 – December 2001 (PI, with M.H. Cole and M.R. Bartolacci).*
- "Efficient Timing of Pick-up and Delivery Assignment Decisions Through Simulation and Optimization" *Sponsor MBTC, Total Funding: \$151,438, Match: \$80,000 Dates: August 2000 – December 2001 (PI, with G.D. Taylor).*
- "Efficient Dispatching in a Terminal City Network" *Sponsor: MBTC, Total Grant: \$115,920, Match: \$58,000 Dates: August 1999 – December 2000 (PI, with G.D. Taylor).*
- "Impact of Wireless Data Systems on the Transportation Systems of the Future" *Sponsor: MBTC, Total Grant: \$60,000, Match: \$30,000 Dates: August 2001 – June 2002 (Co-PI, with S.J. Mason).*
- "Review of COTS for Transportation and Logistics Planning" *Sponsor: Defense Logistics Agency / TLL, Funding: \$50,000 Dates: August 2000 – December 2001. (Co-PI, with M.D. Rossetti).*
- "Empty Container Management for Container-on-Barge Transportation" *Sponsor: MBTC, Total Funding: \$100,078, Match: \$50,308 Dates: August 1999 – December 2000 (Co-PI, with M.H. Cole).*
- "The Analysis of Inter-modal Choice Combinations and Pre-Positioning Strategies for Military Supplies and Materiel" *Sponsor: DLA / TLL, Total Funding: \$50,000 Dates: August 1999 – December 2000 (Co-PI, with M.D. Rossetti and T.R. Collins).*

STUDENT ADVISING**Ph.D. Dissertations, The University of Texas at Austin**

- Chair, *V. Jeet*, "Service Parts Logistics Network Design with Inventory Sharing and Part Commonality," Expected May 2006.
- Chair, *M.F. Candas*, "Integrated Network Design and Inventory Management in Service Parts Logistics with Time-based Constraints," Expected December 2006.

- Chair, *E. Zarifoglu*, "Planning, Scheduling and Dispatching in Semiconductor Manufacturing," Expected December 2007.
- Chair, *I. Iyooob*, "Multi-level Logistics Network Design with Inventory Management in Service Supply Chains," Expected December 2007.
- Chair, *M. Nehme*, "Proactive Planning and Scheduling in Semiconductor Manufacturing," Expected May 2008.
- Co-Chair, *Y. Cai*, "Managing Disruptions in Semiconductor Manufacturing," Expected May 2008 (Co-Chair: J. Qin).
- Co-Chair, *C. Schoen*, "Fab-wide Advanced Process Control in Semiconductor Manufacturing," Expected May 2008 (Co-Chair: J. Qin).

Ph.D. Dissertations, University of Arkansas

- Co-chair, *D. Tjokroamidjojo*, "Value of Advance Load Information in Truckload Transportation Planning," December 2002 (Co-chair: G.D. Taylor). (Currently at Logistics Software Company INFOR).

M.S. Reports, The University of Texas at Austin

- *T.C. Kraft*, Mechanical Engineering, Manufacturing Systems, "RadioShack De Mexico SKU Sourcing Analysis Using a (Q,R) Based Inventory Model," Spring 2005. (Currently at RadioShack).
- *B.K. Gandhi*, Operations Research and Industrial Engineering, "Taxonomy of Scheduling in Semiconductor Industry," Spring 2005. (Currently at Continental Airlines).
- *E.A. Bushey*, Operations Research and Industrial Engineering, "Analysis of the Market Strength of a Pivotal Supplier in a Deregulated Energy Market Using Optimization Models," Spring 2005.
- *P. Shrivastava*, Operations Research and Industrial Engineering, "Parallel Maching Scheduling Using Lagrangian Relaxation and Combinatorial Auction," Spring 2005 (Currently at Oracle).
- *S. Ozkan*, Operations Research and Industrial Engineering, "Base Configuration and Upgrade Pricing," Spring 2005. (Currently a Ph.D. Student in Economics).
- *M. Mahajan*, Operations Research and Industrial Engineering, "An Inventory Allocation Model for a Multi-location Service Parts Logistics Network," Fall 2004.
- *F. Tanrisever*, Operations Research and Industrial Engineering, "Job Formation and Scheduling in Semiconductor Manufacturing," Summer 2004 (Currently Ph.D. student at UT Business School).
- *D. Lohiya*, Mechanical Engineering, "An Integrated Inventory and Multi-Modal Transportation Model for Service Parts Logistics," Summer 2004 (Currently Management Consultant at Bearing Point).
- *J.W. Whitaker*, Mechanical Engineering, "Service Parts Logistic Network Optimization using Tabu Search," Spring 2004 (Currently at Baxter Planning Systems).
- *D. Pang*, Operations Research and Industrial Engineering, "Solving the Job Grouping and Scheduling Problem with Reactive Tabu Search," Spring 2004 (Currently working at Lenovo).
- *S. Ramanathan*, Operations Research and Industrial Engineering, "Estimating Service Levels in Inventory Sharing," Spring 2004.
- *C.J. Richards*, Operations Research and Industrial Engineering, "Addressing the Railroad Inspection Allocation Problem through Nonlinear Regression," Spring 2004.
- *A. Gonzalez Yunes*, Manufacturing Systems Engineering, "The effect of automation in the manufacturing industry: a special focus on information," Fall 2003.
- *N.V. Sukhavasi*, Operations Research and Industrial Engineering, "Inventory Management in Service Parts Logistics: Differentiating customers on the basis of delivery lead time," Fall 2003 (Currently at Caterpillar, Inc.).

