Oguz Toragay

6328 Silverbrook W – West Bloomfield, MI, USA

📱 (+1) (256)200 1607   •   ✉ otoragay@ltu.edu   •   🌐 oguztoragay.github.io/

in oguztoragay   •   ⚥ oguztoragay   •   ⓘ 0000-0003-0690-2198   •   OR Stack Exchange

Education

Auburn University   **2018–2022**
Ph.D. in Industrial and Systems Engineering   *GPA: 4.00/4.00*
- Adviser: Dr. Daniel F. Silva
- Area of study: Operations Research, Additive Manufacturing & Topology Optimization

Auburn University   **2016–2018**
M.Eng. in Industrial and Systems Engineering   *GPA: 4.00/4.00*
- Adviser: Dr. Daniel F. Silva
- Area of study: Queueing Theory and Markov Decision Processes

Gazi University   **2007–2011**
M.Sc. in Industrial Engineering, Turkey/Ankara   *GPA: 3.28/4.00*
- Adviser: Dr. Murat Arikan
- Area of study: Multi-Objective Optimization and Multi-Attribute Decision Making

Khayyam University   **2000–2004**
B.Sc. in Applied Mathematics, Iran/Mashhad   *GPA: 3.07/4.00*
- Adviser: Dr. Alireza Salemkar
- Area of study: Group Theory & Rings Algebra

Research Interests

- Operations Research
- Mathematical Modeling
- Queueing theory
- Markov Decision Processes
- Metaheuristic Optimization
- Multi Attribute Decision Making
- Additive Manufacturing
- Topology Optimization
- Cyber security

Journal Papers

- Mohanta, K. K., **Toragay, O.**, "Enhanced performance evaluation through neutrosophic data envelopment analysis leveraging pentagonal neutrosophic numbers." J. Oper. Strateg Anal 1, no. 2 (2023): 70-80.
- **Toragay, O.**, Pouya, S, "A Monte Carlo simulation approach to the gap-time relationship in solving scheduling problem." Journal of Turkish Operations Management 7, no. 1 (2023): 1579-1590.
- **Toragay, O.**, Silva, D. F., Vinel, A., "A Hybrid Genetic Algorithm Approach for the Topology Optimization of Additively Manufactured Structures", *In preparation* for the Optimization and Engineering Journal
- **Toragay, O.**, Silva, D. F., Vinel, A., "On optimization of lightweight planar frame structures: an evolving ground structure approach", *Under review* with Structural and Multidisciplinary Optimization Journal
- **Toragay, O.**, Silva, D. F., Vinel, A., Shamsaei N., "Exact Global Optimization of Frame Structures for Additive Manufacturing", Struct Multidisc Optim 65, 97 (2022). https://doi.org/10.1007/s00158-022-03178-0
- **Toragay, O.**, Silva, D. F., "Fast Heuristic Approach for Control of Complex Authentication Systems", Applied Stochastic Models in Business and Industry, Vol: 37, Issue: 4, 2021
- **Toragay, O.**, Arikan, M., "Performance Evaluation of Faculty Departments by a Delphi Method Based on 2-Tuple fuzzy Linguistic Representation Model and TOPSIS", International Journal of Basic and Applied Sciences IJBAS-IJENS, Vol: 15, No: 05, 2015.
- **Toragay, O.**, Arikan, M., "Performance Evaluation of the Departments in Engineering College of a University by Utilizing TOPSIS and Fuzzy Delphi", Journal of Economics and Administrative Sciences, Vol: 16, No: 02, 2015.(Language: Turkish)

Conference Proceedings

○ Pouya, S., **Toragay, O.**, Mohammadi, M., "Predicting the Solution Time for Optimization Problems Using Machine Learning Case of Job Shop Scheduling Problem", 3rd International Conference on Optimization, Learning Algorithms and Applications (OL2A 2023), Ponta Delgada, Portugal.

○ **Toragay, O.**, Silva, D. F., Vinel, A., Shamsaei, N., "Exact Size and Shape Optimization of Additively Manufactured Lightweight Planar Frame Structures with Manufacturability Constraints and Modern Global Optimization Methods", 14th World Congress of Structural and Multidisciplinary Optimization 2021, Virtual Conference.

○ **Toragay, O.**, Arikan, M., "Academic Performance Evaluation of the Departments in Engineering College by Utilizing TOPSIS and Fuzzy Delphi", International Symposium on the Analytic Hierarchy Process 2014, Washington D.C., USA.

