

Mehmet Sevкли

800 E. High Street, Farmer School of Business, Oxford, Ohio (Office:2025)



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<https://scholar.google.com/citations?hl=en&user=DDLPr4AAAAJ>



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EDUCATION

Ph.D. in Industrial Engineering, August 2005

Istanbul Technical University, School of Management, Istanbul, Turkey

Dissertation: A Particle Swarm Optimization Approach to the Job Shop Scheduling Problem in Comparison to the Genetic Algorithm Model

M.Sc. in Industrial Engineering, July 2000

Fatih University, Istanbul, Turkey

Thesis: Banknote Recognition Using Inductive Learning

B.Sc. in Industrial Engineering, July 1997

Sakarya University, Sakarya, Turkey

Senior Design Project: Database Design for Inventory Management Systems

TEACHING INTERESTS

- Business Statistics and Analytics
- Machine Learning algorithms using Scikitlearn, Tensorflow and Keras
- Applied Data Science with Python, Tableau Power BI, and R Programming
- Operations Management
- Supply Chain Management
- Production Planning and Control
- Operations Research (Deterministic and Stochastic)
- System Simulation using ANYLOGIC and ARENA Software
- Metaheuristic Optimization
- Job Scheduling
- Linear and Integer Programming using Xpress MP or GUROBI Software

Undergraduate Level Courses

Miami University, Oxford, Ohio, USA (2021-2022)

- Principles of Business Analytics (Fall 2021, Spring 2022 Semesters, 160 Students)

University of Tulsa, Tulsa, Oklahoma, USA (2020-2021)

- Operations Management (Fall 2020 and Spring 2021 Semester, 120 Students)
- Statistics (Spring 2021, 60 Students)

University of Toledo, Toledo, Ohio, USA (2019-2020)

- Data Analytics for Business (Fall 2019 Semester, 55 Students)
- Business Statistics and Analytics (Fall 2019 and Spring 2020, 165 Students)
- Production Planning and Scheduling (Fall 2019 and Spring 2020, 120 Students)

The American University of the Middle East, Kuwait (2016-2019)

- Operations Research and Optimization
- Production Integrated Systems
- System Simulation
- Operations Management
- Supply Chain Management

King Saud University, Riyadh, Saudi Arabia (2010-2012)

- Industrial Systems Simulation
- Inventory Control and Production Planning

Fatih University, Istanbul, Turkey (1998-2016)

- Operations Research
- Discrete Event System Simulation
- Operations Scheduling
- Operations Management
- Supply Chain Management
- Statistics
- Computer Programming (Java)
- Engineering Graphics
- Computing in Industrial Engineering
- C Programming
- Database Management in Industrial Engineering

Turkish Military Academy Defense Sciences Institute, Ankara, Turkey (2006-2007)

- Operations Research

Graduate Level Courses

University of Tulsa, Tulsa, Oklahoma, USA (2020-2021)

- Machine Learning using Python(Spring 2021, 15 Students)
- Business Decision Models (Fall 2020, 15 Students)
- Leading and Managing Analytics Organizations (Fall 2020, 15 Students)
- Managing Data Analytics Projects (Fall 2020, 15 Students)
- Operation Management (Spring 2021, 15 Students)

Fatih University, Istanbul, Turkey (2010-2016)

- Quantitative Methods in Management
- Heuristic Optimization
- Scheduling
- Advanced Optimization
- System Dynamics
- Data Analysis

Miami University, Farmer School of Business, Department of Information Systems and Analytics, Oxford, Ohio, USA

Visiting Assistant Professor, Aug 2021 – Current

Taught courses at the sophomore levels: Principles of Business Analytics.

The University of Tulsa, Collins College of Business, Finance, Operations Management and International Business, Tulsa, Oklahoma, USA.

Visiting Assistant Professor of Data Analytics, Aug 2020 – Aug 2021

Taught courses at the sophomore and graduate levels: Operation Management, Statistics, Business Decision Models, Leading and Managing Analytics Organizations, Machine Learning using Python and Managing Data Analytics Projects.