- *J. Suresh*, Operations Research and Industrial Engineering, "Logistics Network Design with Product Redesign and Product Flexibility," Fall 2003 (Currently at Caterpillar, Inc.).
- *B.P. Ramalingam*, Operations Research and Industrial Engineering, "Incentive Alignment in Capacitated Supply Chains with Information Flows: Linear Contract Approach," Summer 2003.
- *K. Jayashankar*, Manufacturing Systems Engineering, "Analysis of Time Based Service Measures in Multi-Location Service Parts Logistics Systems with Inventory Transshipments," Summer 2003.
- *R. Phimolsarnti*, Manufacturing Systems Engineering, "A Problem Space Search Algorithm for Generalized Assignment Problems," Summer 2003.
- *S. Jatupornpakdee*, Manufacturing Systems Engineering, "Modeling Inventory Sharing in Logistics Systems," Summer 2003.
- *D. Adinarayana*, Manufacturing Systems Engineering, "Service Part Logistics: A Spreadsheet and Case Study Approach," Spring 2003.
- *S.S. Kumar*, Operations Research and Industrial Engineering, "Facility Location Models with Service Coverage Constraints and Uncertain Demand," Spring 2003.
- *S. Singh*, Manufacturing Systems Engineering, "A Study on Business Improvement," Spring 2003.
- *V. Tanuku*, Manufacturing Systems Engineering, "A Computational Investigation of Multi-Product Facility Location Problems," Spring 2003.

M.S. Theses, University of Arkansas

- *R. Ling*, Industrial Engineering, "A Scaling-Based Heuristic For Resource Constrained Project Scheduling Problems," June 2002.
- *W. Oon*, Industrial Engineering, "Multi-Echelon Logistics Network Design with Time-Based Service Constraints," May 2002.
- *Y. Ho*, Industrial Engineering, "Modeling the Effects of E-Commerce on Inter-Regional Transportation Flows," October 2001. (Currently at Transplace Inc.).
- *S. Lee*, Industrial Engineering, "Inventory Management with Location Interactions and Time-based Service Levels: A Simulation Study," September 2001 (Currently at UPS).

Ph.D. Committee Memberships

- K. McKinzie (Chair: J.W. Barnes, 2005)
- G.W. Kinney (Chair: J.W. Barnes, 2005)
- L. Wan (Chair: J. Bard, 2005)
- H.W. Purnomo (Chair: J. Bard, 2005)
- B.S. Dimova (Co-Chairs: J.W. Barnes and E. Popova, 2004)
- G.R. Lambert (Chair: J.W. Barnes, 2004)
- S. Rojanasoonthon (Chair: J. Bard, 2004)
- R. Billings (Chair: J. Hasenbein, 2003)
- J.M. Harwig (Chair: J.W. Barnes, 2003)
- Y. Wang (Co-Chairs: J. Bard and D. Morton)
- B. Sampath (Chair: J. Hasenbein)
- A. Kranthi Mitra (Chair: J. Hasenbein)
- N.E. Lownes (Chair: R.B. Machemehl)
- B. Sampath (Chair: J. Hasenbein)
- U. Yildirim (Chair: J. Hasenbein)
- B. Buke (Chairs: J. Hasenbein and D. Morton)
- F. Tovia (University of Arkansas, Chair: R. Cassady, 2004)
- N. Sortakul (University of Arkansas, Chair: R. Cassady, 2003)

M.S. Committee Memberships, The University of Texas at Austin

- A. Partani, Operations Research and Industrial Engineering, Fall 2005.
- K.M. Adusumilli, Operations Research and Industrial Engineering, Summer 2005.
- T.H. Meyer, Operations Research and Industrial Engineering, Spring 2005.
- D. Natarajan Mohan, Operations Research and Industrial Engineering, Spring 2005.
- K.R. Srinivasan, Operations Research and Industrial Engineering, Spring 2004.
- A. Sharma, Operations Research and Industrial Engineering, Fall 2003.
- C.K. Maddukuri, Operations Research and Industrial Engineering, Fall 2003.
- L. Ravi, Manufacturing Systems Engineering, Fall 2003.
- H. Lesmana, Operations Research and Industrial Engineering, Spring 2003.
- S.M. Kamdar, Operations Research and Industrial Engineering, Spring 2003.
- V. Kuriakose, Operations Research and Industrial Engineering, Spring 2003.
- F. Hamza, Operations Research and Industrial Engineering, Fall 2002.

M.S. Committee Memberships, University of Arkansas

- P.M. Ribera (2002, Chair: S.J. Mason)
- G. Skinner (2002, Chair: S.J. Mason)
- P. Qu (2002, Chair: S.J. Mason)
- D. Mettenburg (2002, Chair: M.D. Rossetti)
- K. Oey (2001, Chair: S.J. Mason)
- T.Z. Hau (2001, Chair: S.J. Mason)
- Y.S. Tee (2001, Chair: M.D. Rossetti)
- S.T. Choong (2000, Chair: M.H. Cole)
- H.R. Ural (2000, Chair: M. Cole)

PUBLICATIONS

Student names are
italicized

Book In Preparation

- **E. Kutanoglu** and H.A. Taha, "Integer Programming: Theory, Applications, and Computation."

