

Thad Benson

Mechanical Engineer

CONTACT INFO

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- Results-driven Mechanical Engineer with 3+ years of experience in automotive component design and manufacturing optimization, specializing in powertrain systems and thermal management solutions
- Proven track record of reducing manufacturing costs by 25% through innovative design modifications and implementing lean manufacturing principles across production lines
- Expert proficiency in SolidWorks (CSWE certified), ANSYS simulation suite, and MATLAB programming with demonstrated ability to lead cross-functional teams through complex engineering projects

WORK EXPERIENCE

Apex Automotive Solutions

JUNE 2022 - PRESENT

Mechanical Engineer II

- Designed 20+ automotive cooling system components using SolidWorks, achieving 18% improvement in heat dissipation efficiency and reducing warranty claims by 35%
- Led thermal analysis projects using ANSYS Fluent, optimizing airflow patterns in engine compartments and decreasing operating temperatures by 12°C under peak load conditions
- Collaborated with manufacturing teams to implement Design for Manufacturing (DFM) principles, reducing assembly time by 40% and material waste by \$125,000 annually
- Managed product validation testing protocols, ensuring compliance with ISO 9001 standards and reducing time-to-market by 3 weeks for new component releases
- Mentored 2 junior engineers in CAD modeling best practices and finite element analysis methodologies

TechFlow Manufacturing

AUGUST 2021 - MAY 2022

Mechanical Engineer I

- Developed mechanical assemblies for industrial pumping systems, conducting stress analysis using ANSYS Mechanical and ensuring fatigue life exceeded 10 million cycles
- Optimized production line layouts using lean manufacturing principles, increasing throughput by 22% and reducing cycle time from 45 to 35 minutes per unit
- Created detailed technical drawings and specifications for 15+ mechanical components, maintaining dimensional tolerances within ± 0.001 " for critical interfaces
- Performed root cause analysis on field failures, implementing design modifications that reduced failure rates by 60% and saved \$200,000 in warranty costs

Precision Dynamics Corporation

MAY 2021 - AUGUST 2021

Engineering Intern

- Assisted senior engineers in designing medical device components, utilizing SolidWorks for 3D modeling and ensuring FDA compliance requirements were met
- Conducted material testing and analysis on biocompatible polymers, documenting results that contributed to successful product certification
- Supported manufacturing process improvements, identifying bottlenecks that led to 15% increase in production efficiency

EDUCATION

Texas A&M University

AUGUST 2017 - MAY 2021

Bachelor of Science in Mechanical Engineering

GPA: 3.8/4.0 (Magna Cum Laude, Dean's List: Fall 2019, Spring 2020, Fall 2020)

Relevant Coursework: Finite Element Analysis, Machine Design, Manufacturing Processes, Heat Transfer, Fluid

Mechanics, Control Systems, Materials Science, Computer-Aided Design

Senior Design Project: Autonomous Solar Panel Cleaning System

- Led 4-member team to design robotic cleaning mechanism for utility-scale solar installations
- Utilized SolidWorks for mechanical design and MATLAB for control system programming
- Achieved 95% cleaning efficiency while reducing water consumption by 40% compared to existing solutions
- Manufactured functional prototype under \$3,500 budget constraint

TECHNICAL SKILLS

CAD/Design: SolidWorks (CSWE certified), CATIA V5 (surface modeling), AutoCAD (2D drafting), Creo Parametric

Simulation & Analysis: ANSYS Mechanical (static/dynamic analysis), ANSYS Fluent (CFD), MATLAB/Simulink (control systems), LabVIEW

Programming: Python (automation scripts), C++ (embedded systems), MATLAB (data analysis and modeling)

Manufacturing: GD&T, Lean Manufacturing, Six Sigma Green Belt, CNC machining principles, 3D printing (FDM/SLA)

Standards & Certifications: ISO 9001, ASME Y14.5 (GD&T), OSHA 30-Hour General Industry, FE/EIT certified

AWARDS AND PUBLICATIONS

ASME Student Design Competition - Regional Winner

2021

- Competed against 23 teams from 8 universities in mechanical design challenge
- Designed energy-efficient HVAC system reducing power consumption by 35% while maintaining comfort standards

Outstanding Mechanical Engineering Student Award

2021

- Awarded to 1 student among 280+ mechanical engineering graduates
- Selection based on academic excellence, leadership, and innovation in engineering projects

Optimization of Heat Exchanger Performance Using Machine Learning Algorithms

2021

ASME Student Conference Proceedings

Blackwood, T., Martinez, R., **Chen, L.**, et al. (2021). "Optimization of Heat Exchanger Performance Using Machine Learning Algorithms." *ASME Student Conference Proceedings*, Paper No. SC2021-1247.

- Developed novel optimization algorithm improving heat transfer efficiency by 28%
- Research presented at ASME International Student Conference