THOMAS (TOM) R. ZIMET

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EDUCATION

University of Michigan | Ann Arbor, MI | GPA: 3.87/4.00   *MSE, Mechanical Engineering*

University of Washington | Seattle, WA | GPA: 3.59/4.00, Major GPA: 3.70/4.00   *BS, Mechanical Engineering*

EXPERIENCE

Sub-System Lead Engineer | General Motors | Milford, MI   *July 2025 - Present*

- Directly Responsible Individual for Power Take-Off (PTO) in the Testable Functionality Roll-Out Plan effort, mapping current PTO software and requirements into the Software Defined-Vehicle (SDV) 2.0 electrical architecture to improve traceability and planning for future programs
- Delivered Air Fuel Imbalance Monitor (AFIM) analysis for the new PHEV, showing the existing monitor is sufficient, effectively avoiding a new AFIM algorithm program and its associated development/validation cycle
- Assisted in developing a Mass Fraction Purge Vapor (MFV) threshold model, using vehicle and lab data to create a MATLAB Simulink model and confirm the new Fuel Adjustment System Diagnostic (FASD) inhibit strategy behaves correctly across key fault and no-fault cases, reducing risk of intrusive customer events and late emissions rework
- Built an MFV threshold calibration tool that automates statistical analysis on emissions data, cutting per-run processing time by an estimated 70–90% and improving consistency of FASD inhibit thresholds
- Identified a Hardware-in-the-Loop (HiL) vs vehicle purge behavior mismatch and drove correction, preventing wasted bench/vehicle reruns and lowering risk of late emissions/On-Board Diagnostic (OBD) issues
- Framed PHEV integration into Jira tickets, reducing ambiguity and enabling earlier, more focused testing

Hardware Engineer | General Motors | Warren, MI   *June 2023 – July 2025*

- Modeled injection-molded parts in Siemens NX using Design for Manufacturing (DFM) and Design for Assembly (DFA) best practices to ensure robust, manufacturable designs
- Managed tolerance stack-ups in large assemblies using GD&T and Teamcenter PLM, maintaining fit and function
- Owned operation and troubleshooting of hydrogen fuel cell HiL test stands, ensuring reliable execution of development and durability test plans
- Led commissioning of a new test stand and developed tools that reduced future commissioning lead time by 50%
- Created a Power BI asset tracker that improved visibility to asset status and reduced test transition downtime by 14%
- Used Design for Six Sigma (DFSS) methods to build a lab status dashboard in Power BI, increasing test uptime by 34% through proactive issue identification
- Wrote Python automation scripts for common test cycles, eliminating manual operation for routine runs and freeing engineering and technician time for higher-value tasks

Equipment Development R&D and Engineering Co-Op | Starbucks | Seattle, WA   *June 2022 - September 2022*

- Designed, built, and tested a precision syrup dispensing system to improve drink consistency/variation
- Developed a custom ice dispensing solution to increase throughput and reduce physical strain on baristas
- Supported the electronics team by modeling and 3D-printing custom housings, accelerating prototype iteration
- Modified hydraulic subsystems to improve coffee machine performance in stores with low water pressure

Manufacturing Engineering Intern | Digital Control Inc. | Kent, WA   *June 2021 - September 2021*

- Performed product and cost analyses and proposed redesigns that cut weight by 25% while maintaining performance
- Increased worker safety by modifying a heavy fixture, cutting weight by 64% while preserving critical tolerances
- Designed and fabricated 7 fixtures that eliminated recurring failures and shortened manufacturing lead times by 17%
- Delivered an emergency fixture in 2 days that salvaged 5,000 parts and prevented a week of production delay
- Upgraded and maintained 3D printers and printed 300+ parts to support prototype and production tooling needs

Research Engineer | Transformative Robotics Lab | Seattle, WA   *July 2020 - June 2022*

- Built a hopping robot that varies jump height and frequency by twisting a handed-shearing auxetic (HSA) spring, integrating motors, encoders, COTS components, and custom hardware
- Optimized HSA geometry, increasing bearable load by 13% while preserving the desired auxetic behavior
- Ran FEA and Instron testing to characterize HSA performance and provide data for control and design iteration
- Modeled compliant mechanisms and evaluated designs in Ansys to enhance motion quality and robustness
- Reduced test setup time by 20% by designing an easily adjustable straight-line mechanism tiling system

SUMMARY OF QUALIFICATIONS

- Certifications: FE Mechanical, DFSS Black Belt, Mechanical Design Associate, GM Performance Driving Level 2
- Tools: NX, SolidWorks, Fusion 360, AutoCAD, Ansys, Python, MATLAB, Power BI, INCA; fluent in Japanese