Invited Book Chapter in Preparation

- **E. Kutanoglu**, Y. Cai, and J. Hasenbein, "Production Planning, Scheduling and Disruption Management," Expected Completion December 2006, *Handbook of Production Planning*, Editors: K. Kempf, P. Keskinocak, and R. Uzsoy.

Refereed Journal Papers, published or accepted for publication

1. M.F. Candas and **E. Kutanoglu** (2006) "Benefits of Considering Inventory in Service Parts Logistics Network Design Problems with Time-based Service Constraints," *To Appear in IIE Transactions*.
2. **E. Kutanoglu** and S.D. Wu (2006) "Incentive Compatible, Collaborative Production Scheduling with Simple Communication among Distributed Agents," *International Journal of Production Research*, Vol 44, No. 3, 421-446.
3. C.R. Cassady and **E. Kutanoglu** (2005) "Integrating Preventive Maintenance Planning and Production Scheduling for a Single Machine," *IEEE Transactions on Reliability*, Vol. 54, No. 2, 304-309.
4. **E. Kutanoglu** and S.D. Wu (2004), "Improving Schedule Robustness via Preprocessing and Dynamic Adaptation," *IIE Transactions*, Vol. 36, No. 11, 1107-1124.
5. C.R. Cassady and **E. Kutanoglu** (2003), "Minimizing Job Tardiness using Integrated Preventive Maintenance Planning and Production Scheduling," *IIE Transactions*, Vol. 35, No. 6, 503-513.
6. S. Choong, M.H. Cole, and **E. Kutanoglu** (2002), "Empty Container Management for Intermodal Transportation Networks," *Transportation Research - Part E*, Vol. 38, No. 6, 423-438.

7. **E. Kutanoglu** and I. Sabuncuoglu (2001), "Routing based reactive scheduling policies for machine failures in dynamic job shops," *International Journal of Production Research*, Vol. 39, No. 14, 3141–3158.
8. **E. Kutanoglu** and I. Sabuncuoglu (2001), "Experimental Investigation of Iterative Simulation-Based Scheduling in Dynamic and Stochastic Job Shops," *Journal of Manufacturing Systems*, Vol. 20, No. 4, 264–279.
9. **E. Kutanoglu** and S.D. Wu (1999), "On Combinatorial Auction and Lagrangean Relaxation for Distributed Resource Scheduling," *IIE Transactions*, Vol. 31, No. 9, 813–826.
10. **E. Kutanoglu** and I. Sabuncuoglu (1999), "An Analysis of Heuristics in a Dynamic Job Shop with Weighted Tardiness Objectives," *International Journal of Production Research*, Vol. 37, No. 1, 165–187.
11. *D. Tjokroamidjojo*, **E. Kutanoglu**, and G.D. Taylor (2005) "Quantifying the Value of Advance Load Information in Truckload Trucking," *To appear in Transportation Research, Part E*.
12. M.R. Bartolacci, **E. Kutanoglu**, and *A. Ho* (2004) "Modeling the Effects of E-Commerce Transactions on Inter-Regional Transportation Flows," *To appear in Journal of Business and Information Technology*.

Refereed Conference Proceedings, published or accepted

1. **E. Kutanoglu** and *D. Lohiya* (2005) "An Inventory and Multi-Modal Transportation Model for Service Parts Logistics," *Proceedings of 14th Industrial Engineering Research Conference*, IIE, Atlanta, GA.
2. **E. Kutanoglu**, *M.F. Candas*, and *V. Jeet* (2005) "Considering Stochastic Facility Response in Logistics Network Design Problems with Time Sensitive Service," *Proceedings of 14th Industrial Engineering Research Conference*, IIE, Atlanta, GA.
3. S.J. Mason, **E. Kutanoglu**, J.W. Fowler (2005) "Manufacturing and Logistics Applications of Multiple Orders Per Job Scheduling," *Proceedings of 14th Industrial Engineering Research Conference*, IIE, Atlanta, GA.
4. *F. Tanrisever*, **E. Kutanoglu**, and S.J. Mason (2004), "Forming and Scheduling Jobs from Multiple Orders with Different Attributes: A Computational Study of Special Cases," *Proceedings of 13th Industrial Engineering Research Conference*, IIE, Houston, TX.
5. *P. Qu*, S.J. Mason, **E. Kutanoglu** and J.W. Fowler (2004), "A Polynomial Time Heuristic for Scheduling Multiple-Order Jobs on a Single Machine," *Proceedings of 13th Industrial Engineering Research Conference*, IIE, Houston, TX.
6. *M.F. Candas* and **E. Kutanoglu** (2004) "Integrated Logistics Network Design and Inventory Stocking with Time-Based Service Levels," *Proceedings of 13th Industrial Engineering Research Conference*, IIE, Houston, TX.
7. *V. Jeet* and **E. Kutanoglu** (2004) "An Algorithm for Logistic Network Design Problems with Time-based Service Constraints," *Proceedings of 13th Industrial Engineering Research Conference*, IIE, Houston, TX.
8. *D. Tjokroamidjojo*, **E. Kutanoglu**, and G.D. Taylor (2004) "Advance Load Information Value in Transportation Logistics under Stochastic Conditions," *Proceedings of 13th Industrial Engineering Research Conference*, IIE, Houston, TX.
9. *R. Ling*, **E. Kutanoglu**, and S.J. Mason (2003) "Scaling-based Algorithms for Resource Constrained Project Scheduling Problems," *Proceedings of 12th Industrial Engineering Research Conference*, IIE, Portland, OR.
10. *F. Tovia*, C.R. Cassady, and **E. Kutanoglu** (2003), "Inventory Management through Information Sharing and Collaboration," *31st International Conference on Computers and Industrial Engineering*, San Francisco, California.
11. *F. Tovia*, **E. Kutanoglu**, and T. Collins (2002) "Throughput Analysis in a Frozen Food Processing Facility," *Proceedings of 11th Industrial Engineering Research Conference*, IIE, Orlando, FL.

