Daniel Kıllıoğlu

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EDUCATION

Northwestern University, Evanston, IL — Expected June 2026
Bachelor of Science in Mechanical Engineering, Minor in Music Technology — GPA: 3.9/4.0

SKILLS

Mechanical Design: Siemens NX, SolidWorks, Fusion 360, AutoCAD, GD&T, P&ID, Injection Molding, Sheet Metal Forming, Casting, CNC Machining, 3D Printing, Rapid Prototyping, AI-Driven Automation
Simulation & Analysis: MATLAB, ANSYS, Simulink, Topology Optimization, Kinetic Simulation
Programming & Electronics: Python, C, Embedded Systems, PID Motor Control, SPI, I^2C, Raspberry, PIC
Languages: English, Turkish, German

WORK EXPERIENCE

Engineering Intern, Asahi Kasei Bioprocess America Inc.**,** Glenview, IL — June 2025 – August 2025

- Designed the company's first benchtop buffer-dilution system, piloting and validating its move toward benchtop products, and built a functional prototype for testing and client demonstrations
- Standardized a pressurized-vessel product line, expediting lead times and decreasing costs by collecting critical data points from custom projects, analyzing trends, and validating them against regulations
- Revamped engineering drawings and bills of materials, enhancing procurement and assembly efficiency by correcting inaccuracies, updating outdated inventory, and enhancing hardware descriptions

R&D Intern, Mercedes-Benz Türk A.Ş.**,** Istanbul, Türkiye — July 2024 – October 2024

- Overhauled the opening mechanism of a semitruck maintenance flap, reducing operator reach distance by 25% to maximize user comfort through kinematic simulations of various joint styles in Siemens NX
- Implemented a design change that cut manufacturing cost 21% by replacing a cast aluminum part with an injection-molded plastic component while preserving stiffness and durability
- Reduced the peak stress concentrations of a stamped sheet-metal component by 18% through a rework of the geometry around rivet holes using FEA, improving reliability and fatigue life

PROJECTS

Chassis & Suspension Engineer, Northwestern Formula Racing, Evanston, IL — September 2023 – Present

- Optimized wheel hubs, achieving 6% weight reduction and 17% cost savings while maintaining a viable factor of safety through material and geometry improvements using SolidWorks Finite Element Analysis
- Implemented a new throttle-return system, improving smoothness and precision for throttle sensors via redesigned linkage and torsional spring choice through rapid prototyping and driver testing
- Directed manufacturing processes and timelines for aluminum and carbon-fiber suspension parts, coordinating machining shops, stock orders, and team schedules to finish a month ahead of deadline

Line-Following Robot (https://github.com/danielkllloglu/LineFollowingRobot) — March 2025 – June 2025

- Designed a real-time motor control system in C on a Raspberry Pico, incorporating a 5 kHz PI current loop nested within a 200 Hz PID position loop to achieve precise motion tracking with minimal overshoot
- Engineered a lightweight differential-drive chassis combining 3D-printing and laser-cut plates, enabling custom motor and sensor mounting positions while promoting structural integrity and tight cornering

Hybrid Solar Dryer, Trees That Feed Foundation — September 2022 - June 2023

- Improved hybrid solar dryer performance by integrating acrylic air channels and ramps, increasing airflow by up to 60% and reducing breadfruit drying time without raising cost
- Conducted user requirements research with breadfruit farmers in 14+ countries to identify key constraints and guide modifications for global applicability of the drying system
- Tested mirror prototypes to elevate drying temperature by 25 °F, increasing moisture removal while selecting durable, low-cost materials to maintain system reliability during transport and installation