The University of Toledo, College of Business and Innovation, Information, Operations and Technology Management Department, Toledo, Ohio, USA.

Visiting Professor, Aug 2019 – May 2020

Taught courses at the sophomore and junior levels: Data Analytic for Business, Business Statistics and Analytics, and Production Planning and Scheduling.

The American University of the Middle East, Department of Industrial Engineering, Kuwait

Teaching Professor, Sep 2016 - June 2019

Taught courses at the junior and senior levels: Operations Research, Simulation, Operations Management.

Fatih University, Department of Industrial Engineering, Istanbul, Turkey

Associate Professor, Jun 2010 – July 2016

Assistant Professor, Oct 2005 - Jun 2010

Lecturer, Jan 2000 - Oct 2005

Research and Teaching Assistant, Jan 1998 - Jan 2000

Taught courses at the sophomore to graduate levels (face to face and online): Operations Research, Discrete Event System Simulation, Statistics, Production Planning, Supply Chain Management, Heuristic Optimization, System Dynamics Simulation, Statistics, Computer Programing (C and Java), Database Management (Access and SQL), Engineering Graphics Using SOLIDWORKS.

University of Massachusetts Lowell, Manning School of Business, Department of Operations Management, MA, U.S.

Visiting Professor, June 2015 – Aug 2015

Conducted research on machine learning.

King Saud University, Riyadh, Saudi Arabia

Associate Professor, Sep 2010 - June 2012

Taught courses at the junior and senior levels: Operations Research, Discrete System Simulation, and Inventory Control and Production Planning.

Turkish Military Academy, Defense Sciences Institute, Ankara, Turkey

Assistant Professor, Sep 2006 - Aug 2007

Fulfilled military duty and taught Operations Research and Operations Management Courses in Turkish Military Academy.

South Bank University, *London, UK*
Visiting Research Fellow, Jun 2001 – Sep 2001

Conducted research on job-scheduling problems and metaheuristic optimization.

SERVICE

American University of Middle East

Coordinate the **Operation Management** faculty and curriculum, Sep 2017- Jun 2019

Coordinate the **Operation Research** faculty and curriculum, Sep 2017- Jun 2019

Fatih University, *Istanbul, Turkey*

Coordinator, Engineering Management Program, Graduate School of Fatih University, **Sep 2014-Aug 2016**

Chair, Industrial Engineering Department, **Sep 2015 – July 2016** and **Sep 2008 – Aug 2010**

Vice-Dean, Faculty of Engineering, **Oct 2012 – Sep 2015**

Faculty Management Board Member, Faculty of Engineering, **Oct 2012 – Sep 2015**

FUNDED RESEARCH PROJECTS

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- **Determining the Optimal Speed of a Vehicle on a Specified Route in Terms of Economical Fuel Consumption.** TUBITAK (The Scientific and Technological Research Council of Turkey). Nov 2014 - Aug 2016. **Principal Investigator.** Budget: \$50,000.
 - Development of Failure Prognostics and a Maintenance Planning System for Point Mechanisms in Railways. TUBITAK (The Scientific and Technological Research Council of Turkey). Oct 2008 - Oct 2010. **Researcher.** Budget: \$100,000

RESEARCH INTERESTS

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- 📖 Machine Learning Algorithms
 - 📖 Supply Chain Management
 - 📖 Metaheuristics Applied to Combinatorial Optimization Problems
 - 📖 Vehicle Routing Problems
 - 📖 Multi-Criteria Decision Making
 - 📖 Operations Scheduling
 - 📖 System Simulation
 - 📖 Fuzzy Logic
 - 📖 Linear and Integer Programming

