Daniel Kıllıoğlu

danielklloglu@gmail.com   (224) 382-4311   danielklloglu.github.io

EDUCATION

Northwestern University, Evanston, IL   Expected June 2026
Bachelor of Science in Mechanical Engineering with Design Concentration   GPA: 3.9/4.0

SKILLS

Mechanical Design: Siemens NX, SolidWorks, GD&T, P&ID, Injection Molding, Sheet Metal Forming, CNC Machining, 3D Printing, Rapid Prototyping, DFM, CAM
Simulation & Analysis: MATLAB, ANSYS, Simulink, Excel, Topology Optimization, Kinetic Simulation
Programming & Electronics: Python, C, Embedded Systems, PID Motor Control, Raspberry
Languages: English, Turkish, German

WORK EXPERIENCE

Engineering Intern, Asahi Kasei Bioprocess America Inc., Glenview, IL   June 2025 – August 2025
- Designed and prototyped the company's first fully automated benchtop buffer-dilution system using similitude calculations for turbulence, head loss, and pump selection, managing a $9000 budget
- Standardized a pressurized-vessel product line by identifying critical dimensions from custom projects, analyzing trends, and validating them against regulations, expediting lead times and decreasing costs
- Revamped engineering drawings using GD&T and tolerance analysis, decreasing manufacturing costs

R&D Intern, Mercedes-Benz Trucks, 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 SAE Racing   September 2023 – Present
- Optimized wheel hubs, achieving 6% weight reduction and doubled factor of safety to account for fatigue and bumps 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 with torsional springs through load calculations, 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   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

Injection Molded Toy   January 2025 – March 2025
- Designed injection-molded character and accessories in Siemens NX, optimizing draft, wall thickness, and runner layout to achieve balanced flow and defect-free parts
- Machined precision molds via NX CAM and CNC milling, fine-tuning shutoff and press-fit tolerances to deliver tight fits and high-quality surface finishes
- Optimized injection parameters and compensated for material shrinkage through metrology analysis, achieving 1–4% uniform shrinkage and consistent assembly quality