Professional Experience

Lawrence Technological University (LTU)   **USA**
Assistant Professor, The A. Leon Linton Department of Mechanical, Robotics, and Industrial Engineering   *Fall 2022*

Auburn University (AU)   **USA**
Graduate Research Assistant, Funded by FAA   *2018–2022*
○ **Topic**: Topology Optimization of Lightweight Structures for Additive Manufacturing.
○ **Tools**: Matlab, Python, Pyomo, Ampl & Abaqus

Auburn University   **USA**
Graduate Research Assistant   *2017–2018*
○ **Topic**: Applications of Queueing models and Markov Decision Processes in Secure Networks.
○ **Tools**: Parallel computing in Matlab & Mdp Toolbox.

United Nations High Commissioner for Refugees (UNHCR)   **Turkey**
RSD Scheduling Assistant   *2009–2015*
○ **Job Description**: Leading a team of four employees who prepared the weekly schedule for Refugee Status Determination and Protection interviews of the asylum-seekers in Turkey.
○ **Supervisor**: Mr. Resit Akif Atli

Teaching Experience

Advanced Optimization Techniques (Graduate level) (evaluations: 4.38/5)	*Spring 2023, LTU*
Simulation in Systems Design (evaluations: 3.70/5)	*Spring 2023, LTU*
Plant Layout (evaluations: 4.30/5)	*Spring 2023, LTU*
Applied Stochastic Optimization (Graduate level) (evaluations: 4.69/5)	*Fall 2022, LTU*
Production Planning and Control (evaluations: 4.72/5)	*Fall 2022, LTU*
Manufacturing Systems I – **Instructor of record** *(evaluations: 5/6)*	*Fall 2020, AU*
Manufacturing Systems I – Teaching Assistant & Lab Instructor	*2018 – 2021, AU*
Manufacturing Systems II – Teaching Assistant	*Fall 2017, AU*
Dynamic Programming – Teaching Assistant (Graduate Level)	*Spring 2017, AU*
Stochastic Optimization – Teaching Assistant (Graduate Level)	*Fall 2016, AU*
Probability and statistics – Teaching Assistant	*Spring 2016, AU*

Honors & Awards

2022-2024: Undergraduate Simulation teaching grant (Simio licenses worth 96000), Simio LLC

2022-2023: SEED research grant (5000), Lawrence Technological University

2021-2022: Outstanding PhD Student, Industrial and Systems Engineering Department, Auburn University

2016-2021: Full tuition scholarship, Auburn University

2017-2018: Informs Student Chapter Award at the level of Summa Cum Laude (*Position: Secretary*)

2016-2017: Informs Student Chapter Award at the level of Cum Laude (*Position: Webmaster*)

2007-2010: Full tuition scholarship, Gazi University, Provided by Turkish Education Ministry

Computer Skills

Programming: Matlab, Python (Numpy, Pandas, OOP), Linux VM

Optimization: Ampl, Pyomo, Cplex, Gurobi, Baron, Knitro, Ipopt, NEOS Server

Certificates

ASTM: Additive Manufacturing General Personnel Certificate (ASTM E2659-18 compliant certificate)

Selected Graduate Level Courses

- Optimization (Linear, Network, Heuristic)
- Integer and Non-linear Programming
- Multi-Criteria Decision Making
- Advanced Engineering Statistics I
- Sequencing and Scheduling
- Fuzzy Set Theory
- Production Systems Planning
- Data Visualization
- Stochastic Operations Research
- Production Inventory Control
- Manufacturing and Production Economy
- Information Technology for Operations

Professional References

Dr. Daniel F. Silva

Associate Professor, Department of Industrial and Systems Engineering, Auburn University   *Graduate Advisor*
E-mail: dfs0008@auburn.edu
Phone: +1-334-844-8273

Dr. Alexander Vinel

Associate Professor, Department of Industrial and Systems Engineering, Auburn University   *Graduate Co-Advisor*
E-mail: azv0019@auburn.edu
Phone: +1-334-844-1425

Dr. Nima Shamsaei

Professor, Department of Mechanical Engineering, Auburn University   *Graduate Co-Advisor*
E-mail: nzs0058@auburn.edu
Phone: +1-334-844-4839

Dr. Babek Erdebilli

Associate Professor, Department of Industrial Engineering, Ankara Yildirim Beyazit University
E-mail: berdebilli@ybu.edu.tr
Phone: +90-530-183-1051

Dr. Richard Garnett

Lecturer, Department of Industrial and Systems Engineering, Auburn University   *Teaching Mentor*
E-mail: rfg0004@auburn.edu
Phone: +1-334-844-1477