CODY BADGER

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Senior Mechanical Engineer with 15+ years of experience in vehicle and hardware testing, mechanical system validation, and robotic product development. Proven ability to lead cross-functional engineering teams and deliver reliable systems in EV, AV, and aerospace applications. Passionate about solving complex engineering problems at the intersection of mechanics, electronics, and data.

Select Professional Experience

Engineering Consultant *(May 2025 - Current)*
Developing hardware and software to control large-scale environmental control for an early-stage agriculture startup.

Senior Hardware Test Engineer, Reliability II - Cruise *(San Francisco, CA, April 2022 - April 2025)*
Cruise built advanced self-driving vehicles, was bought by GM and shut down in 2025.
- Planned and executed hardware reliability tests on compute, sensor, robotics, and cargo systems and components
- Computed tests included chip (including custom silicon), component, board, system, level tests
- Assisted with mechanical design of wheelchair access vehicles and test fixtures
- Cross-functional FMEA work with reliability, design, manufacturing, failure analysis teams

Powertrain Test Engineer - Zero Motorcycles *(Scotts Valley, CA, February 2021 - March 2022)*
Zero Motorcycles is a global leader in electric motorcycles who partnered with Polaris to bring Zero powertrain technology to Polaris powersport vehicles
- Initiated and led validation efforts on the Zero + Polaris partnership
- Coordinated with Polaris engineering teams in order to plan, execute, and analyze EV powertrain validation tests that met Polaris validation needs
- Executed powertrain tests for EV battery pack, chargers, motor, controllers, BMS
- Reviewed environmental, mechanical, thermal test specifications
- Managed and participated in DFMEAs and DVP&Rs for various powertrain systems

Lead Reliability Test Engineer - Loon *(Mountain View, CA, August 2018 - April 2021)*
Loon developed essential components of a cell tower and redesigned them to be light and durable enough to be carried by a balloon at a 60,000 foot elevation, on the edge of space
- I managed the hardware reliability test lab team responsible for aerospace systems validation and participated both as an independent contributor (IC) and team lead
- As a team lead, I oversaw all up to 50 live tests and ensured the team's workload was properly distributed based on individual schedule and expertise. Additionally, performed lab manager duties
- As an IC, I set up, maintained, monitored, and analyzed between 5 and 15 tests at any given time. I programmed the environmental chamber, wrote/edited test scripts, built data visualization and alerts

Vehicle Reliability Test Engineer - Tesla Motors *(Fremont, CA, October 2012 – April 2013)*
- Conducted pre-production endurance durability tests on Model S mule vehicle builds
- Daily reporting to engineering teams with a goal to find immediate resolution on vehicle, system, and component level issues
- Loading from road input, drivetrain & environmental cycling were balanced to simulate full life

Product Validation Test Engineer II - Case New Holland *(Burr Ridge, IL, August 2011 – October 2012)*
- Design, setup, execute & report on structural, drive train, and vibration tests on heavy equipment vehicles
- Test data analysis and reporting of structural damage, life estimates, and vibration limits

Please refer to my LinkedIn profile to review my complete professional experience

Competencies

Engineering & Analysis
Hardware Design
Reliability Testing
Failure Analysis
Component/System FMEA
Structural/Life Testing
Test Standards & Protocols
Data Acquisition
Vibration/Environmental Test
Mechanical/Electrical Debug

Design & Development Tools
CAD: SolidWorks, NX, Onshape
Simulation: MATLAB, JMP
Programming: Python, C/C++
Data Management

Hardware & Electronics
Power Electronics (LV/HV)
PCB/Chip/Component Testing
Sensor Integration
Test Equipment

AI & Software Development
AI Workflows
Embedded Systems Integration
API Development
Software/Script Debugging
Test Automation
Cloud Tools: GCP, Looker, BQ

Project & Team Leadership
Cross-functional Collaboration
Test Lab Management
Vendor Coordination
Team Management
Technical Documentation
Process Improvement

Languages
English (Fluent)
Spanish (Profesh Proficiency)

Education

Mechanical Engineering
MSME, **UCLA**
BSME, **UCLA**

At home, I like to

All of the above ⤴ plus this ⤵ camp, swim, photograph, cook, basketball, drive, hike, music, bicycle, organize, family, tinker, garden, ski, learn, volleyball, fish, spreadsheets, restorations, golf, surf, and more.