JULIAN MERCER

R&D; ENGINEER

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PROFESSIONAL SUMMARY

R&D Engineer with 8+ years building prototypes, designing experiments, and testing new products from concept to pilot production. Uses data to compare design options, resolve failures, and hand off validated designs that manufacturing can build reliably.

PROFESSIONAL EXPERIENCE

Senior R&D Engineer Jan 2022 - Present
Tesla, Fremont, CA

- Lead prototype builds and bench tests for battery pack components, running about 20 design iterations a year through to validation.
- Designed experiments in JMP to compare thermal pad options, selecting one that cut peak cell temperature spread by roughly 15%.
- Wrote test plans and failure reports for cross-functional reviews, helping close eleven open design issues ahead of pilot builds.
- Worked with manufacturing engineers on tolerances and fixtures, lowering first-pass assembly defects on a pilot line by about a quarter.
- Mentored three junior engineers on test setup, data logging, and clear documentation of experimental conditions.

R&D Engineer Jun 2018 - Dec 2021
Medtronic, Minneapolis, MN

- Developed and tested catheter handle prototypes in SolidWorks and 3D printing, moving two concepts into verification testing.
- Ran tensile, fatigue, and leak tests under documented protocols, producing results used in design history file submissions.
- Reduced prototype lead time from three weeks to ten days by moving routine parts to in-house printing and a vendor shortlist.
- Investigated field complaint samples with quality teams, tracing one issue to a material change and recommending a supplier fix.

Associate Engineer Jul 2016 - May 2018
Honeywell, Phoenix, AZ

- Assembled and instrumented sensor prototypes, logging calibration data in LabVIEW to support development of a new product line.
- Analyzed test data in MATLAB to quantify drift across temperature ranges, informing a compensation approach adopted by the team.
- Prepared engineering change documents and bills of materials accurately, with fewer than five corrections in two years.

CORE SKILLS

Prototype development | Experimental testing | Design of experiments | SolidWorks | JMP | MATLAB | LabVIEW | 3D printing | Failure analysis | Test protocol writing | Design for manufacturing | Statistical analysis | Technical documentation | Cross-functional collaboration

EDUCATION

M.S. in Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA

CERTIFICATIONS

Professional Engineer (PE) license | Certified Six Sigma Green Belt (ASQ)