12. W.C. Oon and E. Kutanoglu (2002) "Heuristics for Multi-Level Logistics Network Design Problems with Service Coverage Constraints," *Proceedings of 11th Industrial Engineering Research Conference*, IIE, Orlando, FL.
13. G.M. Magableh, S.J. Mason, and E. Kutanoglu (2002) "The Impact of Wireless Data Systems on Transportation Systems of the Future," *Proceedings of 11th Industrial Engineering Research Conference*, IIE, Orlando, FL.
14. P. Qu, S.J. Mason, and E. Kutanoglu (2001) "Scheduling jobs containing multiple orders," *Proceedings of International Conference on Modeling and Analysis of Semiconductor Manufacturing*, Phoenix, AZ.
15. E. Kutanoglu and S.D. Wu (2001), "Lagrangian Relaxation-Based Techniques for Job Shop Scheduling," *Proceedings of 10th Industrial Engineering Research Conference*, IIE, Dallas, TX.
16. M.H. Cole, H.R. Ural, and E. Kutanoglu (2001) "Design and Analysis of Dynamic Focused Storage Systems," *Progress in Material Handling Research: 2000*, Editors: R.J. Graves, L.F. McGinnis, M.K. Ogle, B.A. Peters, R.E. Ward, M.R. Whillhem, Material Handling Institute, Charlotte, NC, 78–83.
17. E. Kutanoglu and S.D. Wu (2000), "Schedule Selection Game: A Game-Theoretic Analysis for Incentive Compatible Scheduling," *Proceedings of 9th Industrial Engineering Research Conference*, IIE, Cleveland, OH.
18. E. Kutanoglu and I. Sabuncuoglu (1995), "An Investigation of Reactive Scheduling Policies under Machine Breakdowns," *Proceedings of 4th Industrial Engineering Research Conference*, IIE, Nashville, Tennessee, 1995.
19. E. Kutanoglu and I. Sabuncuoglu (1994), "Experimental Investigation of Scheduling Rules in a Dynamic Job Shop with Weighted Tardiness Costs," *Proceedings of 3rd Industrial Engineering Research Conference*, IIE, Atlanta, Georgia, 1994.

Submitted, In review, Under revision

1. S.J. Mason, P. Qu, E. Kutanoglu, and J.W. Fowler (2004) "The single machine multiple orders per job scheduling problem," *Submitted to IIE Transactions*, Revision 2.
2. F. Tanrisever, and E. Kutanoglu (2005) "Forming and Scheduling Jobs with Capacitated Constraints in Semiconductor Manufacturing: Single Machine Problem," *Submitted to Annals of Operations Research*.
3. V. Jeet and E. Kutanoglu (2005) "Lagrangian Relaxation Guided Problem Space Search Heuristics for the Generalized Assignment Problem," *Submitted to European Journal of Operational Research*, Revision 1.
4. S.J. Mason, G.M. Magableh, and E. Kutanoglu (2004) "The Impact of Wireless Data Systems on the Transportation Systems of the Future," *Submitted to International Journal of Production Distribution and Logistics Management*.

In Preparation for Journal Submission

1. V. Jeet and E. Kutanoglu "Low Demand Network Design with Inventory Stocking: Modeling and Optimization," *In final stages of preparation*.
2. M.F. Candas and E. Kutanoglu "Integrated Logistics Network Design and Inventory Management with Customer-centric Service Levels," *In final stages of preparation*.
3. V. Jeet and E. Kutanoglu "Effects of Part-commonality in Integrated Service Parts Logistics Network Design," *In preparation for Naval Research Logistics*.
4. E. Kutanoglu and S.D. Wu "A Computational Study of Coalitions in Cooperative Multi-Agent Production Scheduling," *In preparation for Production Planning and Control*.
5. F. Tanrisever and E. Kutanoglu "Forming and Scheduling Jobs with Order Weights in Semiconductor Manufacturing," *In preparation for Journal of Scheduling*.
6. S. Lee and E. Kutanoglu "Analysis of Inventory Sharing and Time-based Service Levels: A Simulation Study,"

7. **E. Kutanoglu** and S.D. Wu "Scaling-based Heuristics for Job Shop Scheduling under Deterministic and Stochastic Conditions," *In preparation for Computers and Operations Research*.
8. **E. Kutanoglu** and S.D. Wu "Proactive Equilibrium: A New Equilibrium Concept for Distributed Resource Scheduling,"
9. **E. Kutanoglu** and M.C. Booth "Application of a large scale network design model: A case study in service parts logistics,"
10. **E. Kutanoglu** and R. Ling "A Scaling-based Heuristic for Resource-Constrained Project Scheduling Problems,"

