

CURRICULUM VITAE
MURAT ERMiŞ, Ph.D.

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EDUCATION

Ph.D. in Industrial Engineering, 2005, Istanbul Technical University, Istanbul, Turkey.

M.Sc. in Industrial Engineering, 1997, Middle East Technical University, Ankara, Turkey

B.Sc. in Industrial Engineering, 1991, Bogazici University, Istanbul, Turkey.

High School, 1986, Ankara Science High School, Ankara, Turkey.

PROFESSIONAL EXPERIENCE

Academic

2017 – current : Associate Professor – Department of Industrial Eng., AU, Istanbul, Turkey

2016 – 2017 : Associate Professor – Department of Industrial Eng., NDU, Istanbul, Turkey

2006 – 2016 : Assistant Professor – Department of Industrial Eng., TurAFA, Istanbul, Turkey

1997 – 2006 : Research Assistant – Department of Industrial Eng., TurAFA, Istanbul, Turkey

Industry Experience

1991 – 1993 : Production Planning Engineer – Air Supply & Maintenance Center, Kayseri, Turkey.

Developed and implemented algorithms for production scheduling & tracking problems.

RESEARCH AREAS

Methodologies: Combinatorial optimization, computational intelligence, network models and optimization, planning algorithms, dynamic multi-objective optimization.

Application Areas: Location theory, network reliability, motion planning algorithms, network design and routing in computer communication and logistics, social networks.

PUBLICATIONS

Publications in Refereed Journals (SCI/SCIE)

1. Özkan, Ö., and Ermis, M., “Nature-Inspired Constrained Relay Node Placement Heuristics for Wireless Sensor Networks”, *Journal of Intelligent and Fuzzy Systems*, Vol.28, No.6, pp. 2801-2809, 2015.
2. Hasırcıoğlu, I., Topcuoglu, H., and Ermis, M. “A Meta-Heuristic Based 3-D Path Planning Environment for Unmanned Aerial Vehicles”, *Simulation: Transactions of the Society for Modeling and Simulation*, Vol. 89, No. 8, pp. 903-920, 2013.
3. Topcuoglu, H., Ermiş, M., Bekmezci, I., and Sifyan, M. “A New 3-D Wireless Multimedia Sensor Network Simulation Environment for Connected Coverage Problems”, *Simulation: Transactions of the Society for Modeling and Simulation International*, Vol. 88, No.1, pp. 110-122, 2012.
4. Topcuoglu, H., Ermiş, M., and Sifyan, M. “Positioning and Utilizing Sensors on a 3-D Terrain: Part I - Theory and Modeling”, *IEEE Transactions on Systems, Man, and Cybernetics-Part C: Applications and Reviews*, vol.41, no.3, pp. 376-382, 2011.
5. Topcuoglu, H., Ermiş, M., and Sifyan, M. “Positioning and Utilizing Sensors on a 3-D Terrain: Part II - Solving with a Hybrid Evolutionary Algorithm”, *IEEE Transactions on Systems, Man, and Cybernetics-Part C: Applications and Reviews*, vol.41, no.4, pp. 470-480, 2011.
6. Pirge, G., Hacıoğlu, A., Ermiş, M., and Altuntaş, S. “Determination of the Compositions of NiMnGa Magnetic Shape Memory Alloys Using Hybrid Evolutionary Algorithms”, *Computational Materials Science*, vol.45, no.1, pp. 189-193, 2009.

7. Topcuoglu, H., Corut, F., Ermis, M., and Yilmaz, G. "Solving the Uncapacitated Hub Location Problem Using Genetic Algorithms", *Computers & Operations Research*, vol.32, no.4, pp. 967-984, 2005.
8. Ermis, M., Sahingoz, O.K., and Ulengin, F. "An Agent Based Supply Chain System with Neural Network Controlled Processes", *Lecture Notes in Computer Science*, vol.3314, pp. 837-846, 2004.
9. Ermis, M., Ulengin, F., and Hacıoglu, A. "Vibrational Genetic Algorithm (VGA) for Solving Continuous Covering Location Problems", *Lecture Notes in Computer Science*, vol.2457, pp. 293-302, 2002.

Publications in Refereed Journals (Non SCI/SCIE)

1. Güler, ÇU, and Ermiş, M., "OR/MS Studies on Post-Disaster Stage Relief Item Logistics: Complementary Review", *Journal of Aeronautics and Space Technologies*, vol. 10, no. 1, pp. 9-28, 2017.
2. Ayöperken, E., and Ermiş, M., "İnsansız Hava Araçları için Üs Konumlarının Kapsama Alanı Problemi Olarak Modellenmesi ve Eniyilenmesi", *Havacılık ve Uzay Teknolojileri Dergisi*, vol. 5, no. 1, pp. 61-71, 2011.
3. Pakkan, B., and Ermiş, M., "İnsansız Hava Araçlarının Genetik Algoritma Yöntemiyle Çoklu Hedeflere Planlanması", *Havacılık ve Uzay Teknolojileri Dergisi*, vol. 4, no. 3, pp. 77-84, 2010.
4. Aytulun, S.K., and Ermis, M., "İş Süreçlerinin Modellenmesinde Gert Şebekelerinin Kullanımı", *Havacılık ve Uzay Teknolojileri Dergisi*, vol. 4, no. 3, pp. 19-31, 2010.

