Garrett K. Hall

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PROFESSIONAL SUMMARY

Mechanical Engineer (M.S. ME, UT Austin) delivering production-ready hardware from ambiguous user needs. Leads end-to-end development through analysis, prototyping, and validation, translating complex problems into manufacturable solutions that balance performance, cost, and reliability.

Tools & Technologies: SolidWorks, GD&T, BOM Development, ANSYS (FEA, CFD), FMEA, MATLAB, Simulink, Python, SQL, 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

- Partnered with Eden Autism, a 50-year-old nonprofit, to build their first internal **innovation pipeline**; delivered **2 board-approved growth strategies** converting clinical expertise into scalable revenue.
- Led **50+ hours** of discovery sessions with Eden's executives and frontline staff, rapidly prototyping **77 concepts** and converging on **7 user-validated offerings.**
- Developed an education program packaging 50 years of expertise for U.S. and international school systems and an outpatient clinic serving children with severe behavioral and feeding needs; launch targeted for **March 2026**

ENGINEERING PROJECTS

PRECISION AIRFLOW DAMPER SYSTEM FOR OFFSET SMOKERS – Personal Project ***December 2025 – Present***

- Defined engineering specifications for a mechanically indexed airflow damper delivering **repeatable 5% incremental control** across **250–350°F cook ranges** after identifying temperature instability and coarse adjustment in existing smokers.
- Designed and tuned the indexing mechanism using CFD, thermal analysis, and torque modeling to ensure stable, repeatable adjustment under thermal loading and variable draft conditions; applied **FMEA** to mitigate drift, binding, and wear.
- Delivering full manufacturing package (GD&T drawings, BOM, supplier-ready documentation) and executing prototype builds to validate airflow and torque performance, refining geometry and materials based on empirical data.

FORENSIC FAILURE ANALYSIS – UT Cockrell School of Engineering ***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.

LETT DEVICE – TECHNOLOGY COMMERCIALIZATION – UT McCombs School of Business ***July 2023 – December 2023***

- Sole engineer on MBA commercialization team, partnered with the faculty inventor and UT's IC2 Institute to deliver a **$7.66M technology valuation** and formal go-to-market recommendation.
- Conducted **15+ interviews** with NICU clinicians at UT Dell Medical School, mapping clinical workflows to quantify a $103 per x-ray cost burden and translate findings into defined adoption requirements.
- Assessed the patented **double-spring mechanism** for manufacturability, regulatory classification (**FDA Class I**), and integration with existing hardware; built NPV model integrating cost savings, market comparables, and risk factors, with **recommendation formally adopted.**

LEADERSHIP & CERTIFICATIONS

- Earned Eagle Scout, leading the design, development, and installation of a permanent orienteering course at a Texas State Park.
- Certifications: SolidWorks Design Professional (CSWP) Certification (In progress) | Blue Belt in Innovation Engineering