Non-refereed Conference Proceedings and Poster Sessions

- **E. Kutanoglu** (2005) "CAREER: Analysis of Multi-dimensional Coordination Problems in Service Parts Logistics," *Proceedings of NSF Design, Manufacturing, and Service Grantees and Research Conference*, Scottsdale, AZ.
- **E. Kutanoglu** (2004) "CAREER: Analysis of Multi-dimensional Coordination Problems in Service Parts Logistics," *Proceedings of NSF Design, Manufacturing, and Service Grantees and Research Conference*, Dallas, TX.
- **E. Kutanoglu** (2003) "CAREER: Analysis of Multi-dimensional Coordination Problems in Service Parts Logistics," *Proceedings of NSF Design, Manufacturing, and Service Grantees and Research Conference*, Edited by R.G. Reddy, Pages 859–893, Birmingham, AL.

Theses, Dissertations, and Working Papers

- "Integrated Analysis of Transportation and Inventory in Intermodal Distribution Networks" with S.J. Mason, MBTC Final Report, December 2003.
- "Modeling and Analysis of Transportation Flows Created by E-commerce Transactions" with M.R. Bartolacci, MBTC Final Report, 2002.
- "Efficient Timing of Pick-up and Delivery Assignment Decisions Through Simulation and Optimization" with D. Tjokroamidjojo, MBTC Final Report, 2002.
- "Impact of Wireless Data Systems on the Transportation Systems of the Future" with S.J. Mason and G.M. Magableh, MBTC Final Report, 2002.
- "Stock Positioning for Personal Equipment and Spare Parts Inventory in Military Logistical Systems," with M.D. Rossetti, N. Sloan, and Y. Tee, Working Paper, TLI/DLA, 2002.
- "Empty Container Management for Container-on-Barge (COB) Transportation," with M.C. Cole, S.T. Choong, MBTC Final Report, 2001.
- "Efficient Dispatching in a Terminal City Network," with G.D. Taylor and D. Tjokroamidjojo, MBTC Final Report, 2001.
- "The Analysis of Inter-modal Choice Combinations and Pre-positioning Strategies for Military Supplies and Materiel," with M.D. Rossetti, T.R. Collins, N. Sloan, Y. Tee, and M. Chow, Working Paper, TLI/DLA, 2000.
- "Distributed Resource Scheduling: Optimization Models, Equilibrium Conditions, and Incentive Compatible Mechanisms," *Ph.D. Dissertation*, Department of Industrial and Systems Engineering, Lehigh University, Bethlehem, PA, 1999.
- "Job Shop Scheduling under Dynamic and Stochastic Manufacturing Environments," *M.S. Thesis*, Department of Industrial Engineering, Bilkent University, Ankara, Turkey, 1995.

**INVITED
PRESENTATIONS**
Presented by the first
name in the listing
Excluding the conference
papers

1. *M.F. Candas*, and **E. Kutanoglu** (2006) "Integrated Logistics Network Design and Inventory Management in Service Parts Logistics," Fifth Annual Florida Supply Chain Conference, Gainesville, FL. (Presentation given by M.F. Candas to accept a Dissertation Support Award organized by Supply Chain and Logistics Engineering Center at the University of Florida).
2. *F. Tanrisever*, and **E. Kutanoglu** (2005) "Job Formation and Scheduling in Semiconductor Manufacturing," INFORMS Annual Meeting, San Francisco, CA.
3. *Y. Cai*, **E. Kutanoglu**, and *J. Hasenbein* (2005) "Optimization-based Semiconductor Manufacturing Scheduling," INFORMS Annual Meeting, San Francisco, CA.
4. *B. Bregenzler*, **E. Kutanoglu**, *J. Hasenbein*, and *J. Qin* (2005) "Scheduling Practice in Semiconductor Manufacturing: Results of a Comprehensive Survey," INFORMS Annual Meeting, San Francisco, CA.
5. *V. Jeet*, **E. Kutanoglu**, and *A. Partani* (2005) "Solution Techniques of an Integrated Location, Allocation and Inventory Model," INFORMS Annual Meeting, San Francisco, CA.
6. **E. Kutanoglu** and *F. Tanrisever* (2005) "Forming and Scheduling Jobs with Order Weights in Semiconductor Manufacturing," *2nd Multidisciplinary International Conference on Scheduling: Theory and Applications*, MISTA 2005, New York, NY.
7. *J. Fowler*, **E. Kutanoglu**, and *S.J. Mason* (2005) "Multiple Orders per Job Scheduling Problems," *2nd Multidisciplinary International Conference on Scheduling: Theory and Applications*, MISTA 2005, New York, NY.
8. *V. Jeet* and **E. Kutanoglu** (2005) "Logistics Network Design with Inventory Stocking, Time-based Service Allocation, and Part Commonality," Fourth Annual Florida Supply Chain Conference, Cocoa Beach, FL. (Presentation given by V. Jeet to accept his First Prize in the Dissertation Support Award organized by Supply Chain and Logistics Engineering Center at the University of Florida).
9. *M.F. Candas* and **E. Kutanoglu** (2004) "Considering Inventory in Service Parts Logistics Network Design Problems with Time-based Service Constraints," INFORMS Annual Meeting, Denver, CO.
10. *V. Jeet* and **E. Kutanoglu** (2004) "Effects of Part-commonality in Integrated Service Parts Logistics Network Design," INFORMS Annual Meeting, Denver, CO.
11. **E. Kutanoglu**, *J.W. Whitaker*, and *W. Barnes* (2004) "Multi-Echelon Logistics Network Design with Time-Based Service Coverage Constraints," INFORMS Annual Meeting, Denver, CO.
12. **E. Kutanoglu** and *F. Tanrisever* (2004) "Job Formation and Scheduling Problem with Capacitated Containers," INFORMS Annual Meeting, Denver, CO.
13. **E. Kutanoglu** and *S.D. Wu* (2002) "Distributed Scheduling, Mechanism Design, and Optimization," INFORMS Annual Meeting, San Jose, CA.
14. **E. Kutanoglu** (2002) "Analysis of Multi-dimensional Coordination Problems in Service Parts Logistics," Invited Talk, INFORMS Austin Professional Chapter Seminar, Austin, TX.
15. **E. Kutanoglu** (2002) "Analysis of Multi-dimensional Coordination Problems in Service Parts Logistics," Invited Talk, Graduate Seminar Series, Bilkent University, Ankara, Turkey.
16. **E. Kutanoglu** (2002) "Analysis of Multi-dimensional Coordination Problems in Service Parts Logistics," Invited Talk, Graduate Seminar Series, The University of Texas at Austin.
17. **E. Kutanoglu** and *S.K. Lee* (2001) "Inventory Management with Location Interactions in Service Parts Supply Chains," INFORMS Annual Meeting, Miami Beach, FL, November 2001.
18. **E. Kutanoglu** (2001) "Distributed Resource Scheduling via Complex Auctions," INFORMS International Meeting, Maui, Hawaii.

