CURRICULUM VITAE

January 2024

PERSONAL DATA

First Name: Gizem
Surname: TEMELCAN ERGENECOSAR
E-mail: gizemtemelcan@beykoz.edu.tr

RESEARCH INTEREST

Optimization; Linear and Nonlinear Programming Problems, Operational Research, Fuzzy Mathematics.

EDUCATION

2014 - 2020	Yildiz Technical University, Ph.D. Major: Mathematical Engineering Advisor: Inci Albayrak, Prof. Ph.D. Co-Advisor: Hale Gonce Kocken, Assoc. Prof. Ph.D. Thesis: Optimization of The System Optimum Fuzzy Traffic Assignment Problem
2011 - 2013	Yildiz Technical University, Master. Major: Mathematical Engineering Advisor: Mustafa Sivri, Prof. Ph.D. Thesis: Solution of Differential Equations Using Differential Quadrature Method
2011 - 2008	Yildiz Technical University, Bachelor's Degree. Major: Mathematics

ACADEMIC EMPLOYMENT

September 2020- Present:	**Assistant Professor,** Beykoz University
September 2017 – August 2020:	**Lecturer,** Istanbul Aydin University

HONORS AND AWARDS

2011	**Honored Student** Graduating from university with honors' degree

PUBLICATIONS

PEER-REVIEWED JOURNAL ARTICLES

1. **Temelcan, G. E.** (2024). Solution of a Multi-Objective Linear Programming Problem Having Rough Interval Coefficients Using Zero-Sum Game, İstanbul Ticaret Üniversitesi Fen Bilimleri Dergisi, 23(45), 97-113.

2. Insel, M.A., Karakus, S., **Temelcan, G**., Kocken, H.G., and Albayrak, I. (2023). Handling Uncertainty İn Rheological Properties Of Green Eggshell Nanocomposites By A Fuzzy-Hybrid Modeling Approach: A Comparative Study. Physica Scripta, 98(3), 035001.

3. Kocken, H.G., Insel, M.A., **Temelcan, G**., Karakus, S., and Albayrak, I. (2023). On Modeling of Surface Tension of CMC-α-Fe2O3 Nanoparticles by Fuzzy-Hybrid Approach: A Comparison Study, The Canadian Journal of Chemical Engineering.

4. Temelcan, G. (2023). A Solution Algorithm For Finding The Best And The Worst Fuzzy Compromise Solutions Of Fuzzy Rough Linear Programming Problem With Triangular Fuzzy Rough Number Coefficients. Granular Computing, 8(3), 479-489. 1-11.

5. Temelcan, G., Kocken, H. G., and Albayrak, I. (2022). A Game Theory-based Approach to Fuzzy Linear Transportation Problem, Fuzzy Logic and Modeling in Engineering , vol.1, no.2, pp.28-33.

6. Temelcan, G., Sivri, M., and Albayrak, I. (2022). Solving Multi-Objective Linear Fractional Programming Problems via Zero-Sum Game. Applications and Applied Mathematics: An International Journal (AAM), 17(2), 12 pages.

7. Temelcan, G., Kocken, H. G., and Albayrak, I. (2022). Finding Compromise Solutions for Fully Fuzzy Multi-Objective Linear Programming Problems by Using Game Theory Approach. Journal of Intelligent & Fuzzy Systems, 42(1), 283-293. DOI:10.3233/JIFS-219192

8. Temelcan, G., Gonce Kocken, H., and Albayrak, I. (2021). Fuzzy modelling of static system optimum traffic assignment problem having multi origin-destination pair, Socio-Economic Planning Sciences, Volume 77, 101024. https://doi.org/10.1016/j.seps.2021.101024.

9. Temelcan, G., Kocken, H. G., and Albayrak, I. (2022). Finding Compromise Solutions for Fully Fuzzy Multi-Objective Linear Programming Problems by Using Game Theory Approach. Journal of Intelligent & Fuzzy Systems, 42(1), 283-293. DOI:10.3233/JIFS-219192

10. Temelcan, G., Gonce Kocken, H., and Albayrak, I. (2021). Fuzzy modelling of static system optimum traffic assignment problem having multi origin-destination pair, Socio-Economic Planning Sciences, Volume 77, 101024. https://doi.org/10.1016/j.seps.2021.101024.

11. Sivri, M., Albayrak, I., Simsek Alan, K., and **Temelcan, G.** (2020). A Solution Approach for a Class of Parametric Linear Programming Problems. Igdir Universitesi Fen Bilimleri Enstitusu Dergisi, 10(4),2901-2906.

12. Temelcan, G., Sivri, M. & Albayrak, I. (2020). A New Iterative Linearization Approach for Solving Nonlinear Equations Systems. An International Journal of Optimization and Control: Theories & Applications (IJOCTA), 10(1), 47-54.