Book Chapters

1. Özkan, Ö., Ermis, M., and Bekmezci, İ., "Hybridization of Branch and Bound Algorithm with Metaheuristics for Designing Reliable Wireless Multimedia Sensor Network", In: Talbi E-G., Amodeo L., Yalaoui F. (editors), *Recent Developments of Metaheuristics*, Springer, 2018.
2. Akar, E., Topcuoglu, H.R., and Ermis, M., "Hyper-heuristics for online UAV path planning under imperfect information", In: Esparcia-Alcazar A.I., and Mora, A.M. (editors), *Applications of Evolutionary Computation*, volume 8602 of *Lecture Notes in Computer Science*, Springer, pp. 741-752, 2014.

Publications in Refereed Conference/Workshop Proceedings

1. Altın, L., Topcuoglu, H.R., and Ermis, M., "Hybridizing Change Detection Schemes For Dynamic Optimization Problems", *IEEE Congress on Evolutionary Computation (CEC 2017)*, June 5 – 8, Donostia - San Sebastián, Spain.
2. Özkan, Ö., Ermis, M., and Bekmezci, İ., "Wireless Multimedia Sensor Network Reliability Analysis with Petri Nets," *Global Joint Conference on Industrial Engineering and Its Application Areas (GJCIE 2016)*, July 13-15, Istanbul.
3. Guler, C.U., and Ermis, M., "Afet Yönetimi Ulaştırma Planlaması İki Seviyeli Stokastik Programlama Modelinde Dinamik Enkaz Temizleme Uygulaması," *36. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Kongresi (YAEM 2016)*, July 13-15, İzmir.
4. Özkan, Ö., Ermis, M., and Bekmezci, İ., "A Hybrid Matheuristic Approach for Designing Reliable Wireless Multimedia Sensor Networks", *Genetic and Evolutionary Computation Conference (GECCO'15) Companion*, July 11-15, 2015, Madrid, Spain.
5. Altın, L., Topcuoglu, H.R., and Ermis, M., "Evolutionary Dynamic Optimization Techniques for Marine Contamination Problem", *Genetic and Evolutionary Computation Conference (GECCO'15) Companion*, July 11-15, 2015, Madrid, Spain.
6. Guler, C.U., and Ermis, M., "Afet Yönetimi Ulaştırma Planlaması İki Seviyeli Stokastik Programlama Modelinde Hizmet Seviyesi Uygulaması", *35. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Kongresi (YAEM 2015)*, Ankara, Türkiye.