19. **E. Kutanoglu**, C.R. Cassady and S.J. Mason (2001) "An Analysis of Integrating Production Scheduling and Preventive Maintenance Planning Decisions," INFORMS International Meeting, Maui, Hawaii.
20. C. Ma, **E. Kutanoglu**, and M.C. Booth (2000) "Customer Delivery Time Sensitive Inventory Network Design," INFORMS Fall Meeting, San Antonio, TX.
21. *D. Tjokroamidjojo*, **E. Kutanoglu**, and G.D. Taylor (2000) "Efficient and Regularized Routing/Dispatching in a Terminal City Network," INFORMS Fall Meeting, San Antonio, TX.
22. **E. Kutanoglu**, M.H. Cole, and *S.T. Choong* (2000) "Empty Container Management for Container-on-Barge Transportation," INFORMS Fall Meeting, San Antonio, TX.
23. **E. Kutanoglu**, and *W. Oon* (2000) "Design of Multi-Echelon Distribution Networks with Service Level Constraints," INFORMS Fall Meeting, San Antonio, TX.
24. **E. Kutanoglu** (2000) "Modeling and Analysis of Transportation Flows Created by E-commerce Transactions," Mack-Blackwell Transportation Center Board Meeting, Fayetteville, AR.
25. **E. Kutanoglu** (2000) "Improving Schedule Robustness via Stochastic Analysis and Dynamic Adaptation," Invited talk, Graduate Seminar Series, Bilkent University, Ankara, Turkey.
26. **E. Kutanoglu** and S.D. Wu (2000) "Incentive Compatible Distributed Scheduling," 21st National Operations Research and Industrial Engineering Conference, Fagamusta, Cyprus.
27. **E. Kutanoglu** and S.D. Wu (1999) "Proactive Equilibrium for Distributed Job Shop Scheduling", INFORMS Fall Meeting, Philadelphia, PA.
28. **E. Kutanoglu** and S.D. Wu (1999) "Improving Schedule Robustness via Stochastic Analysis and Dynamic Adaptation", INFORMS Spring Meeting, Cincinnati, OH.
29. **E. Kutanoglu** (1999) "Distributed Resource Scheduling: Optimization Models, Equilibrium Conditions, and Incentive Compatible Mechanisms," Graduate Seminar Series, Department of Mechanical Engineering, University of Minnesota.
30. **E. Kutanoglu** (1999) "Distributed Resource Scheduling: Optimization Models, Equilibrium Conditions, and Incentive Compatible Mechanisms," Graduate Seminar Series, Department of Industrial Engineering, University of Arkansas.
31. **E. Kutanoglu** (1999) "Distributed Resource Scheduling: Optimization Models, Equilibrium Conditions, and Incentive Compatible Mechanisms," Graduate Seminar Series, Department of Industrial and Manufacturing Systems Engineering, Lehigh University.
32. **E. Kutanoglu** and S.D. Wu (1998) "Distributed Resource Scheduling Using a Lagrangean-based Decomposition," INFORMS Spring Meeting, Montreal, Canada.
33. S.D. Wu and **E. Kutanoglu** (1997) "Distributed Resource Scheduling Using Auction and Lagrangean Relaxation," INFORMS Fall Meeting, Dallas, TX.
34. **E. Kutanoglu**, J. Bustos and K. Zeithammer (1996) "Simulation Modeling at Bethforge, Inc.," Engineering Research for Industry Symposium, Society of Manufacturing Engineers, Lehigh University, Bethlehem, PA.
35. **E. Kutanoglu** and I. Sabuncuoglu (1994) "Reactive Scheduling Policies against Machine Breakdowns in Dynamic Job Shops," 16th National OR/IE Conference, Ankara, Turkey (in Turkish).
36. **E. Kutanoglu** and I. Sabuncuoglu (1994) "Computational Testing of Weighted Tardiness Priority Rules in Dynamic Job Shop Setting," 16th National OR/IE Conference, Ankara, Turkey (in Turkish).
37. V. Verter, A. Atamturk, S. Hosten, **E. Kutanoglu** (1991) "Practical Studies in Mainstream OR Journals in 1985–1991," 14th National OR/IE Conference, Istanbul, Turkey (in Turkish).

