

# 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

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## 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
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## RELEVANT EXPERIENCE

**PRECISION AIRFLOW DAMPER SYSTEM FOR OFFSET SMOKERS** – Personal Project

*January 2026 – Present*

**Mechanical Design Engineer**

- 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.

**EUREKA INVENTING** – Houston, TX

*August 2025 – February 2026*

**Strategy & Innovation Consultant (Contract)**

- 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**.

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

*January 2024 – May 2024*

**Mechanical Engineer**

- 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*

**Research Engineer**

- 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**.
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## 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