7. Özkan, Ö., Ermis, M., and Bekmezci, İ., "Kablosuz Çoklu Ortam Algılayıcı Ağlarda Genel Amaçlı Grafik İşlemci Birimi (GPGPU) Temelli Monte Carlo Simülasyonu ile Güvenilirlik Tahmini", *35. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Kongresi (YAEM 2015)*, Ankara, Türkiye.
8. Özkan, Ö., Ermis, M., and Bekmezci, İ., "Reliable Wireless Multimedia Sensor Network Design for Surveillance with Hybrid Metaheuristics", *The 5th International Conference on Metaheuristics and Nature Inspired Computing (META 2014)*, October 27 – 31, 2014, Marrakech, Morocco.
9. Guler, C.U., and Ermis, M., "A Deterministic Model to the Two-Stage Stochastic Programming of Disaster Relief Supply Chain Transportation and Distribution Planning", *World Congress on Engineering*, July 2 – 4, 2014, London, U.K.
10. Bekmezci, İ., Ermis, M., and Kaplan, S., "Connected Multi UAV Task Planning for Flying Ad Hoc Networks", *IEEE BlackSeaCom 2014*, May 27-30, 2014, Chisinau, Moldova.
11. Özkan, Ö., and Ermis, M., "Reliable Communication Network Design with Metaheuristics", *International IIE Conference: The Global Reach of Industrial Engineering*, June 26 – 28, 2013, Istanbul, Turkey.
12. Özkan, Ö., and Ermis, M., "Hybridization of Metaheuristics with Branch and Bound for Reliable Communication Network Design", *26th European Conference of Operational Research (Euro-INFORMS)*, July 01 – 04, 2013, Roma, Italy.
13. Küçük, M., and Ermis, M., "A New Hybrid Evolutionary Algorithm for Three-Dimensional Packing Problems", *IEEE International Conference on Systems, Man, and Cybernetics (SMC'10)*, October 10 – 13, 2010, Istanbul, Turkey.
14. Topcuoglu, H., Ermis, M., and Sifyan, M., "Path Planning for Mobile Sensor Platforms Using Hybrid Evolutionary Algorithms on a 3D Terrain", *IEEE World Congress on Computational Intelligence (WCCI'10)*, July 18 – 23, 2010, Barcelona, Spain.
15. Topcuoglu, H., Ermis, M., and Sifyan, M., "Hybrid evolutionary algorithms for sensor placement on a 3D terrain", *The 9th International Conference on Intelligent Systems Design and Applications (ISDA'09)*, November 30 – December 2, 2009, Pisa, Italy.
16. Aytulun, S.K., and Ermis, M., "Space launch vehicle project reliability analysis by using GERT", *The 4th International Conference on Recent Advances in Space Technologies (RAST'09)*, June 11 – 13, 2009, Istanbul, Türkiye.
17. Hasircioğlu, I., Topcuoglu, H., and Ermis, M., "3-D Path Planning for the Navigation of Unmanned Aerial Vehicles by Using Evolutionary Algorithms", *Genetic and Evolutionary Computation Conference (GECCO'08)*, 2008, Atlanta, GE, USA.
18. Pirge, G., Hacıoğlu, A., Ermis, M., and Altıntaş, S., "Determination of the compositions of NiMnGa magnetic shape memory alloys using hybrid evolutionary algorithms", *2007 E-MRS Fall Meeting*, Warsaw University of Technology, 2007, Poland.
19. Topcuoglu, H., and Ermis, M., "Genetic Algorithms for Positioning and Utilizing Sensors in Synthetically Generated Landscapes", *Genetic and Evolutionary Computation Conference (GECCO'06)*, 2006, Seattle, WA, USA.
20. Pirge, G., Ermis, M., and Altıntaş, S., "Prediction of the Martensite Transformation Temperatures of NiMnGa Magnetic Shape Memory Alloys Using Artificial Neural Networks", *2005 E-MRS Fall Meeting*, Warsaw University of Technology, 2005, Poland.
21. Ermis, M., Sahingoz, O.K., and Ulengin, F., "Mobile agent based supply chain system with neural network controlled services", *International ICSC Symposium on Engineering of Intelligent systems (EIS'04)*, 2004, Madeira, Portugal.
22. Hacıoğlu, A., Ermis, M., and Ulengin, F., "A real coded Genetic Algorithm (VGA) for a class of continuous space location-allocation problems", *International Conference on Fuzzy Systems & Soft Computational Intelligence in Management and Industrial Engineering (FSSCIMIE'02)*, 2002, Istanbul, Turkey.

WORK IN PROGRESS

Submitted/Under Review Refereed Journal Articles

1. Ozkan, O., and Ermis, M., "Reliable Computer Network Design: Hybridization of Metaheuristics with Branch & Bound", *Journal of Operational Research Society*.
2. Cimen, E.B., Bekmezci, İ., and Ermis, M., "Weighted Social Network Modeling Based on Relationship Between Different Social Layers", *Physical Review E*.
3. Ozkan, O., and Ermis, M., "Reliable Wireless Multimedia Sensor Network Design: Comparison of Nature-inspired Hybrid Approaches", *Applied Soft Computing*.

Articles in Preparation

1. Guler, C.U., and Ermis, M., "An Improved Two-Stage Stochastic Programming Model for Relief Item Transportation Framework and Service Level Effects".
2. Topcuoglu, H., Ermis, M., and Bekmezci, I., "Hyper-Heuristics for Deploying Wireless Multimedia Sensor Networks on 3-D Terrains".

Ongoing Work

1. Bekmezci, İ., and Ermiş, M., "Decentralized Task Planning Strategies to Ensure Network Connectivity for Heterogeneous Flying Adhoc Networks in Dynamic Environment".

SPONSORED RESEARCH

1. TUBITAK-1001 Research Project, (in evaluation): *Designing Change-Detection Based Evolutionary Algorithms for Dynamic Multi-Objective Optimization Problems*, Investigator: M. Ermis, Funding: \$78,000.
2. TUBITAK-1003 Research Project, (216M197), 2017 - 2020: *Aerial Robotic System with Wireless Sensor Networks for Border Surveillance*, Investigator: M. Ermis, Funding: \$450,000.
3. TUBITAK-1001 Research Project, (113E565), 2014 - 2016: *Decentralized Task Planning Strategies to Ensure Network Connectivity for Heterogeneous Flying Ad Hoc Networks in Dynamic Environment*, Investigator: M. Ermis, Funding: \$45,000.
4. TUBITAK-1001 Research Project, (106E159), 2007 - 2010: *Locating and Utilizing Sensors with Hybrid Evolutionary Algorithms in a Synthetically Generated Landscape*, Investigator: M. Ermis, Funding: \$68,000.

