Kuba Mroczek

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EDUCATION

University of Michigan | Ann Arbor, MI **Graduating May 2029**

B.S.E. Mechanical Engineering

Relevant Coursework: Physics Mechanics, Solid Mechanics, Material Behaviors*, Dynamics and Vibrations*, DFM*

Involvement: Theta Tau Professional Engineering Fraternity, UMich Club Soccer (ranked #3 in the U.S.), MDA Lions Semi-Pro Soccer, Fleece and Thank You (1,000+ blankets distributed), Leveling the Playing Field Youth Charity

WORK EXPERIENCE

Astemo Ltd. | Farmington Hills, MI May 2026 – September 2026

Machine Shop Intern

- Designed fixtures and test setups, including a Subaru Impreza mount base jig, revising part CAD for manufacturability and writing the Mastercam CNC mill program that machines all of its features
- Programmed CNC lathe toolpaths in Mastercam for damper piston rods and bushings, then set up and ran jobs independently from start to finish, reusing programs across matching front and rear rod features
- Calibrated 8 paired dampers by tuning compression and rebound piston stacks to match left/right force curves to performance specs, then installed and validated the assemblies on a Chevy Tahoe test vehicle
- Inspected 100+ machined production parts to ±0.001" using calibrated gauges and a Keyence VR-6000 3D profilometer, catching 10+ tolerance discrepancies and revising inspection checkpoints to reduce rework

Three M Tool and Machine | Commerce, MI Summers 2024 & 2025

Manufacturing Engineering Intern

- Wrote CNC programs in Mastercam and modeled jaw, chuck, and fixture components in SolidWorks that were put into production use, supporting runs of up to 200 parts per day
- Cut setup and cycle time by restructuring Mastercam programs with clear logic and commented parameters, making them quick for operators to read and adjust at the machine
- Held tolerances to ±0.0002" across 3 CNC platforms (Okuma, Mazak, Gildemeister CTX400) and 2 surface grinders (Parker-Majestic, Okamoto), verifying parts through checklist-driven Zeiss CMM inspections

AM General | Auburn Hills, MI June 2025 – July 2025

Mechanical Engineering Intern

- Audited 3 production CAD models against manufacturing requirements and recommended design-for-manufacturability (DFM) changes to simplify assembly and speed up the build process
- Approved assembly readiness for 3 Humvee and MIMIC prototypes by inspecting door, truck bed, windshield, and rear differential installations against assembly specifications
- Updated Teamcenter Visualization models to reflect engineering design changes, keeping CAD documentation accurate for downstream engineering and production teams

PROJECTS

Custom 2-Inch FPV Drone Fall 2026

- Built a 2-inch FPV quadcopter from scratch for $98.74 total, pivoting from an initial 7-inch Fusion 360 design
- Iterated a carbon fiber airframe through 4 CAD revisions with standardized mounting interfaces, then integrated a BetaFPV Matrix 1S flight controller with T-Motor KV18000 brushless motors
- Soldered motor leads, bound the receiver and FPV camera/VTX, and configured flight control in Betaflight

TECHNICAL SKILLS

Software: CAD (SolidWorks, Onshape, Fusion 360, NX), Mastercam, Python, MATLAB, C++, Arduino IDE, Teamcenter

Manufacturing: CNC, GD&T, CMM, Surface Grinding, Soldering, 3D Printing, Laser Cutting, Sheet Metal Bending