

Hasan AlZafir

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EDUCATION

University of Minnesota - Twin Cities

May 2026 (Projected)

B.S. Mechanical Engineering

EXPERIENCE

Donaldson

Product Engineering Intern

May 2024 - August 2024

- Engineered and optimized Titan-250 ducting design through CFD analysis, achieving a 3% noise reduction and 2% improvement in filter airflow efficiency, showcasing proficiency in fluid dynamic and design optimization.
- Developed and executed bolt testing protocols for A325 bolts: Calculated and determined precise torque specifications, enhancing the reliability and performance of bolted connections.
- Conducted chiller coil performance assessments using Marlo DRS software, testing different airflow configurations, elevation changes, and coil turns to optimize thermal management and system efficiency
- Refined and updated CAD models: Adapted designs to meet consumer specifications, improving product usability and satisfaction.

Gopher Motorsports

Outboard Suspension lead

August 2024 - Present

- Conducted load cell testing on suspension links to quantify forces for the design of uprights and spindles, identifying maximum stress points and optimizing component strength.
- Performed detailed static analysis using kinematic angles to determine axial and radial bearing loads, ensuring precise bearing selection for enhanced reliability.
- Led mass reduction efforts across outboard suspension components, achieving a 19% total system weight reduction (3.732 lbs) while minimizing moment of inertia by 1.2% through strategic redesigns of uprights, spindles, and wheel wells.

EV Cooling Lead

September 2023 - July 2024

- Led the selection of battery cells and coordinated team efforts in validating the cooling system, using fan CFM analysis, ANSYS thermal simulations, and pressure drop assessments to ensure optimal performance and reliability
- Conducted testing, pressure drop assessments, and validations to verify the cooling system's functionality and reliability, while utilizing SolidWorks for optimized pipe routing to enhance design efficiency and overall system performance.

Powertrain member

September 2022 - June 2023

- Executed advanced quasi-isotropic carbon fiber layup techniques on intake and exhaust plenums, optimizing strength-to-weight ratio through precise application and curing processes.
- Gained hands-on experience with machining equipment, including lathes, mills, and CNC machines, while enhancing design and simulation proficiency using SolidWorks.

Personal Project

Line-Following Robot Project

- Designed and built a fully operational line-following robot using Arduino, integrating DC motors, servo motor, ultrasonic sensor, and motor driver module for real-time pathfinding and obstacle detection.
- Developed and optimized Arduino code to efficiently control motor functions, sensor interactions, and servo movements, ensuring reliable performance and seamless operation.

SKILLS

- **Language:** Bengali, Urdu, Hindi
- **Technical Skills:**
 - CFD | Ansys
 - Solid works | PTC Creo | CAD
 - C++ | Matlab | Python | Verilog | HTML
 - Machining | 3D Printing
 - Video Editing | Photoshop
 - Word | Excel | Powerpoint