TAP TOP OF PHONE TO NFC TAG TO PULL UP MY WEBSITE

Mason Maile

mailem@msoe.edu | (262) 374-9242 | www.linkedin.com/in/mason-maile-38318a294 | masonm24.github.io

SUMMARY

I'm a junior mechanical engineering student at MSOE, also minoring in electrical engineering. People often say that when you do what you love, you never work a day in your life, and that's exactly what I'm chasing. For me, engineering doesn't feel like work at all, it's something I genuinely love. Whether it's designing, building, or problem-solving, I find myself fully immersed in the process. Looking ahead, I'm hoping to find a 2026 summer internship with a company that shares this same passion.

EDUCATION

B.S. Mechanical Engineering with Minor in Electrical Engineering | Milwaukee School of Engineering | GPA: 3.82 | Expected 05/2027

INTERNSHIP EXPERIENCE

Automation Engineering Intern | Milwaukee Tool | Menomonee Falls, WI | May – August 2025
Roles and Operations:

- Served as the lead mechanical design engineer within a cross functional team to develop a tool fatigue test fixture.
- Maintained active communication with stakeholders to ensure alignment with their priorities.
- Communicated design intent to manufactures via part drawings.
- Facilitated cross-functional design reviews, tracked action items, and followed up accordingly.

Skills Gained: Proficiency in SolidWorks FEA, pneumatic actuator control, and cross-functional collaboration. Familiarity with PLC's and basic ladder logic, sensor selection and calibration, BOM management and part sourcing, and vendor communication.

Design Engineering Intern | Regal Rexnord - Stearns | Cudahy, WI | May – September 2024
Roles and Operations:

- Collaborated with a team to develop the logic for a tool that accurately generates Stearns brake Bill of Materials based on various user input variables.
- Collaborated with a team to model a complete CAD library of Stearns parts from technical drawings, enabling fully articulated brake models to be rapidly generated in CAD.
- Collaborated with a team to develop a modular B.O.M. structure for Stearns brakes, expediting the creation of B.O.M.s and freeing valuable company resources.

Skills Gained: Proficiency in SolidWorks parametric and surface modeling, configuration creation, and assembly generation. Familiarity with electromagnets, gaskets, and general manufacturing processes such as injection molding, casting, and CNC machining.

PROJECT EXPERIENCE

Passion Project: G.U.N.T.H.E.R – Autonomous Nerf Turret (2025)

- Followed the project through a nine-month development cycle and two prototype stages, delivering a functioning autonomous Nerf turret.
- Used dynamics-based knowledge to calculate required torques for proper stepper motor selection.
- Implemented professional wiring practices such as using terminal blocks, ferrules, wireway, and sleeving to deliver a clean, serviceable, and reliable system.

Result: Heightened understanding of stepper motor control, furthered python coding abilities, and deepened understanding of object detection. *(Tap Phone to NFC Tag for Images and Videos)*

Passion Project: 5-Axis Object Tracking Robotic Arm (2024)

- Used SOLIDWORKS skill set to design and model the 35 components comprising the robot.
- Used electrical skill set to wire a total of 11 servos in parallel into two separate power supplies and one
- central Raspberry Pi.
- Developed Python code utilizing the OpenCV and PCA9685 libraries to autonomously follow and pick up objects based on live input from a camera and ultrasonic sensor.

Result: Heightened understanding of how torque affects a systems capabilities under load, furthered coding abilities, and strengthened CAD design skills. *(Tap Phone to NFC Tag for Images and Videos)*

Passion Project: 5 Slot Split Flap Display with Custom CNC Fabricated Enclosure (2024)

- Utilized experience with the engineering design process to plan, design, test, and re-design the project through 4 distinct versions, refining each for greater reliability and enhanced ease of fabrication.
- Designed a compact mechanical system in SOLIDWORKS, enabling a stepper motor to accurately cycle through and display 36 characters.
- Used SOLIWORKS assembly experience to fully assemble the system in CAD.
- Applied CNC expertise to fabricate an aesthetic enclosure to house the entire system.
- Leveraged electrical knowledge from EE minor to wire up stepper motors, motor controllers, limit switches, a Raspberry Pico microcontroller, and an external power supply together.
- Employed Python coding expertise to develop custom code enabling users to define and display a 5-letter word or number on the split-flap display.

Result: Strengthened understanding of key electrical concepts and furthered experience in mechanical design. *(Tap Phone to NFC Tag for Images and Videos)*

TECHNICAL SKILLS

- SOLIDWORKS, Onshape, and Blender
- Laser Cutting and CNC
- 3D Printing
- Python Coding Language
- Interfacing with Micro Controllers
- Wiring and Circuitry
- Project Management
- Resilience
- Communication

LEADERSHIP EXPERIENCE | CO-CURRICULAR INVOLVEMENT

Mechanical Design Engineer| Student-Run Product Design Team | January/2025 – Current |

- Lead mechanical design efforts for two in-development consumer products: a 4mm billet aluminum wallet and an API-connected MLB scoreboard.
- Coordinate cross-functional collaboration between mechanical, electrical, and software sub-teams to maintain progress and meet development milestones.

Mechanical Design Lead | Biker Fest MKE / NWT Cycletronics USA | Aug/2023 – July 2024 |

- Guided a team of four in the design, prototyping, and construction of an ice track racing motorcycle.
- Managed project desires for Biker Fest MKE and Cream City Moto.
- Used SOLIDWORKS to create teaching models for younger enthusiasts in the Biker Fest MKE program.

WORK EXPERIENCE

OWNER | Self Owned CNC Company | 2021-2023 |

- Design and create custom topographical lake maps on plaques using laser engraving and CNC milling machines.
- Manage project finances and time to meet deadlines and maximize revenue.
- Look for ways to further the quality of the product and minimize production costs.