TEACHING INTERESTS

Operations Research	Integer Programming
Production and Inventory Control	Logistics
Supply Chain Management	Operations Management
Sequencing and Scheduling	Combinatorial Optimization
Engineering Economic Analysis	Production Engineering Management

TEACHING EXPERIENCE**The University of Texas at Austin**

ORI391Q.4 Integer Programming Fall 2004, Fall 2005
 Graduate level integer programming and combinatorial optimization. Core course in Graduate Program in Operations Research and Industrial Engineering.

ORI390R.14 Scheduling Theory and Applications Fall 2005
 Graduate level scheduling course with emphasis on mathematical models and their applications.

ORI390Q.2 - Production and Inventory Control Fall 2002, Fall 2003, Fall 2004, Spring 2006
 Production planning and inventory management course for graduate OR, IE and MSE students. *Contents:* Forecasting, Inventory Management with Deterministic and Stochastic Demand, MRP, JIT, Variability, Scheduling, Aggregate Planning.

ME397 - Modeling and Analysis of Manufacturing and Service Enterprises Spring 2003
 Specialized course for graduate students in the Manufacturing and Decisions Systems Engineering program.

ME375K - Production Engineering Management Spring 2004
 Tech-elective course for senior undergraduate engineering students on production planning, scheduling, inventory control and production line analysis.

ME353 - Engineering Economic Analysis Fall 2003, Spring 2005
 Engineering economics for junior and senior undergraduate engineering students.

University of Arkansas

INEG5623 - Analysis of Inventory Systems Spring 2001, Spring 2002
 Deterministic Demand, Time-varying Demand, Single-Item Stochastic Demand, Multi-Item Multi-location Inventory Management. (Graduate)

INEG5633 - Integer Programming and Combinatorial Analysis Fall 2001
 Modeling, Software Applications for Optimization, AMPL, Heuristics, Branch and Bound Algorithm, Relaxation, Lagrangian Relaxation, Cutting Planes, Column Generation. (Graduate)

INEG5843 - Sequencing and Scheduling Fall 2000
 Single machine sequencing, Parallel machine scheduling, Flow and job shop scheduling, airline scheduling. (Graduate)

INEG4553 - Production Planning and Control Spring 2000, Spring 2001, Spring 2002
 Senior level IE course. Inventory Management, MRP, JIT, Variability, Scheduling, Aggregate and Workforce Planning. (Undergraduate)

INEG 4333 - Industrial Statistics Fall 1999, Fall 2000, Fall 2001
 Intermediate level statistics to junior engineering students. Statistical Inference, Regression, Experimental Design, Statistical Quality Control. (Undergraduate)

Lehigh University, Bethlehem, PA

Instructor, IE122 - Software Tools Spring 1998
 Teach introductory course on software tools to sophomore engineering students.

Bilkent University, Ankara, Turkey
Teaching Assistant, Simulation Spring 1993, Spring 1994
Teaching Assistant, Cost Analysis and Control Fall 1993

**COMMITTEE
 INVOLVEMENT
 and SERVICE**

The University of Texas at Austin

- Graduate Student Recruiter, Graduate Program in Operations Research and Industrial Engineering, 2004-Present
- Member, Graduate Recruitment Committee, Department of Mechanical Engineering, 2002-Present
- Faculty advisor, Society of Manufacturing Engineers, UT Austin Student Chapter, 2003-Present
- Member, Graduate Studies Committee, OR/IE Graduate Program, 2002-Present
- Member, Graduate Studies Committee, ME Graduate Program, 2002-Present
- Assistant Graduate Advisor, M.S. Program in Manufacturing Systems Engineering, 2002-Present
- Minority Liaison Officer, Manufacturing Systems Engineering, 2002-Present
- Member, Graduate School Outstanding Thesis/Report Award Committee, 2006.
- Organizer and Coordinator, ORIE Graduate Seminar Series, Spring 2004, Spring 2005, Spring 2006.

University of Arkansas

- Chair of Ad-hoc Web Committee, 2001-2002, Department of Industrial Engineering
- Member of Equipment Committee, 2001-2002, Department of Industrial Engineering
- Member of Scholarship Committee, 1999-2000, Department of Industrial Engineering
- Member of Graduate Studies Committee, 2000-2002, Department of Industrial Engineering, University of Arkansas
- Member of College Computer Committee, 2000-2002, College of Engineering
- Member of College Web Committee, 2001-2002, College of Engineering

**EDITORIAL
 ACTIVITIES
 and REFEREEING**

- NSF Panel Reviewer, 2004, 2005.
- Member of the Editorial Board, IIE Transactions.
- Technical Reviewer
 - Operations Research
 - Naval Research Logistics
 - Management Science
 - IIE Transactions
 - European Journal of Operational Research
 - International Journal of Production Research
 - International Journal of Production Economics
 - Journal of Scheduling
 - Journal of Manufacturing Systems
 - Computers and Industrial Engineering
 - OMEGA, Journal of Management Science
 - Transportation Research Part E: Logistics and Transportation Review
 - IEEE Transactions on Systems, Man, and Cybernetics

- IEEE Transactions on Robotics and Automation
- Automatica
- IE Research Conference Proceedings, Cleveland 2000, Dallas 2001, Orlando 2002, Portland 2003, Houston 2004, Atlanta 2005.
- INFORMS MSOM Conference Proceedings, Atlanta 2006.