- Unal, Y.Z., **Sevкли, M.**, Uysal, O., Turkyilmaz, "A new approach to fleet assignment and aircraft routing problems", A., Transportation Research Procedia, Volume 59, 2021, Pages 67-75
- **Sevкли, M.**, Karaman, S.A., Unal, Y.Z., Kotun, M.B., "An Integrated Heuristic Approach for the Long-Distance Heterogeneous Vehicle Routing Problem", In Interdisciplinary Approaches to Spatial Optimization Issues., IGI Global, 2021. <http://doi:10.4018/978-1-7998-1954-7.ch002>, 2021
- Kibria, G.M.D., Sevкли, M. "Application of deep learning for credit card approval: a comparison with two machine learning techniques", International Journal of Machine Learning and Computing, 2020
- Kibria, G.M.D., **Sevкли, M.** "Application of deep learning for credit card approval: a comparison with two machine learning techniques", *International Journal of Machine Learning and Computing*, Vol. 11 No.1, pp.286-290, 2021
- Basti, M., **Sevкли, M.** "An artificial bee colony algorithm for the p-median facility location problem", *International Journal of Metaheuristics*, Vol. 4, No. 1, pp. 91-113, 2015.
- *Ciftci, M.E., **Sevкли, M.**, "A new hub and spoke system proposal: A case study for Turkey's aviation industry", *Journal of Air Transport Management*, 47, 190-198, 2015.
- *Zaim, S., **Sevкли, M.**, Camgöz-Akdag, H., Demirel, O.F., Yayla, A.Y., Yesim, Delen, D., "Use of ANP Weighted Crisp and Fuzzy QFD for Product Development", *Expert Systems with Applications*, Vol. 41, No. 9, Jul. 2014, pp. 4464-4474.
- **Sevкли, M.**, Mamedsaidov, R., Camci, F., "A Novel Discrete Particle Swarm Optimization for P-Median Problem", *Journal of King Saud University: Engineering Sciences*, Vol. 26, No. 1, Jan. 2014, pp. 11-19.
- ***Sevкли, M.**, Oztekin, A., Uysal, O., Torlak, G., Turkyilmaz, A., Delen, D., "Development of a fuzzy ANP based SWOT analysis for the airline industry in Turkey", *Expert Systems with Applications*, Vol. 39, No. 1, Jan. 2012, pp. 14-24.
- *Eker, O. F., Camci, F., Guclu, A., Yilboga, H., **Sevкли, M.**, Baskan, S., "A Simple State-Based Prognostic Model for Railway Turnout Systems", *IEEE Transactions on Industrial Electronics*, Vol. 58, No. 5, Apr. 2011, pp. 1718 – 1726.
- *Torlak, G.; **Sevкли, M.**, Sanal, M.; Zaim, S., "Analyzing business competition by using fuzzy TOPSIS method: An example of Turkish domestic airline industry", *Expert Systems with Applications*, Vol. 38, No. 4, Apr. 2011, pp. 3396-3406.
- ***Sevкли, M.**, "An application of the fuzzy ELECTRE method for supplier selection", *International Journal of Production Research*, Vol. 48, No. 12, Jun. 2010, pp. 3393–3405.
- *Onder, C., **Sevкли, M.**, Altinok, T., Tavukcuoglu, C., "Institutional Change and Scientific Research: A Preliminary Bibliometric Analysis of Institutional Influences on Turkey's Recent Social Science Publications ", *Scientometrics*, Vol. 76, No. 3, Sep. 2008, pp. 540-560.
- **Sevкли, M.**, Guner, A. R., "A Discrete Particle Swarm Optimization Algorithm for Uncapacitated Facility Location Problem", *Journal of Artificial Evolution and Applications*, Vol. 2008, No. 861512, Mar. 2008, pp. 1-9.