13. Temelcan, G., Kocken, H.G. & Albayrak, I. (2019). System Optimum Fuzzy Traffic Assignment Problem. Promet-Traffic & Transportation (PTT), 31(6), 611-620.

14. Albayrak, I., Sivri, M., & **Temelcan, G.** (2019). A New Successive Linearization Approach for Solving Nonlinear Programming Problems. Applications & Applied Mathematics (AAM), 14(1).

15. Albayrak, I., Sivri, M., & **Temelcan, G**. (2018). A New Iterative Approach for Solving Nonlinear Programming Problem. New Trends in Mathematical Sciences (NTMSCI), 6(2), 68-77.

16. Albayrak, I., Sivri, M., & **Temelcan, G**. (2018). A Solution Algorithm for Interval Transportation Problems via Time-Cost Tradeoff. Journal of Advances in Mathematics (JAM), 14(2), 7691-7701.

17. Sivri, M., Albayrak, I., & **Temelcan, G.** (2018). A Novel Solution Approach Using Linearization Technique for Nonlinear Programming Problems. International Journal of Computer Applications, 181(12), 1-5.

18. Sivri, M., Albayrak, I., & **Temelcan, G.** (2018). A Novel Approach for Solving Quadratic Fractional Programming Problems. Croatian Operational Research Review (CRORR), 9(2), 199-209.

INVITED BOOK CHAPTERS

1. **Temelcan, G.**, Kocken, H. G., and Albayrak, I. (2023). Fuzzy Complex System of Linear Equations, in Encyclopedia of Data Science and Machine Learning (pp. 1979- 1992), IGI Global.
2. **Temelcan, G.** (February 2021). Bulanık Yaklaşımın Lojistikte Kullanımı. Akkartal, GR (Ed.), in Lojistikte Farklı Yaklaşımlar (p.113-138). ISBN: 978-625-7296-81-6, Nobel Bilimsel Eserler, Nobel Akademik Yayıncılık, Ankara, Turkey.
3. **Temelcan, G.,** Kocken, H. G., & Albayrak, I. (2021, August). A Numerical Method for Integration of a Fuzzy Function over a Fuzzy Interval. In International Conference on Intelligent and Fuzzy Systems (pp. 281-288). Springer, Cham.
4. **Temelcan, G.,** Albayrak, I., Kocken, H.G. and Sivri, M. (2020). "Solving Fuzzy Multi-Objective Linear Programming Problems Using Multi-Player Zero-Sum Game", In *International Conference on Intelligent and Fuzzy Systems* (pp. 1483-1490). ISBN 978-3-030-51155-5, Springer, Cham.
5. **Temelcan, G.**, Kocken, H.G., and Albayrak, I., "Solving the System Optimum Static Traffic Assignment Problem with Single Origin Destination Pair in Fuzzy Environment", Progress in Intelligent Decision Science; Proceeding of IDS 2020, 521-530. Softcover ISBN: 978-3-030-66500-5, Springer.

MANUSCRIPTS IN PREPARATION/SUBMITTED FOR REVIEW

1. **Temelcan, G.,** Albayrak, I., Emiroglu, I., and Sivri, M. (Under Review). An Algorithm for Finding an Optimal Solution to the Pure Integer Linear Programming Problems within Candidate Solutions.
2. **Temelcan, G.**, Gonce Kocken, H., and Albayrak, I. (Under Review) Existence and Uniqueness of the System Optimum Fuzzy Traffic Assignment Problem.

SUPPORTED PROJECTS

1. Erkan, O., Kulahcioglu, B, and Temelcan, G. (BAP- 2022). Recommendation System with Data Mining Methods in Academic Social Networks.
2. Erkan, O., Demirel, I.B., Kulahcioglu, B., and Temelcan, G. (BAP – 2022). Machine Learning Based Long-Term Solar Radiation Forecasting Using Meteorological Dataset.
3. Kocken, H.G., Albayrak, I., and Temelcan, G. (TUBITAK 1001- Rejected). Developing A New Solution Approach to Dual Fuzzy System of Linear Equations.

CONFERENCE PRESENTATIONS

TALKS

1. Yılmaz, K.Ş. and **Temelcan, E.G.** "Ağır Ticari Araçların Toplam Boş Ağırlığının Belirlenmesi için Parça Ağırlıklarının Modellenmesi", 43. Yoneylem Arastirması ve Endustri Muhendisligi (YAEM), ((2-4 Ekim, 2024), Trabzon, Turkey.
2. **Temelcan, G.** and Demirel, I.B.T., "Enhancing Sustainability Through Machine Learning-Based Temperature Estimation: A Comparative Study of Atmospheric Data and Satellite Observations", 42. Yoneylem Arastirması ve Endustri Muhendisligi (YAEM),(1-3 Kasım, 2023), Gaziantep, Turkey.
3. **Temelcan, G.** and Kazan, C., "A Multi-Objective Vehicle Routing Model to Minimize Total Cost nd Maximum Travel Distance", 42. Yoneylem Arastirması ve Endustri Muhendisligi (YAEM), (1-3 Kasım, 2023), Gaziantep, Turkey.