CONFERENCE ORGANIZATION

- Panelist, New Faculty Colloquium, IIE Research Conference, Atlanta, 2005.
- Panelist, Doctoral Student Colloquium, IIE Research Conference, Houston, 2004.
- Invited Track Organizer, Operations Research Track, IIE Research Conference, Houston 2004.
- Invited Session Organizer and Chair, INFORMS Meeting, Montreal 1998, San Antonio 2000, Miami 2001, San Jose 2002, Denver 2004.
- Invited Session Organizer and Chair, IIE Research Conference, Cleveland 2000, Dallas 2001, Portland 2003, Houston 2004, Orlando 2006.
- Session Chair, IIE Research Conference, Orlando 2002.
- Session Facilitator, 1997 NSF Workshop on Manufacturing Logistics, Lehigh University.

MEMBERSHIPS and PROFESSIONAL SOCIETY SERVICES

- *Senior Member*, Institute of Industrial Engineers (IIE).
- *Director*, OR Division, IIE (Term 2005-2007).
- *Teaching Award Coordinator*, 2005-2006, OR Division, IIE.
- *Member*, Institute for Operations Research and Management Science (INFORMS).
- *Member*, Manufacturing and Service Operations Management (MSOM) Society of INFORMS
- *Member*, Transportation and Logistics Section of INFORMS
- *Member*, Society of Manufacturing Engineers (SME).
- *Member*, American Society for Engineering Education (ASEE).
- *Member*, Turkish OR/IE Society.

PREVIOUS ACADEMIC EXPERIENCE

Research Assistant January 1995 – February 1999
 Manufacturing Logistics Institute, Lehigh University, Bethlehem, PA

- Member of a research team from Lehigh University and the University of Pennsylvania on a NSF funded project “Distributed Decision Framework Integrating Manufacturing Planning and Multiple Supply Chain Management.” Industry partners are Lucent Technologies and Ford Motor Company.
- Team member on a NSF funded project “Extracting Critical Decisions for Robust and Adaptable Production Planning and Control.” The project is jointly sponsored by Bethlehem Steel Corp.

Research Assistant 1992 – 1995
 Bilkent University, Ankara, Turkey

Developed and tested simulation-based scheduling algorithms for dynamic and stochastic manufacturing systems. Investigated different reactive scheduling policies.

**PROFESSIONAL
EXPERIENCE**

Consultant for IBM August 1999 – August 2002
Provide engineering and development support for Service Parts Solutions Group, PSS/Global Services Division of IBM. Develop OR models for supply chain optimization.

Short Course on Introduction to Supply Chain Optimization May 2002
Developed a 1-day short course on supply chain optimization with a partner for attendees of the Center for Engineering Logistics and Distribution (CELDi) Spring Meeting in Fayetteville, AR. The attendees included upper-level managers and planners from transportation and manufacturing companies.

Consultant for Tyson Foods Fall 2000 – August 2002
Developed a 2-day short course on Forecasting. Have been training the planners and forecasting personnel at Tyson Foods as a part of a 3-person team.

OR Analyst and Strategy Development Engineer February 1999 – August 1999
Service Parts Solutions, PSS / Global Services Division, IBM, Mechanicsburg, PA
Assisted in developing a strategic decision support tool based on an OR model for the multi-echelon network design, inventory stocking and distribution decisions. Developed scalable techniques for large-scale OR models for network design and inventory stocking problems, and implemented the first-phase of a long-term restructuring project.

Summer Intern Summer 1990, Summer 1991
Meteksan AS (a leading company in paper and pulp industry in Turkey), Ankara, Turkey
Yapi Kredi AS (a leading bank in Turkey), Ankara, Turkey
Tofas AS (the biggest auto manufacturer in Turkey), Bursa, Turkey

**PROFESSIONAL
DEVELOPMENT**

Workshops Attended

- New Faculty Teaching and Orientation Seminar, Austin, The University of Texas at Austin, August 2002.
- Teaching Effectiveness Colloquium, INFORMS Meeting, Miami Beach, November 2001.
- Institute of Mathematics and its Applications (IMA) Workshop, Mathematics of the Internet: E-Auction and Markets, University of Minnesota, December 2000.
- NSF Workshop on Manufacturing Logistics, Lehigh University, 1997.

Technical Conferences Attended

- IIE Industrial Engineering Research Conference, 2000, 2001, 2002, 2003, 2004, 2005.
- INFORMS International Meeting, Hawaii, 2001
- INFORMS Annual Meetings, 1997, 1998, 1999, 2000, 2001, 2002, 2004, 2005.
- MISTA Conference, 2005.

REFERENCES

Available upon request