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- ***Sevкли, M.**, Lenny, K.S.C., Zaim, S., Demirbag, M., Tatoglu, E., "Hybrid Analytical Hierarchy Process Model for Supplier Selection", *Industrial Management & Data Systems*, Vol. 108, No. 1, Jan. 2008, pp. 122-142.
 - ***Sevкли, M.**, Lenny, K.S.C., Zaim, S., Demirbag, M., Tatoglu, E., "An Application of Data Envelopment Analytic Hierarchy Process for Supplier Selection: A Case Study of Beko in Turkey", *International Journal of Production Research*, Vol. 45, No. 9, Oct. 2007, pp. 1973-2003.
 - ***Tasgetiren, M.F.**, Liang, Y.C., **Sevкли, M.**, Gencyilmaz, G., "Particle Swarm Optimization Algorithm for Makespan and Total Flowtime Minimization in Permutation Flowshop Sequencing Problem", *European Journal of Operational Research*, Vol. 177, No. 3, Jul. 2007, pp. 1930-1947.
 - **Sevкли, M.**, Aydin, M. E., "Parallel Variable Neighbourhood Search Algorithms for Job Shop Scheduling Problems", *IMA Journal of Management Mathematics*, Vol. 18, No. 2, Feb. 2007, pp. 117-133.
 - Tasgetiren, M.F., **Sevкли, M.**, Liang, Y-C., Yenisey, M.M. "Particle swarm optimization and differential evolution algorithms for job shop scheduling problems", *International Journal of Operational Research*, Vol. 3, No. 2, Oct. 2006, pp. 120-135.
 - ***Sevкли, M.**, Guner, A.R., "A Continuous Particle Swarm Optimization Algorithm for Uncapacitated Facility Location Problems", *Lecture Notes in Computer Science*, Vol. 4150, Sep. 2006, pp. 306-313.
 - ***Tasgetiren, M.F.**, Liang, Y.C., **Sevкли, M.**, Gencyilmaz, G., "Particle Swarm Optimization and Differential Evolution for Single Machine Total Weighted Tardiness Problem", *International Journal of Production Research*, Vol. 44, No. 22, May. 2006, pp. 4737 – 4754.
 - ***Sevкли, M.**, Aydin, M. E., "A Variable Neighbourhood Search Algorithm for Job Shop Scheduling Problems", *Lecture Notes in Computer Science*, Vol. 3906, Apr. 2006, pp. 261-271.
 - ***Tasgetiren, M.F.**, **Sevкли, M.**, Liang, Y.C., Gencyilmaz, G., "Particle Swarm Optimization Algorithm for Permutation Flowshop Sequencing Problem", *Lecture Notes in Computer Science*, Vol. 3172, Nov. 2004, pp. 382 – 389.
 - Zaim, S., **Sevкли, M.**, Tarim, M., "Fuzzy Analytic Hierarchy Based Approach for Supplier Selection", *Journal of Euromarketing*, Vol. 12, No. 3/4, Nov. 2003, pp. 147-176.
 - Zaim, S., **Sevкли, M.**, "The Methodology of Quality Function Deployment with Crisp and Fuzzy Approaches and an Application in the Turkish Shampoo Industry", *Journal of Economic and Social Research*, Vol. 4, No. 1, Oct. 2002, pp. 27-53

