

# Oguz Toragay

oguztoragay.github.io/ • Last update: Jan 2025

## Education

<b>Ph.D., Industrial and Systems Engineering</b> <i>Auburn University, Auburn, AL</i>	2016–2022
<b>M.Sc., Industrial Engineering</b> <i>Gazi University, Ankara, Türkiye</i>	2007–2011
<b>B.Sc., Applied Mathematics</b> <i>Khayyam University, Mashhad, Iran</i>	2000–2004

## Professional Experience

<b>Assistant Professor, Lawrence Technological University</b>	2022–Present
<b>Graduate Research Assistant, Auburn University</b>	2016–2022
<b>RSD Scheduling Assistant</b> <i>United Nations High Commissioner for Refugees (UNHCR)</i>	2009–2015

## Teaching Experience

<i>Advanced Optimization Techniques (Graduate level) (4.38/5, 4.58/5)</i>	<i>S23, S24</i>
<i>Applied Stochastic Optimization (Graduate level) (4.69/5, 4.57/5, 4.85/5)</i>	<i>F22, F23, F24</i>
<i>Simulation in Systems Design (3.70/5, 4.83/5, 5/5)</i>	<i>S23, S24, F24</i>
<i>Plant Layout (4.30/5, 4.63/5)</i>	<i>S23, S24</i>
<i>Operations Research Techniques (4.00/5)</i>	<i>F24</i>
<i>Statistical Methods for Process Improvement (4.72/5)</i>	<i>F23</i>
<i>Production Planning and Control (4.72/5)</i>	<i>F22</i>

## Research Interests

- Operations Research
- Data Analytics
- Stochastic Processes
- Advance Manufacturing
- Supply chain and Logistics
- Optimization under Uncertainty

## Publications

- J10 Mohabbati, N., Alavi, S., **Toragay, O.**, "Sequencing and Scheduling of Drones for traffic monitoring and emergency responses", (In preparation for Computers & Operations Research)
- J09 Abdollahzadeh, B., Javadi, H., **Torağay, O.** et al. The green marine waste collector routing optimization with puma selectison-based neighborhood search algorithm. Cluster Comput 28, 80 (2025). <https://doi.org/10.1007/s10586-024-04812-w>
- J08 **Toragay, O.**, Silva, D. F., Vinel, A., "On optimization of lightweight planar frame structures: an evolving ground structure approach", Struct and Multidisc Optim 67, 5 (2024). <https://doi.org/10.1007/s00158-024-03796-w>
- J07 Pouya, S., **Toragay, O.**, and Mohammadi, M., "Predicting the Solution Time for Optimization Problems Using Machine Learning." In International Conference on Optimization, Learning Algorithms and Applications, pp. 450-465. Springer, Cham, (2024). [https://doi.org/10.1007/978-3-031-53025-8\\_31](https://doi.org/10.1007/978-3-031-53025-8_31)
- J06 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.
- J05 **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. <https://doi.org/10.56554/jtom.1286288>
- J04 **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>
- J03 **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
- J02 **Toragay, O.**, Arıkan, 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.
- J01 **Toragay, O.**, Arıkan, 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)
- C03 Pouya, S., **Toragay, O.**, A Study on the Gap-Time Relationship in Solving Scheduling Problem, INFORMS Annual Meeting 2023, Phoenix, Arizona
- C02 **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", 14<sup>th</sup> World Congress of Structural and Multidisciplinary Optimization 2021, Virtual Conference.

C01 **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.

## Honors, Awards, Grants

**2024-2025:** Equipment: MRI: Track #1 Acquisition of 3D Metal Printer for Advanced Additive Manufacturing to Enable Interdisciplinary Research, Education and Training \$772,886 - Co-PI, Pending)

**2024-2025:** Material and Processes for Additive Manufacturing (DoD DURIP Grant \$386,678 - PI, Pending)

**2022-2024:** Undergraduate Simulation teaching grant (Simio LLCs, Simio software license \$96000)

**2022-2023:** SEED research grant (LTU \$5000)

**2021-2022:** Outstanding PhD Student, Industrial and Systems Engineering Department, 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*)

## Computer Skills

**Programming:** Python, Matlab, R   **Packages:** NumPy, Pandas, SciPy, NetworkX, Scikit-Learn, TensorFlow, PyTorch

**Optimization:** AMPL, Pyomo, OR-tools, Gurobipy, Hexaly, Gurobi, Cplex, Baron, Ipopt, NEOS Server

**Simulation:** Simio

## Certificates

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

**Coursera:** Google Cloud Fundamentals: Core Infrastructure (Credential ID: 0PS88H3NYH2J)

**Udemy:** Machine Learning A-Z: AI, Python & R (Certificate no: UC-fb1e9ac2-0bd3-4d89-b0e1-ed791bcd598f)

## Selected Graduate Level Courses

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