

Marcus Hale, EIT

Mechanical Engineer | Product Design & Manufacturing

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SUMMARY

SEC-01

Mechanical Engineer with 3.5 years of experience in product design, FEA/CFD analysis, and manufacturing process improvement for automotive and industrial equipment. Designed components for programs generating \$38M in annual revenue, cut part cost by 17%, and reduced warranty returns by 24%. Proficient in SolidWorks, ANSYS, GD&T, and DFM, and a Six Sigma Green Belt. EIT certified and on the path to PE licensure.

TECHNICAL SKILLS

SEC-02

Design & Analysis: SolidWorks, Siemens NX, AutoCAD, ANSYS Mechanical, ANSYS Fluent, FEA, CFD, GD&T (ASME Y14.5), Tolerance Stack-Up, DFM/DFA

Manufacturing & Quality: Lean Manufacturing, Six Sigma, FMEA, 8D, PPAP, SPC, Root-Cause Analysis, CNC & Injection Molding Processes, Rapid Prototyping (3D Printing)

Tools & Systems: Teamcenter PLM, SAP, MATLAB, Python (Basic), Minitab, Excel, MS Project

PROFESSIONAL EXPERIENCE

SEC-03

Mechanical Design Engineer

Jun 2023 – Present

Great Lakes Automotive Systems — Detroit, MI

- Design and release 40+ stamped and machined components for chassis assemblies in SolidWorks, supporting programs worth \$38M in annual revenue.
- Reduced part cost by 17% (\$420K annually) through DFM redesigns, material substitution, and supplier negotiations.
- Performed FEA and fatigue analysis in ANSYS that cut bracket mass by 12% while meeting a 1.5 safety factor and 10-year life target.
- Led 8D investigation on a field failure and implemented corrective actions that reduced warranty returns by 24%.
- Own GD&T drawings and PPAP packages for 15 launched parts with 100% first-time customer approval.

Manufacturing Engineer (Co-op to Full-Time)

Jul 2022 – May 2023

Midwest Industrial Equipment — Grand Rapids, MI

- Improved CNC cell throughput by 21% by redesigning fixtures and optimizing tool paths and cycle times.
- Led a Kaizen event that reduced changeover time from 90 to 35 minutes and saved 600 labor hours per year.
- Built SPC charts and reduced scrap rate from 4.8% to 2.1% on a high-volume machined part.
- Prototyped 25+ parts with 3D printing and CNC to validate design intent before tooling release.

PROJECTS

SEC-04

Designed a lightweight suspension upright with topology optimization (ANSYS); won 2nd place at the SAE Baja design competition (Team Lead, 14 members).

EDUCATION

SEC-05

Bachelor of Science in Mechanical Engineering

University of Michigan — Ann Arbor, MI
2022 | GPA 3.6

CERTIFICATIONS

SEC-06

- Engineer in Training (EIT), State of Michigan
- Six Sigma Green Belt (ASQ)
- SolidWorks CSWP (Certified SolidWorks Professional)
- ASME Member