

ARDA NOYAN KARAŞOĞLU

Industrial Engineer · Optimization & Business Analytics

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EDUCATION

Bilkent University, Ankara, Turkey

Sep 2021 – Jun 2026

Bachelor of Science in Industrial Engineering (ABET-accredited)

- Graduated 18 June 2026; Honor Standing in the final year (Fall 2025 and Spring 2026).
- Relevant coursework: Optimization (LP, MILP, Robust Optimization), Statistics, Stochastic Models, Simulation, Pricing and Revenue Optimization, Production Information Systems, Programming in Python.

EXPERIENCE

Guest Researcher, Zuse Institute Berlin (ZIB), IOL Lab

Jul 2026 – Oct 2026

Interactive Optimization and Learning research group, Berlin, Germany

- Research visit on Frank-Wolfe (conditional gradient) methods and the Boscia solver for convex mixed-integer nonlinear optimization (MINLP).
- Build and run computational experiments in Julia within the FrankWolfe.jl and Boscia.jl ecosystems.

Senior Year Project Engineer, Hayat Finans

Sep 2025 – Jun 2026

Industry-sponsored senior design project (IE 477/478), Turkey's first digital participation bank

- Built an end-to-end income prediction pipeline in R (tidymodels) to replace the bank's rule-based onboarding step, which was losing customers at sign-up.
- Benchmarked LASSO, Elastic Net, Random Forest, XGBoost, and LightGBM on masked customer records enriched with credit bureau (KKB) and province-level location data; validated with cross-validation and out-of-sample RMSE/MAE.
- Delivered an R Shiny decision-support tool and tied model output to the bank's customer segmentation and credit-decision use cases.

Finance & Data Analysis Intern, DenizBank

Jul 2025 – Aug 2025

Branch Financial Performance & Reporting Department, Istanbul, Turkey

- Queried financial data in SQL and automated Excel reporting for 50+ branches, cutting preparation time by about 40%; analyzed KPIs to support branch-level decisions.

Freelance Web Developer & Designer, Independent

2025 – Present

Websites and product concepts for restaurants, brands, and founders, built end to end (Next.js, React, Tailwind CSS)

Project Management & Production Intern, Kivanç Energy

Jun 2024 – Aug 2024

Solar layout design in PVsyst, PVCase, and SketchUp; production tracking in SAP, Adana & Mersin, Turkey

Finance Intern, QNB Finansbank

May 2022 – Jun 2022

Financial analysis, reporting, and account management in Excel, Istanbul, Turkey

RESEARCH

Robust Optimization for Temporally Feathered Radiation Therapy

2025 – 2026

Undergraduate Research Project (IE 490), Bilkent University, grade A-

- Formulated a robust scheduling model for head-and-neck radiotherapy that stays feasible when radiobiological parameters are known only within an interval, treating each organ's linear-quadratic (α , β) as an uncertain point in a polyhedral set.
- Showed the quadratic dose term linearizes exactly under one subplan per fraction, and used LP duality to collapse the robust counterpart into a polynomially sized MILP; added a Bertsimas-Sim budget with windowed and two-stage adaptive variants.
- Measured a 14.6% price of robustness on a five-organ, 35-fraction instance in Pyomo and Gurobi; verified strong duality against vertex enumeration, and recovered 3.2% with a two-stage adaptive variant.

TECHNICAL SKILLS

Programming & Data: Python (Pyomo, pandas, scikit-learn), R (tidymodels, glmnet, XGBoost, LightGBM), SQL, Julia (FrankWolfe.jl), LaTeX

Optimization & Modeling: Gurobi, Pyomo, Arena; Linear and Mixed-Integer Programming, Robust Optimization, Discrete-Event Simulation

BI & Analytics: Power BI, Advanced Excel, feature engineering, model validation, Quarto, R Shiny; SAP, Jira, MS Project

CERTIFICATIONS & LANGUAGES

Certifications: Fundamentals of Quantitative Modeling (Wharton, UPenn), Introduction to Data Analytics (IBM), Corporate Sustainability (Bocconi), The Product Owner Profession (SkillUp EdTech)

Languages: Turkish (Native) · English (C1, IELTS Academic 7.0) · German (A2, actively improving)