SECIL SOZUER

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EDUCATION

Lehigh University, *Bethlehem, PA*

- **Ph.D.** Industrial and System Engineering, GPA 3.72 (Expected 2024 July)
- **M.Eng.** Industrial and System Engineering 2015-2017
- **Research Interests:** Healthcare Optimization, Supervised Machine Learning, Nonlinear Optimization, Scheduling and Heuristic Algorithm Development

Bilkent University, *Ankara, Turkey*

- **M.S.** Industrial Engineering 2012 - 2015
- **B.S.** Industrial Engineering 2008 - 2012

ICHEC Brussels Management Schools, *Brussels, Belgium*

- Exchange Student, Erasmus Program Spring 2014

LANGUAGE AND TECHNICAL SKILLS

Language	Turkish (Native), English (Fluent), French (Conversational)
Software Skills	C++, Python, PowerBI, PySpark, R, AMPL, SQL, Matlab, AIMMS, Tableau, ARENA, FlexSim HC, SAS 9.4, AUTOCAD

RESEARCH AND INDUSTRY EXPERIENCE

PhD Intern, Data Engineer, *Sanofi Pasteur* Summer 2023
- Worked on life sciences applications, and provided technical trainings at Sanofi Digital
- Built and maintained robust data infrastructure, ensuring data quality, and enabling reliable data access

PhD Intern, Data Science, *Sanofi Pasteur* Summer 2022
- Worked on data driven management and production process within the Sanofi Digital team
- Conducted research in data science and Robotic Process Automation for Manufacturing Excellence

Lehigh/United Nations Youth Representative, *United Nations (Health Focus)* December 2020- April 2022
- Establish connections at the World Health Organization, UNICEF, UNFPA and other related UN agencies
- Conducted research aligned with the UN Sustainable Development Goals

PhD Intern, Vaccine Epidemiology Modeling, *Sanofi Pasteur* June 2018- November 2019
- Conducted research within Regional Epidemiology and Health Economics team
- Assessed vaccine efficacy and predictive factors using machine learning, PERR Analysis, and biostatistics

PhD Intern, Healthcare Systems Engineer, *Geisinger Medical Center* Summer 2017
- Developed an optimization model on AIMMS for the Provider Optimization Project
- Conducted large-scale data analysis within the Department of Healthcare Analytics

Researcher, *Lehigh University* 2016 - Present
- Worked on Simulation Based Optimization Algorithms in Healthcare Systems
- Published a book chapter on Robust Optimization

Research & Teaching Assistant Instructor, 2012- Present
- Lehigh University: Business Simulation Game, Simulation, Optimization Models & Applications
- Bilkent University: Stochastic Processes, Intro. to Optimization, Modeling & Methods in Optimization

SELECTED TECHNICAL PROJECTS

Advanced Topics in Business Analytics, *Lehigh University*
- Worked on Credit Rating Assessment problem (Binary Classification Model)
- Implemented Machine Learning Algorithms (Stepwise Logistic Regression, Random Forest, Boosted Tree, SVM) using R

Special Topics: SAS Programming, *Lehigh University*
- Worked on the big data about hospital readmission rates dataset and conducted logistic regression
- Implemented Iteratively Reweighted Least Squares Algorithm using SAS IML

Mining of Massive Dataset, *Lehigh University*
- Developed a predictive model for Twitter User Gender Classification
- Conducted Support Vector Machine analysis using Machine Learning Libraries of Python

Computational Methods In Optimization, *Lehigh University*
- Coded several sorting algorithms and profiled their performance on large data sets
- Constructed a multi-thread parallelized LBFGS optimization algorithm

Nonlinear Programming, *Lehigh University*
- Developed a MATLAB implementation of line search and trust region methods
- Tested the results on unconstrained nonlinear problems

INDUSTRY PROJECTS

- **Secil Sozuer**, Andrea Raffay, "Factory Control Tower Data Analytics, Quality Management Metrics, FFIP Process", Sanofi Pasteur (Swiftwater PA), 2023.
- **Secil Sozuer**, Amelia Conway, "Quality Systems Deviation Metric Chart, Minor Track & Trend Dashboard, Skills Matrix Visualization using Power BI and SQL", Sanofi Pasteur (Swiftwater PA), 2022.
- **Secil Sozuer**, Edward Thommes, Robert H. Storer, "The role of pneumonia/influenza in hospital readmissions: Burden and predictive factors via machine learning", Sanofi Pasteur (Swiftwater PA), 2019.
- **Secil Sozuer**, Edward Thommes, "Relative Vaccine Effectiveness of Cell-based Versus Standard Influenza Vaccines", Sanofi Pasteur (Swiftwater PA), 2018.
- **Secil Sozuer**, Poorani Selvaraj, "Demand Based Provider FTE Optimization Model to Minimize Physician Access Time", Geisinger Medical Center (Danville, PA), 2017.

AWARDS & HONORS

PhD Student of the Year Award, *Lehigh University*	2023
Grace Hopper Celebration Scholarship, *AnitaB.org*	2022
INFORMS Winter Simulation Conference - Travel Grant, *National Science Foundation (NSF)*	2019
Teaching Assistant - College of Business and Economics, *Lehigh University*	2016-2024
Rossin Doctoral Fellowship, *Lehigh University*	2016-2017
Deans Doctoral Assistantship, *Lehigh University*	2015-2016
Full grant from Erasmus Program, *Ministry for European Union Affairs, Republic of Turkey*	Spring 2014
Graduate School Funding, *The Scientific and Technological Research Council of Turkey (TUBITAK)*	2012-2014
Full Merit-based Scholarship including housing and monthly stipend, *Bilkent University*	2008-2012

PROFESSIONAL AFFILIATIONS

United Nations Youth Representative (Health focus), Lehigh University
Industrial & Systems Engineering Department, PhD Representative, Lehigh University
INFORMS (Institute for Operations Research and the Management Sciences), Lehigh University Chapter
ESTIEM (European Students of Industrial Engineering and Management), Bilkent University