TEACHING EXPERIENCE

College of Engineering, Turkish Air Force Academy

Instructor, *Nonlinear Optimization*, Fall 15 - Fall 16; graduate-level required course

Instructor, *Agent Based Simulation*, Spring 14 - Spring 15; graduate-level required course

Instructor, *Design and Analysis of Experiments*, Fall 14 - Fall 15; graduate-level required course

Instructor, *Operations Research-I*, Fall 02 - Fall 16; sophomore-level required course

Instructor, *Operations Research-II*, Fall 02 - Fall 16; junior-level required course

Instructor, *Facilities Layout*, Fall 03; junior-level required course

Instructor, *Decision Theory*, Fall 10 - Fall 12; senior-level required course

Instructor, *Simulation*, Fall 98-Fall 00; senior-level required course

Senior Design Project Supervisor, 2002-2008.

Independent Study and Special Topics courses, *Sequencing and Scheduling* (Fall 07, senior-level)

Instructor, *Modern Metaheuristics*, Fall 09-Fall12; graduate-level elective course

Instructor, *Stochastic Processes*, Fall 11; graduate-level required course

Instructor, *Nonlinear Optimization*, Fall 11 - Fall 12; graduate-level required course

Institute of Pure and Applied Sciences, Marmara University

Instructor, *Special Topics in Engineering Management*, Fall 05.

Course topics include analysis of some specific problem areas within the context of planning and scheduling of production activities. Definition, formulation and available solution procedures for aggregate planning, lot sizing. Scheduling in manufacturing systems, scheduling in service systems, design and operation of scheduling systems.

College of Engineering, Istanbul Arel University

Instructor, *Inventory Management*, Fall 14 - Fall 15; graduate-level course

College of Engineering, Istanbul Culture University

Instructor, *Optimization*, Fall 05-Fall 09, required course in the undergraduate Computer Engineering program

Instructor, *Computer Simulation*, Fall-Spring 05-11, required course in the undergraduate Computer Engineering program

Instructor, *Simulation Modeling*, Fall 08-Fall 12, required course in the undergraduate Industrial Engineering program

HONORS AND AWARDS

2002-2003 – Canada Defense Scholarship

1987-1991 – H. Ö. Sabancı Foundation scholarship for undergraduate study.

PROFESSIONAL ACTIVITIES

Journal Referee:

European Journal of Operational Research

OMEGA - The International Journal of Management Science

Simulation: Transactions of the Society for Modeling and Simulation

IEEE Transactions on Systems, Man and Cybernetics: Part B

Aerospace Science & Technologies

Journal of Intelligent and Fuzzy Systems

Journal of Aeronautics and Space Technologies

Conference Referee:

Recent Advances in Space Technologies, RAST 2009, 2011, 2013; HİTEK, 2004; UHAT, 2011, 2013; INISTIA 2012.

Project Proposal Reviewer/Panelist:

Turkish Science and Technology Council (TUBITAK).

Invited Talks/Seminars:

TOBB University, 2007; Marmara University, 2012.

Organization Committees:

HİTEK 2004, Havacılıkta İleri Teknolojiler Sempozyumu, 2004, Istanbul, Turkey.

RAST 2011, 2013, International Conference on Recent Advances in Space Technologies, Military Museum, Istanbul, Turkey, June 12-14, 2013.

Conference/Workshop Program Committees:

YA/EM 2013, National Operations Research/Industrial Engineering Congress, Istanbul, Turkey.

Graduate Students Advised:

Çağlar Utku Güler, Ph.D. in IE 2016, Turkish Air Force Academy (advisor)

Ömer Özkan, Ph.D. in IE 2016, Turkish Air Force Academy (advisor)

Egemen Berki Çimen, M.Sc. in IE 2014, Turkish Air Force Academy (co-advisor)

Mustafa Küçük, M.Sc. in IE 2010, Turkish Air Force Academy (advisor)

Baha Pakkan, M.Sc. in IE 2009, Turkish Air Force Academy (advisor)

Erhan Ayöperken, M.Sc. in IE 2009, Turkish Air Force Academy (advisor)

Salih Bayrak, M.Sc. in IE 2009, Turkish Air Force Academy (advisor)

Memberships in Organizations: Institute for Operations Research and the Management Sciences (INFORMS), Institute of Industrial Engineers (IIE), IEEE, Yoneylem Arastirmasi Dernegi (YAD).