
Curriculum Vitae

SADAN KULTUREL

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PROFESSIONAL PREPARATION

Ph.D. Industrial and Systems Engineering

Auburn University

May 2002

M.S. Industrial Engineering

University of Pittsburgh

Aug 1999

M.S. Industrial Engineering

Middle East Technical University, Ankara, Turkey

May 1996

B.S. Industrial Engineering

Gazi University, Ankara, Turkey

Jul 1993

TEACHING INTERESTS

Project Management, Applied Probability and Statistics, Management Information Systems, Simulation, Supply Chain, Operations Research and Management

RESEARCH INTERESTS

Modeling and Analysis of Complex Systems, Heuristic Optimization Techniques, Simulation, Facility Layout, Redundancy Allocation, Virtual Teams, Women in Information Sciences and Engineering

PROFESSIONAL EXPERIENCE

May'08-present Associate Professor of Management Information Systems, Pennsylvania State University- Berks, PA

Jan'03- May'08 Assistant Professor of Management Information Systems, Pennsylvania State University- Berks, PA

Jun'02- Dec'02 Post-doc Fellow, Industrial and Systems Engineering, Auburn University

Sep'99- May'02 RA, Industrial and Systems Engineering, Auburn University

Jan'99- Aug'99 RA, Industrial Engineering, University of Pittsburgh

Sep'98-Dec'98 TA, Industrial Engineering, University of Pittsburgh

Mar'95-Oct'97 TA, Industrial Engineering, Middle East Technical University, Ankara, Turkey

Apr'94-Feb'95 TA, Industrial Engineering, Gazi University, Ankara, Turkey

TEACHING EXPERIENCE

Management Information Systems, Pennsylvania State University- Berks, PA

Jan 2003-present

Courses Redesigned and Taught:

ENGR 310- Entrepreneurial Leadership
MIS 204- Management Information Systems
SCM 200 (formerly known as MS/IS 200)- Business Statistics
IST 302- Information Technology Project Management
BA 421- Project Management
PSU 05- First Year Seminar- Career Toolkit
PSU 05- First Year Seminar- Entrepreneurship
BA 297- Special Studies
BA 495C- Internship

Teaching Grants:

- *Developing Intercultural and Interdisciplinary Teams, International Programs- Faculty Travel Fund, (\$2,200)*, Penn State University Park, Apr 2004.
- *Developing Learning Objects, Basic Educational Technology Course Enhancement Grant (\$2,000)*, Penn State Berks, Fall 2003 - Spring 2005.

SELECTED AWARDS AND SCHOLARSHIPS

- Phi Kappa Phi Honor Society, Apr 2002
- Alpha Phi Mu Honor Society, Apr 2002
- Honorable Mention by the Material Handling Education Foundation, Inc., Apr 2001
- Attended Institute for Operations Research and the Management Sciences (INFORMS) Doctoral Colloquium in San Antonio, TX, Nov 2000
- Turkish Higher Educational Council Scholarship for Ph.D. in the USA, Jul 1997
- Physics Award from Scientific and Technical Research Council of the Turkish Republic, May 1989

RESEARCH AND PUBLICATIONS

REFEREED JOURNAL PAPERS

- Ramirez-Marquez, J.E., **Kulturel- Konak, S.**, and Sanseverino, C.M.R., "Probabilistic solution discovery algorithm for the orienteering problem," *International Journal of Industrial and Systems Engineering*, to appear.
- **Kulturel- Konak, S.**, Maurer, C.R. and Lohin, D.L., "Teaching Students How to Effectively Work in Virtual Teams," *International Journal of Information Technology Project Management*, to appear.
- Konak, A., **Kulturel-Konak, S.** and Azizoglu, M. (2008) "Minimizing the Number of Tool Switching Instants in Flexible Manufacturing Systems," *International Journal of Production Economics*, 116, 298-307.