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- Unal, Y.Z., **Sevкли, M.**, Uysal, O., Turkyilmaz, A., "A new mixed integer linear programming approach to integrate fleet assignment and aircraft routing", Transportation Research Procedia, 10th International Conference on Air Transport – INAIR 2021, Malta, 2021
 - Kibria, G.MD., **Sevкли, M.** "Machine Learning Algorithms: An application for credit card approval", The Eighth Global Supply Chain Management Conference (GSCM 2020) in Toledo, Ohio, USA, December 3-6 & 10-13, 2020.
 - Kibria, G.MD., **Sevкли, M.** "Application of deep learning for credit card approval: a comparison with two machine learning techniques", ICISDM 2020, 4th International Conference on Information System and Data Mining, May 15-17, 2020, The University of Hawaii at Hilo, Hawaii, USA.
 - **Sevкли, M.**, Sevкли, A.Z., Cosgun, O. "Comparison of Data Mining and Mathematical Models for Estimating Fuel Consumption of Passenger Vehicles", 14th Annual Midwest Association for Information Systems Conference, University of Wisconsin, Oshkosh, May 21–22, 2019.
 - Goceri, M. S., Uysal, O., **Sevкли M.**, Turkyilmaz, A. "An Application of AHP Weighted Topsis Method for Livable City Selection", 24th International Conference on Multiple Criteria Decision Making, Ottawa, Canada, July 10-14, 2017.
 - Capraz, A. G., Ozel, P., **Sevкли, M.**, Beyca, O.F., "Fuel Consumption Models Applied to Automobiles Using Real-time Data: A Comparison of Statistical Models", Procedia Computer Science, Volume 83, 2016, Pages 774–781, The 7th International Conference on Ambient Systems, Networks and Technologies (ANT 2016) / The 6th International Conference on Sustainable Energy Information Technology (SEIT-2016).
 - Camci, F., **Sevкли, M.**, Karakas, M., Jennions, I.K. "Maintenance Planning with Prognostics for Systems Located in Various Places", Annual Conference of Prognostics and Health Management Society 2012, Hyatt Regency Minneapolis 1300 Nicollet Mall Minneapolis, Minnesota, USA 55403.
 - Oztekin, M.S., **Sevкли, M.**, Uysal, O. "A Discrete Particle Swarm Optimization and Differential Evolution Algorithms for Flow Shop Scheduling Problem", META 2010, Djerba Island, Tunisia, Oct. 2010.
 - **Sevкли, M.**, Zaim, S., Turkyilmaz, A., Satir, M. "An Application of Fuzzy Topsis Method for Supplier Selection", WCCI 2010, S, Jul. 2010, IEEE World Congress on Computational Intelligence, pp. 643-649.
 - **Sevкли, M.**, Uysal, H., "A Modified Variable Neighborhood Search for Minimizing the Makespan on Identical Parallel Machines", The 39th International Conference on Computers & Industrial Engineering (CIE39), Troyes/France, Jul. 2009.
 - **Sevкли, M.**, Aydin M.E., "Variable Neighborhood Tabu Search Algorithms for Permutation Flow shop Scheduling Problem", The 2009 World Congress in Computer Science, Computer Engineering, and Applied Computing, Las Vegas, Nevada, USA, Jul. 2009.
 - Berdinyazov, A., Camci, F., **Sevкли, M.**, Baskan, S., "Economic analysis of maintenance policies for a system", Diagnostics for Electric Machines, Power Electronics and Drives, IEEE International Symposium SDEMPED 2009, Jul. 2009.
 - Atamuradov, V.; Camci, F.; Baskan, S., **Sevкли, M.**, "Failure diagnostics for railway point machines using expert systems", Diagnostics for Electric Machines, Power Electronics and Drives, IEEE International Symposium SDEMPED 2009, Jul. 2009.
 - Satir, M., Manisali, E., **Sevкли, M.**, "A Comparison Study between Discrete and Continuous Particle Swarm Optimization for Quadratic Assignment Problems", The 2nd International Conference on Metaheuristics and Nature Inspired Computing, META'08, Tunis/Tunus, Oct. 2008.
 - **Sevкли, M.**, Zaim S., Turkyilmaz A., "A Fuzzy ELECTRE Approach for Supplier Selection", The 2nd International Conference on Metaheuristics and Nature Inspired Computing, META'08, Tunis/Tunus, Oct. 2008.
 - **Sevкли, M.**, Uysal, O., Sari, M., "A Mixed-Integer Mathematical Model for Exam Timetabling: A Case Study at Fatih University Vocational School", The 7th International Conference on the Practice and Theory of Automated Timetabling, Montreal/Canada, Aug. 2008.
 - **Sevкли, M.** Aydin, M. E., "A Variable Neighbourhood Search Algorithm for Job Shop Scheduling Problems", 6th European Conference on Evolutionary Computation in Combinatorial Optimization, Budapest, Hungary, Apr. 2006
 - Tasgetiren, M.F., **Sevкли, M.**, Liang, Y.C., Gencyilmaz, G., "PSO and DE Algorithms for the Quadratic Assignment Problem", Istanbul/TURKEY, Jun. 2005, Proceeding of 35th International Conference on Computer & Industrial Engineering, 2, pp. 1875-1880.
 - Tasgetiren, F., **Sevкли, M.**, Liang, Y.C., Gencyilmaz, G., "Particle Swarm Optimization Algorithm for Permutation Flowshop Sequencing Problem", 4th International Workshop on Ant Colony Optimization and Swarm Intelligence (ANTS 2004), Brussel/Belgium, Sep. 2004.
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- 📖 Tasgetiren, F., **Sevklı, M.**, Liang, Y.C., Gencyilmaz, G., "Particle Swarm Optimization Algorithm For Single Machine Total Weighted Tardiness Problem", Congress of Evolutionary Computation, Portland, Oregon, USA, Jun. 2004.
 - 📖 **Sevklı M.**, Turkyılmaz, A., Aksoy, M. S., "Banknote Recognition Using Inductive Learning", International Conference on Fuzzy Systems and Soft Computational Intelligence in Management, İstanbul/Turkey, May. 2002.
 - 📖 Turkyılmaz, A., **Sevklı M.**, Aksoy, M. S., "Quality Control of Ceramic Tiles Using Inductive Learning", 2nd International Conference on Responsive Manufacturing, İstanbul/Turkey, May. 2002.

