Garrett K. Hall

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PROFESSIONAL SUMMARY

Mechanical Design Engineer (M.S. ME, UT Austin) focused on turning ambiguous user needs into manufacturable hardware systems. Leads end-to-end development from problem framing and architecture through analysis, prototyping, and validation, applying rigorous, human-centered thinking. Known for strong judgment under uncertainty and connecting user needs to rigorous analysis and production-aware design.

Tools & Technologies: CAD (SolidWorks), CFD (ANSYS), FEA (ANSYS), GD&T, MATLAB, Python, SQL, Simulink, LabVIEW

EDUCATION

UNIVERSITY OF TEXAS AT AUSTIN – Austin, TX
Master of Science in Mechanical Engineering

- Focus in Product Design and Manufacturing
- GPA: 3.84

BAYLOR UNIVERSITY – Waco, TX
Bachelor of Science in Mechanical Engineering

- Minor: Mathematics

EXPERIENCE

EUREKA! INVENTING – Houston, TX (Remote) ***August 2025 – Present***
Strategy & Design Engineer Intern

- Architected system-level product and service offerings by conducting empathy-driven research with caregivers and clinicians, translating ambiguous needs into structured requirements and implementation-ready concepts.
- Led rapid prototyping and iterative concept validation, developing 20+ concepts and converging on 7 user-validated offerings currently advancing toward development; established a repeatable framework to support future product development and scalability.

DESIGN & ENGINEERING PROJECTS

Precision Airflow Damper System for Offset Smokers – Personal Project ***December 2025 – Present***

- Designing a novel mechanical airflow system enabling 5% incremental control for BBQ smokers; leading prototyping and validation to evaluate airflow performance, usability, and robustness across cooking styles.
- Driving the system from problem definition to manufacturable prototype by executing thermal analysis, CFD, torque calculations, and FMEA to inform design decisions.
- Developing detailed CAD models in SolidWorks, generating production-ready drawings with GD&T, a complete BOM, and vendor-ready manufacturing documentation.

Forensic Failure Analysis of Structural Turnbuckle – University of Texas at Austin ***January 2024 – May 2024***

- Led forensic failure analysis of a legacy structural turnbuckle with no available specifications, independently developing hypotheses and test plans under incomplete data and high uncertainty.
- Conducted fracture surface analysis using SEM and EDS, systematically evaluating stress corrosion, tensile overload, manufacturing defects, and fatigue mechanisms.
- Identified fatigue-driven crack propagation over 18 years and delivered actionable design, material, and inspection recommendations to prevent future failures.

Neonatal Endotracheal Tube Stabilization System – University of Texas at Austin ***July 2023 – December 2023***

- Sole engineer on a cross-functional MBA team, evaluating the commercialization of a patented neonatal medical device, translating complex technical concepts into product requirements, risk assessments, and feasibility decisions.
- Worked directly with physicians and clinicians at UT Dell Medical School, conducting deep user discovery to connect real NICU workflows with product requirements and adoption barriers.
- Drove system-level product strategy by identifying engineering constraints across manufacturing, regulatory class, usability, and cost that materially shaped licensing and go-to-market recommendations.

LEADERSHIP & CERTIFICATIONS

- Eagle Scout: Led the design and installation of a permanent orienteering course at a Texas State Park; project led to a freelance contract with a Houston corporation to develop a similar course for their corporate retreat (2019).
- Certifications: SolidWorks Design Professional (CSWP) Certification (In progress) | Blue Belt in Innovation Engineering