Danish Tiro Galebotswe

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EDUCATION

Northwestern University; Evanston, Il *Anticipated graduation: 2026*
Bachelor of Science in **Mechanical Engineering**
GPA: 3.81/4.0
Relevant Coursework: Linear Algebra, Statics, Scientific and Embedded Programming, Mechanical, and Electrical Dynamic Systems, Material Selection, Arduino IDE Robotics Design, Electronics Design, Human-Centered Design, Multivariable Calculus

SKILLS

Technical Skills: Ansys & Star CCM+ Computational Fluid Dynamics (CFD), MATLAB, SolidWorks Computer-Aided Design (CAD), NX Siemens & Fusion 360 Computer-Aided Manufacturing (CAM), Topology Optimization, Python, Finite Element Analysis (FEA), Solidworks 3DExperience, Solidworks PDM, Microsoft Excel, Word, PowerPoint
Construction: Welding, CNC Mill, Lathe, Laser Cutter, Metalworking, CNC Router, Composite Manufacturing

WORK EXPERIENCE

Asahi Kasei Bioprocess America, Glenview, IL *June 2023 - September 2023*
Engineering Intern

- Learned how to make and read **Piping and Instrumentation Diagrams** (P&IDs), **Electrical Drawings**, and **General Arrangement Drawings**.
- Assisted with project management tasks by taking minutes for bi-weekly meetings and following on overdue project tasks from **Click-up**.
- Made **engineering drawings** for fabricated parts using **Solidworks CAD** to be sent out to the machine shops for manufacturing.
- Standardized one of the product lines by developing a transferable product plan through design reviews with the assembly team therefore saving a lot of money from labor costs.
- Developed assembly **Bill of Materials** for the different types of column systems that were assembled in-house.
- Assisted with **Factory Acceptance Testing**, **internal validation** and **quality control**, engaging with the customer, and providing clarification for system processes.

PROJECT EXPERIENCE

Northwestern Formula Racing SAE, Evanston, IL *September 2022 - June 2023*
Chassis Design Engineer

- Collaborated with a team of three (3) people to design new differential mounts on **Solidworks**, different from the previous year's designs due to a change in mounting position from the motor to the back of the frame and transition into electric vehicles.
- Improved the current design to increase the *stiffness-to-weight ratio* by **10%** by using **topology optimization** through Solidworks Simulations.
- Conducted **Finite Element Analysis** through SolidWorks in order to obtain a *factor of safety* greater than **1.5**.
- Researched further improvements to make on the current design and possibly decrease the weight of the differential mount by **10%** thereby increasing the efficiency of the differential.
- Assisted other subteams with manufacturing, gaining extensive experience using the mill and lathe.
- Generated the **Bill of Materials** and purchasing orders for the fabricated and purchased components of the mounts

ACTIVITIES

Advanced Intelligent Manufacturing Laboratory (AIM) *August 2023 - Present*
Northwestern National Society of Black Engineers (NSBE) *September 2022- Present*
African Students Association (ASA) *September 2022 - Present*
Entrepreneurship In Action (EPIC) *January 2023-March 2023*