

William Tun

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Education

Johns Hopkins University – B.S. in Mechanical Engineering Graduation: May 2029

- GPA: 3.7
- Relevant coursework: Autodesk Inventor, Onshape, Electrical Systems, DE Statistics, Intro Mechanics, Calculus I & II, MechE & Design (SolidWorks), MechE Lab.

Skills

Programming Languages: C++, Python

Software/Tools: MATLAB, SolidWorks, Autodesk Inventor, Fusion 360, Onshape, CATIA, Creo, ANSYS, Arduino, Excel, PowerPoint, Word

Experiences

Mechanical Engineering Intern (3D Printing), Joint Base Andrews – Oxon Hill, MD May 2025 – August 2025

- Designed a 3D printing filament recycling machine in SolidWorks, capable of processing engineering-grade and high-temperature polymers (PA6-CF, PETG, Nylon, ABS, PC, and PEEK).
- Developed ANSYS simulations to model conductive heat transfer across components and iterated design improvements based on analysis and feedback.
- Recycled filament maintained the original material properties of pre-recycled filament, cutting annual filament costs by 20%.

Projects

Baja Front Upright Design & Manufacturing, Blue Jay Racing May 2026 – August 2026

- Designed and modeled the lightest front upright in team history using SolidWorks, optimizing geometry to minimize mass while maintaining structural integrity and meeting all Load cases.
- Collected real-world suspension loading data from Baja SAE competition events and endurance testing, then developed an ANSYS finite element model to replicate braking, cornering, impact, and landing load cases for design validation and optimization.
- Created detailed manufacturing drawings with GD&T for the final front upright and collaborated with a 5-axis CNC machining sponsor to manufacture the component from a solid billet of 7075-T6 aluminum, ensuring critical tolerances and bearing fits were met.

Baja SAE Manual Shifter Fabrication – AWD / RWD Selector, Blue Jay Racing August 2025 - November 2025

- Designed and fabricated an aluminum AWD/RWD manual shifter in SolidWorks, generating 2D manufacturing drawings with appropriate GD&T, preparing progress and assessment reports to document project development, and machining components on a manual lathe and CNC mill, followed by TIG-welded assembly and in-vehicle fit-up.
- Enabled drivetrain mode switching between all-wheel drive and rear-wheel drive, expanding vehicle performance configurations for competition use.
- Reduced shifter mass by 15% while increasing torsional stiffness by applying ANSYS stress analysis to remove low-load material and reinforce high-stress regions, improving shift reliability and driver feedback during endurance testing.

Enclosure & Lower Frame Design lead, Oxon hill Clipper racers

August 2024 – May 2025

- Designed and cast an aluminum lower vehicle frame to house and protect the battery system, modeled in SolidWorks and fabricated using A356 aluminum for its high strength-to-weight ratio and corrosion resistance, ensuring secure battery mounting under dynamic loads.
- Performed ANSYS simulations on multiple bolt and mounting-point configurations to evaluate stress concentrations, fastener loading, and frame deflection under acceleration, braking, and cornering loads.
- Reduced vehicle mass by 32.5 lb, decreasing inertia and load transfer to improve transient response, cornering stability, and predictability under aggressive maneuvering.