- **Kulturel-Konak, S.**, Coit, D.W., and Baheranwala, F. (2008) Pruned Pareto-Optimal Front to the Multi-Objective System Redundancy Allocation Problem. *Journal of Heuristics*, 14(4), 335-357.
- Konak, A. and **Kulturel-Konak, S.** (2007) Ant Colony Optimization for the Minimization of the Number of Tool Switching Instants in Flexible Manufacturing Systems. *International Journal of Information Technology and Intelligent Computing*, 2(2).
- **Kulturel-Konak, S.** (2007) Approaches to Uncertainties in the Facility Layout Problems: Perspectives at the Beginning of the 21st Century. *Journal of Intelligent Manufacturing*, 18(2), 273-284.
- **Kulturel-Konak, S.**, Smith, A.E., and Norman, B.A. (2007) Bi-objective Facility Expansion and Relayout Considering Monuments. *IIE Transactions*, 39(7), 747-761.
- Scheubrein, R. and **Kulturel-Konak, S.** (2006) An Electronic Teaching Assistant for Basic Operations Management Methods. *INFORMS Transactions on Education*, 7(1).
- Konak, A., **Kulturel-Konak, S.**, Norman, B.A. and Smith, A.E. (2006) A New Mixed Integer Programming Formulation for Facility Layout Problem Using Flexible Bays. *Operations Research Letters*, 34, 660-672.
- **Kulturel-Konak, S.**, Smith, A.E., and Norman, B.A. (2006) Multi-Objective Tabu Search Using a Multinomial Probability Mass Function. *European Journal of Operational Research*, 169(3), 915-931.
- **Kulturel-Konak, S.**, Smith, A.E., and Norman, B.A. (2004) Layout Optimization Considering Production Uncertainty and Routing Flexibility. *International Journal of Production Research*, 42(21), 4475-4493.
- **Kulturel-Konak, S.**, Norman, B.A., Coit, D.W., and Smith, A.E. (2004) Exploiting Tabu Search Memory in Constrained Problems. *INFORMS Journal on Computing*, 14(3), 241-254.
- **Kulturel-Konak, S.**, Smith, A.E., and Coit, D.W. (2003) Efficiently Solving the Redundancy Allocation Problem Using Tabu Search. *IIE Transactions*, 35(6), 515-526.
- Konak, A., **Kulturel-Konak, S.**, Smith, A.E., and Nettleship, I. (2003) Estimation of Shrinkage for Near Net-Shape Using a Neural Network Approach. *Journal of Intelligent Manufacturing*, 14(2), 219-228.
- **Kulturel, S.**, Ozdemirel, N.E., Sepil, C., and Bozkurt, Z. (1999) Experimental Investigation of Shared Storage Assignment Policies in Automated Storage/Retrieval Systems. *IIE Transactions*, 31(8), 739-749.

REFEREED PROCEEDINGS PAPERS

- **Kulturel-Konak, S.** and Konak, A. (2008). "Reliable Network Server Assignment using an Ant Colony Approach," *Proceedings of ESREL 2008- Annual Conference of European Safety and Reliability Association (ESRA) and Society for Risk Analysis Europe (SRA-E)*, Valencia, Spain, 22 - 25 September, 2657-2663.

- Dallard, H., Lam, S., and **Kulturel-Konak, S.**, "Solving the Orienteering Problem Using Attractive and Repulsive Particle Swarm Optimization," *Proceedings of the 2007 IEEE International Conference on Information Reuse and Integration*, Las Vegas, NV, 12-17.
- **Kulturel-Konak, S.** and Coit, D.W., "Determination of Pruned Pareto Sets for the Multi-Objective System Redundancy Allocation Problem," *Proceedings of the 2007 IEEE Symposium on Computational Intelligence in Multi-Criteria Decision-Making*, Honolulu, HI, 390-394.
- Konak, A. and **Kulturel-Konak, S.**, "An Ant Colony Optimization Approach to the Minimum Tool Switching Instant Problem in Flexible Manufacturing System," *Proceedings of the 2007 IEEE Symposium on Computational Intelligence in Scheduling*, Honolulu, HI, 43-48.
- Lam, S., Dallard, H., and **Kulturel-Konak, S.**, "Particle Swarm Optimization Approach for Solving Orienteering Problem", *Proceedings of the 2006 Industrial Engineering Research Conference (IERC)*, Orlando, FL, CD-ROM format, 6 pages.
- Konak, A. and **Kulturel-Konak, S.**, "Simulation Optimization Using Tabu Search: An Empirical Study," *Proceedings of the 2005 Winter Simulation Conference*, Orlando, FL., 2686-2692.
- **Kulturel-Konak, S.** , Sayin, E., and Alpay, N., "A Collaborative Teamwork Experience Between Industrial Engineering Students of the Middle East Technical University and Business Administration Students of the Pennsylvania State University," *Proceedings of the 2005 International SEFI Conference*, Ankara, Turkey, 372-379.
- Konak, A., Smith, A.E., and **Kulturel-Konak, S.**, "New Event Driven Sampling Techniques for Network Reliability Estimation," *Proceedings of the 2004 Winter Simulation Conference*, Washington, DC, 224-231.
- Liang, Y.-C., **Kulturel-Konak, S.**, and Smith, A.E., "Metaheuristics for the Orienteering Problem," *Proceedings of the 2002 IEEE Congress on Evolutionary Computation*, Honolulu, HI, 384-389.
- **Kulturel-Konak, S.**, Konak, A., and Smith, A.E., "Minimum Cost 2-Edge-Connected Steiner Graphs in Rectilinear Space: An Evolutionary Approach," *Proceedings of the 2000 IEEE Congress on Evolutionary Computation*, San Diego, CA, 97-103.

