

Owen Patch

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EDUCATION

University of Michigan—College of Engineering

August 2021—December 2026

Bachelor's in Science and Engineering (BSE) in Mechanical Engineering

Ann Arbor, MI

- Pursuing a bachelor's degree in Mechanical Engineering, with a strong foundation in product quality, development, validation, and analytical problem-solving.
- Relevant coursework: Calculus 1-3, Differential Equations, Design & Manufacturing I & II, Thermodynamics, Fluid Mechanics, Dynamics & Vibrations, Solid Mechanics, Mechanical Behavior of Materials, Electrical Circuits, etc.

WORK EXPERIENCE

Apple

January 2025—December 2025

Acoustics Manufacturing Quality Engineering Intern

Sunnyvale, CA

- Led reliability failure analysis and corrective action for iPhone bottom speaker modules, ensuring specification compliance, high process capability (Cpk), and robust manufacturing quality.
- Applied deep technical expertise in speaker design, performance, and durability to diagnose complex issues, conduct root cause analysis with vendors, and implement rapid, effective resolutions in time-critical builds.
- Responsible for component critical bonding strength evaluations, cosmetic quality, yield loss investigations, and automated optical inspection (AOI) implementation and improvements.
- Collaborated cross-functionally with product design, hardware engineering, global supply management, and system integration to resolve system-level issues during late-stage NPI builds, balancing quality, supply risks, and cost.
- Employed advanced analytical methods—including statistical analysis in JMP, cross-sections, CT scanning, SEM, EDS, and FTIR—to thoroughly diagnose failure modes, implement corrective action, and drive issues to closure.
- Authored concise, data-rich technical reports and visual summaries to communicate findings and corrective actions across teams and leadership in high-pressure situations.

Scout Motors

May 2024—August 2024

Quality Engineering Intern

Novi, MI

- Collaborated in cross-functional teams to advocate for and communicate viability of major KPIs (warranty costs, in-field repairs, customer satisfaction scores, etc.) and increased vehicle quality (in regard to CMF, NVH, user experience, ergonomics, and serviceability, among other vehicle attributes).
- Led large, data-driven projects using JD Power's Initial Quality Study (IQS) platform to assist quality engineering in defining vehicle features and provided clear, defensible pathways to achieving product feasibility.
- Developed an AI bot using Microsoft Azure AI Studio equipped with IQS data to enable the quality organization to ask unique questions and quickly gain important high-level takeaways based on over 30,000 customer complaints.

BorgWarner

May 2023—December 2023

Product Engineering Co-Op (Engine Solenoids)

Auburn Hills, MI

- Responsible for variable force solenoid (VFS) development and testing for BorgWarner's Morse Systems. Involved in all stages of development including planning, design, prototyping, and validation.
- Successfully prototyped and validated a significant design improvement for a global automaker, which resulted in substantially enhanced performance, robustness, and a major cost reduction.
- Led root cause analysis initiatives to uncover factors impacting performance. Leveraged a data-driven approach to identify issues, communicate potential design improvements, or push for tighter manufacturing tolerances.

PROJECTS

Robot Machine Player (*Design and Manufacturing I*)

Fall 2022

- Robot machine player (RMP) design and manufacturing. Responsible for designing the complete RMP in SolidWorks. Gained proficiency in part design, CAD assemblies, CAD motion studies, GD&T, among other skills.

Four-Bar Linkage Mechatronics Project (*Design and Manufacturing II*)

Fall 2024

- Designed in SolidWorks and manufactured a four-bar linkage that incorporates proximity sensors, a motor encoder, and an Arduino controller to respond to changes in a physical system by repositioning the linkage accordingly.

SKILLS

- **Software:** JMP, ANSYS, MATLAB, SolidWorks, CATIA, Siemens NX, Microsoft Office (Excel, Visual Basic for Applications (VBA), PowerPoint, Word), Teamcenter, Minitab, Tableau, SQL.
- **Hardware:** Keyence 3D surface profilers, OMMs, CMMs, Instron tensile testers, hardness testers, DAQs and other testing hardware (power supplies, thermal and environmental testing chambers, flow meters, etc.).