BOOK CHAPTERS

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- 📖 "Fuzzy Analytic Hierarchy Based Approach for Supplier Selection", (Selim Zaim, **Mehmet Sevklı**, Mehves Tarım), in Euromarketing and the Future, Haworth Press, 01/01/2004, pp. 147-176.
 - 📖 "Sequential and Parallel Variable Neighbours Search Algorithms for Job Shop Scheduling", (Aydin, M. E. and **Sevklı, M.**), in Metaheuristics for Scheduling in Industrial and Manufacturing Applications, Springer-Verlag, Berlin in the Studies in Computational Intelligence (SCI) series, 01/07/2008, pp. 124-145.
 - 📖 "A Stochastically Perturbed Particle Swarm Optimization for Identical Parallel Machine Scheduling Problems", (**Sevklı, M.**, Sevklı, A.Z.) in Bio-Inspired Computational Algorithms and Their Applications, ISBN: 978-953-51-0214-4, Intech, 01/03/2012, pp. 371-382.

SUPERVISED Ph.D. and M.Sc. STUDENTS

Ph.D.



Ahmet Gurcan Capraz. "Determining the Optimal Speed of a Vehicle for Economical Fuel Consumption on a Specified Route According to the Slope of the Road." Fatih University, 2016.

M. Sc.



Hatice Uysal. "A Variable Neighborhood Search Algorithm for Identical Parallel Machine Problem." Fatih University, 2005.



Ali Rıza Güner. "A Discrete and Continuous Particle Swarm Optimization for Uncapacitated Facility Location Problems." Fatih University, 2005.



Mehmet Seyyid Öztekin. "Discrete Particle Swarm Optimization and Differential Evolution Algorithms for Scheduling Problems." Fatih University, 2009.



Ruslan Mamedsaidov. "Particle Swarm Optimization for P-Median Problems." Fatih University, 2009.



Mehmet Fatih Acar. "A Mathematical Modelling Approach for Exam Timetabling." Fatih University, 2010.



Muharrem Enis Çiftçi. "Design and Analysis of a New Regional Hub in Turkey." Fatih University, 2014.

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- 📖 Programming
 - Python
 - Java
 - C++
 - SQL
 - R
 - 📖 Optimization Software
 - Xpress MP
 - Gurobi
 - LINGO
 - 📖 Software
 - MS Power BI
 - ANYLOGIC
 - ARENA
 - Minitab
 - Tableau
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