BOOKS/BOOK SECTIONS

- Konak, A., **Kulturel-Konak, S.**, and Smith, A.E. "Two-Edge Disjoint Survivable Network Design Problem with Relays," eds. Chinneck, J.W., Kristjansson, B., and Saltzman, M. *Operations Research and Cyber-Infrastructure, Operations Research/Computer Science Interfaces Series 47*, 2009, 279-292, Springer, New York, USA.
- **Kulturel-Konak, S.** and Konak, A., "A Local Search Hybrid Genetic Algorithm Approach to the Network Design Problem with Relay Stations," *Telecommunications Modeling, Policy and Technology* , 311-324, eds. B. Golden, S. Raghavan, and E. Wasil, Springer, New York, USA, 2008.
- **Kulturel-Konak, S.**, Konak, A. and Coit, D.W. "Multiobjective Metaheuristic Approaches to Reliability Optimization," in *Computational Intelligence in Reliability Engineering:*

Evolutionary Techniques in Reliability Analysis and Optimization, Studies in Computational Intelligence: 39, 37-62, ed. G. Levitin, Springer, Berlin/Heidelberg, 2007.

- Dengiz, O., Konak, A., **Kulturel-Konak, S.**, Smith, A.E., and Nettleship, I., “Neural Computing Approach to Shape Change Estimation in Hot Isostatic Pressing,” in *Adaptive Computing in Design and Manufacture V*, 171-180, ed. I.C. Parmee, Springer-Verlag, London, 2002.

NON-REFEREED PROCEEDINGS PAPERS

- **Kulturel-Konak, S.**, “Allocating Redundant Resources,” Research Reports-Executive Summaries on Current Studies, *Industrial Engineer (IE)*, 2003, 35(6), 52-53.
- **Kulturel, S.**, Ozdemirel, N. E., and Sepil, C., “Surekli gozden gecirmeli envanter politikasi ile calisan otomatik depolama bosaltma sistemlerinde paylasimci depolama politikalarinin deneysel incelenmesi (in Turkish),” *Proceedings of the 1996 Turkish Operational Research Society Conference*, Istanbul, Turkey, 254-257. (*Principal author-investigator*)

CONFERENCE AND SYMPOSIUM PRESENTATIONS

- Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting, “Network Design with Relay Stations considering Survivability”
- ESREL 2008- Annual Conference of European Safety and Reliability Association (ESRA) and Society for Risk Analysis Europe (SRA-E), Valencia, Spain, Sep 2008
“Reliable Network Server Assignment using an Ant Colony Approach”
- Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting, Seattle, WA, Nov 2007
“Network Design with Relay Stations”
- Institute of Electrical and Electronics Engineers (IEEE) Symposium on Computational Intelligence in Multi-Criteria Decision-Making, Honolulu, HI, Apr 2007
“Determination of Pruned Pareto Sets for the Multi-Objective System Redundancy Allocation Problem”
- IEEE Symposium on Computational Intelligence in Scheduling, Honolulu, HI, Apr 2007
“An Ant Colony Optimization Approach to the Minimum Tool Switching Instant Problem in Flexible Manufacturing System”
- INFORMS Annual Meeting, Pittsburgh, PA, Nov 2006
“A New Mixed Integer Programming for Facility Layout Design using Flexible Bays”
- IERC, Orlando, FL, May 2006
“A Collaborative Teamwork between Engineering and Business Administrations Students”
“A Particle Swarm Optimization Approach to the Orienteering Problem”
- Teaching and Learning with Technology (TLT) Symposium, University Park, PA, Apr 2006
“A Collaborative Teamwork Experience”

