Doğuş Berk Koçak

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EDUCATION

Bilkent University — Industrial Engineering PhD

2025 – Present
Ankara, Turkey

Bilkent University — Industrial Engineering MSc
CGPA 3.81 / 4.00

2022 – 2025
Ankara, Turkey

Middle East Technical University — Industrial Engineering BSc
CGPA 3.21 / 4.00

2016 – 2022
Ankara, Turkey

RESEARCH EXPERIENCE

Predictive Modeling of Vehicle Failures with Hierarchical Bayesian Methods for Workforce Planning

- Conducted an empirical study on vehicle reliability to support data-driven workforce planning.
- Developed hierarchical Bayesian models to predict vehicle failure times and embedded them in a sequential decision-making framework.
- **Methodologies:** Bayesian Hierarchical Modeling, MCMC, Stochastic Processes, Markov Decision Process

Addressing Coverage Holes with Multiple Mobile Sensors

- Research project funded by The Scientific and Technological Research Council of Turkey (TÜBİTAK).
- Studied the coverage hole recovery problem in wireless sensor networks using mobile sensors.
- **Methodologies:** Optimization (Mixed Integer Programming, Goal Programming), Heuristic Design

TEACHING EXPERIENCE

Applied Data Analysis — IE451

2024 – Present

- Conducted labs and prepared materials on statistical modeling and data analysis using R

Production Planning — IE375

2024 – 2025

- Held office hours and graded quizzes for topics including forecasting, production–inventory systems, inventory and lot-sizing models, multi-echelon supply networks, and scheduling.

Stochastic Models — IE325

2023 – 2025

- Prepared quizzes, homework, and recitation materials; conducted bi-weekly recitations on probability, Markov chains, Poisson processes, continuous-time Markov chains, and queueing models

Manufacturing Processes and Operations Analysis — IE272

2022 – 2023

- Conducted CAD software labs and assignments, assisted term projects on manufacturing system simulation

INDUSTRY EXPERIENCE

System Design Member — Arçelik A.Ş. x Middle East Technical University

Oct 2021 – June 2022
Eskişehir, Turkey

- Decision support system for material requirement planning in refrigerator plant

Business Development Intern — UrbanFarm DE

Jul 2021 – Oct 2021
Berlin, Germany

- Granted by Erasmus+ Programme
- Communicated with customers and tracked sales operations using automation tools

Business Development Intern — TOFAŞ Türk Otomobil Fabrikası A.Ş.

Feb 2021 – Mar 2021
Istanbul, Turkey

- Partner of FCA, manufacturer of Fiat brand passenger cars and commercial vehicles
- Private lease and used cars department

Process Quality Intern — Türk Traktor ve Ziraat Makineleri A.Ş.

Aug 2020 – Sep 2020
Ankara, Turkey

- Turk Traktor is the producer of New Holland and Case IH brand tractors in Turkey
- Improved the management information system of quality control processes

Project Intern — QNB Finansbank A.Ş.

Jul 2020 – Aug 2020
Istanbul, Turkey

- Project on increasing the number of active customers in the mass segment

Process Engineering Intern — Eti Gıda Sanayi ve Ticaret A.Ş.

Jun 2019 – Jul 2019
Eskişehir, Turkey

- Productivity analysis, work and time study

Skills

Languages: Turkish, English (TOEFL: 101)

Computer Languages: `Python, R, C++, MATLAB`

Optimization Tools: Gurobi, IBM CPLEX, GAMS

Others: LaTeX, Excel VBA, SQL, Minitab, Arena

Achievements

Outstanding Teaching Award: Recognized annually for excellence in teaching at Bilkent University

Graduate Success Scholarship: Awarded to promising students for outstanding academic potential and commitment to future graduate studies by The Scientific and Technological Council of Turkey

Ranked in the top 0.05% (999th out of 2 million students): The University Entrance Exam (YGS/LYS)

Extracurricular Activity

- Five years of debate experience participated in many organizations as a competitor and chair representing METU Debate Society. Additionally, served as a debate trainer in universities and high schools in Ankara. Debate topics included social issues such as individual-state relations, ethics, morality, media, minority rights, law, etc.