4. Kazan, C. and **Temelcan, G. E., "**A Multi-Objective Vehicle Routing Model to Minimize Maximum Travel Time of the Longest Tour Under Stochastic Travel Times Between Nodes", The 3rd International Conference on Applied Mathematics in Engineering (ICAME'24) 26-28 June 2024, Ayvalık- Balıkesir, Türkiye.
5. **Temelcan, G.,** Kocken, H.G., Sade, J. and Albayrak, I., "On the Solution Fuzzy Complex Linear Equation Systems", VI. International Halich Congress On Multidisciplinary Scientific Research (Online), August 18-20, 2023, Istanbul. In: Eliacik M., Gafurova G. (eds) ISBN: 978-625-367-260-7, https://www.izdas.org/_files/ugd/614b1f_b2c703bb4fc442309a3723f588792957.pdf
6. **Temelcan, G.,** Kocken, H.G. and Albayrak, I., "A Numerical Method for Integration of a Fuzzy Function over a Fuzzy Interval", Intelligent and Fuzzy System Conference (INFUS) (24-26 August 2021), Istanbul, Turkey.
7. **Temelcan, G.**, Gonce Kocken, H., and Albayrak, I., "Solving the System Optimum Static Traffic Assignment Problem with Single Origin Destination Pair in Fuzzy Environment", The 4-th International Conference on Intelligent Decision Science (IDS) (7-8 August 2020), Istanbul, Turkey.
8. **Temelcan, G.,** Albayrak, I., Kocken, H.G. and Sivri, M., "Solving Fuzzy Multi-Objective Linear Programming Problems Using Multi-Player Zero-Sum Game", Intelligent and Fuzzy System Conference (INFUS) (21-23 July 2020), Istanbul, Turkey.
9. Sivri, M., Kocken, H.G., Albayrak, I., **Temelcan, G**. and Esen, H., "A New Method for Generating Some Extreme Points of a Convex Polyhedron for Solving Multi-Objective Linear Programming Problems Using Game Theory Approach", International Conference on Mathematical Studies and Applications (ICMSA) (4-6 October 2018), Karaman, Turkey.
10. **Temelcan, G.**, Albayrak, I., & Sivri, M., "A Solution Procedure for Interval Transportation Problems via Time-Cost Tradeoff", XIII Balkan Conference on Operational Research (BALCOR), (25-28 May 2018), Belgrade, Serbia.
11. **Temelcan, G.**, Albayrak, I., & Kocken, H.G., "User-Optimum Fuzzy Traffic Assignment Problem",XIII Balkan Conference on Operational Research (BALCOR), (25-28 May 2018), Belgrade, Serbia.
12. **Temelcan, G.**, Kocken, H.G. and Albayrak, I., "Fuzzy Analysis of a Traffic Assignment Problem", 37. Yoneylem Arastirması ve Endustri Muhendisligi (YAEM), (5-7 July 2017), Istanbul, Turkey.
13. Sivri, M., Albayrak, I. and **Temelcan, G.**, "A New Incremental Technique for Solving Nonlinear Programming Problems", International Conference on Applied Analysis and Mathematical Modeling (ICAAM), (3-7 July 2017), Istanbul, Turkey.
14. Albayrak, I., Sivri, M. and **Temelcan, G.**, "A New Successive Linearization Approach for Solving Nonlinear Programming Problems", International Conference on Pure and Applied Sciences (ICPAS), (2-6 February 2017), Dubai.
15. **Temelcan, G**., Kocken, H.G. and Albayrak, I., "Fuzzy Equilibrium Analysis of a Transportation Network Problem", International IFS and Contemporary Mathematics Conference (IFSCOM), (29 August-1 September 2016), Mersin, Turkey.

TEACHING EXPERIENCE

INSTRUCTOR OF RECORD

Fall (2023)	**Calculus I/II,** Bahcesehir University
Spring (2022)	**Discrete Mathematics**, Fenerbahce University
Spring (2022)	**Algorithm Analysis**, Beykoz University

Fall (2021)	**Network Theory Applications in Computer Engineering** (Master Course), Beykoz University
Fall (2020, 2021)	**Discrete Computational Structures,** Beykoz University
Fall (2020)	**Calculus I,** Beykoz University
Spring-2021	**Digital Transformation and Artificial Intelligence**, Beykoz University
Spring-2021	**Calculus II**, Beykoz University

RELEVANT SKILLS

- Programming ability in C++ and Python (basic level)
- Knowledge of GAMS software program
- Upper intermediate level in English

MEMBERSHIPS/AFFILIATIONS

Researcher in Multidisciplinary Nanoscience Technology (MNST) Research Group, Istanbul University-Cerrahpasa (link: https://avesis.istanbulc.edu.tr/arastirma-grubu/mnst)