- Winter Simulation (WinterSim), Orlando, FL, Dec 2005
“Simulation Optimization Using Tabu Search: An Empirical Study”
- INFORMS Annual Meeting, San Francisco, CA, Nov 2005
“Pruned Pareto Sets for the Stochastic System Redundancy Allocation Problem”
- IERC, Atlanta, GA, May 2005
“A Tabu Search Approach to the Tool Magazine Setup Problem on Numerical Controlled Machines”
- WinterSim, Washington, DC, Dec 2004
“New Event-driven Sampling Techniques for Network Reliability Estimation”
- INFORMS Annual Meeting, Denver, CO, Oct 2004
“Prioritized Pareto Optimal Solutions to the System Redundancy Allocation Problem”
- IERC, Houston, TX, May 2004
“A New Mixed Integer Programming Formulation for Unequal Area Facility Layout Problem in a Continuous Plane”
“Solution of Stochastic Multi-objective System Design Problems”
- INFORMS Annual Meeting, Atlanta, GA, Nov 2003
“Exploiting Tabu Search Memory in System-Redundancy Allocation Problem”
- EURO/INFORMS, Istanbul, Turkey, Jul 2003
“Layout Optimization Considering Demand Uncertainty and Expansion Flexibility”
- INFORMS Annual Meeting, Miami, FL, Nov 2001
“A Tabu Search Approach to the Orienteering Problem”
“Facility Layout Considering Uncertainty”
- INFORMS Annual Meeting, San Antonio, TX, Nov 2000
“A Tabu Search Application to the Redundancy Allocation Problem”
- Congress on Evolutionary Computation, San Diego CA, Jul 2000
“Minimum Cost 2-Edge-Connected Steiner Graphs in Rectilinear Space: An Evolutionary Approach”
- INFORMS Annual Meeting, Philadelphia, PA, Nov 1999
“Tabu Search Approach to the Facility Layout Problem”
- INFORMS Meeting, Cincinnati, OH, May 1999
“Tabu Search Approach to the Unequal Area Block Layout Problem”
“Experimental Investigation of Shared Storage Assignment Policies in Automated Storage/Retrieval Systems”
- Turkish Operational Research (TOR) Society Conference, Istanbul, Turkey, Oct 1996
“Surekli gozden gecirmeli envanter politikasi ile calisan otomatik depolama bosaltma sistemlerinde paylasimci depolama politikalarinin deneysel incelenmesi (in Turkish)”

FUNDED PROJECTS

- Exploration of the Effects of Race, Ethnicity and Socio-economic Class on Gender Stereotyping of STEM Disciplines, with Eileen Trauth, Lynette Kvasny, K.D. Joshi, Jan Mahar, **National Science Foundation (NSF) Research Opportunities Award (ROA)**, \$38,050, Apr 2009.
- *Assessing the Role of Different Learning Styles in Shaping the Engagement of Women with Information Sciences and Technology*, **Faculty Research Development Grant: (\$2,900)**, Penn State Berks, Jul 2008.
- *Collaborative Research: Enhancing Learning Experiences in Partially Distributed Teams*, with Rosalie Ocker and Mary B. Rosson from Penn State University Park, **National Science Foundation (NSF) Grant (\$115,055)**, Jan 2008.
- *Assessing the Role of Teaching and the Impact of Learning Environment in Shaping the Engagement of Women with Information Sciences and Technology*, **Faculty Research Development Grant: (\$2,900)**, Penn State Berks, Jul 2007 and **Undergraduate Research Grant (\$500)**, Penn State Berks, Apr 2007.
- *Teaching and Learning Project Management with Virtual Teams*, **Faculty Research Development Grant: (\$2,500)**, Penn State Berks, Jul 2006 and **Undergraduate Research Grant (\$300)**, Penn State Berks, Apr 2006.
- *Minimizing the Number of Tool Switching Instants in Flexible Manufacturing Systems*, **Faculty Research Development Grant (\$2,000)**, Penn State Berks, Jul 2005.
- *Women in Information Science Programs*, **Undergraduate Research Grant (\$500)**, Penn State Berks-Lehigh Valley College, Dec 2004.
- *Optimally Locating Input/Output (I/O) Points in Facility Design*, **Faculty Research Development Grant: (\$2,500)**, Penn State Berks-Lehigh Valley College, Jul 2004.
- *Locating Input/Output (I/O) Points in the Optimal Facility Layout Design*, **Undergraduate Research Grant (\$500)**, Penn State Berks-Lehigh Valley College, Dec 2003.
- *Optimal Design of Industrial Facilities*, **Faculty Research Development Grant: (\$2,000)**, Penn State Berks-Lehigh Valley College, Jul 2003.

RECENT SERVICE TO THE PROFESSION

- President-Elect, Women in Operations Research and Management Science (WORMS), Mar 2009- Mar 2010
- Senior Vice President of Communications, WORMS, Mar 2007- Mar 2008
- Junior Vice President of Communications, WORMS, Mar 2006- Mar 2007
- Congress on Evolutionary Computation (CEC) 2005, 2006, 2007 Annual Meetings Program Committee Member

- The Institute of Industrial Engineers (IIE)-Reading Chapter Director and Assistant Newsletter Director, Sep 2006- present
- Referee for the IEEE Transactions on Reliability, Journal of Heuristics, IIE Transactions, Asian-Pacific Journal of Operational Research, Reliability Engineering and System Safety

PROFESSIONAL AFFILIATIONS

- INFORMS
- IIE
- IEEE
- Society of Women Engineers (SWE)