

Elijah Nunez

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SUMMARY

Staff Reliability Engineer with 14 years of progressive **hardware reliability** experience across **connected energy** systems, power electronics, IoT products, and electromechanical platforms. Leads **Design for Reliability** programs through mission profiles, reliability targets, DFMEA, XFMEA, DOE, statistical analysis, predictive models, environmental testing, root cause analysis, and CAPA. Combines technical leadership with hands on laboratory work involving test rig design, metrology, environmental chambers, high voltage AC and DC systems, Python automation, Linux, and data logging. Guides small engineering teams, reviews test plans, prioritizes programs, and connects laboratory evidence with product requirements, design decisions, certification, and engineering changes. Communicates risk clearly with engineers and executives, manages **third party laboratories**, and scales in house testing. Prepared to contribute disciplined reliability leadership across connected energy and electrification products.

EXPERIENCE

Staff Reliability Engineer

January 2023 - Present

Voltstream Home Energy

San Jose, CA

Owns multidisciplinary reliability strategy for connected energy hardware, guiding engineers, laboratory operations, test evidence, design decisions, certification, and executive risk communication.

- Set reliability direction for **connected energy** platforms using **mission profiles** and product requirements
- Established **DFMEA** targets and risk based tests for multidisciplinary hardware programs
- Mentored engineers through test reviews, failure analysis, statistics, and escalation decisions
- Analyzed **DOE** and life test data with **Python** models for executive design decisions
- Guided root cause investigations with oscilloscopes, X ray, metrology, and **environmental** testing
- Expanded in house rigs, Linux logging, reporting, and third party laboratory criteria

Senior Reliability Engineer

July 2019 - December 2022

GridNest Technologies

Fremont, CA

Owned reliability workstreams for connected home energy hardware and power electronics, coordinating test strategy, automation, failure analysis, certification evidence, and external laboratories.

- Owned reliability workstreams for **connected home** energy hardware and power **electronics**
- Built DFMEA driven **thermal**, humidity, vibration, electrical, and systems **test plans**
- Designed automated fixtures and Python logging for long duration mission profile tests
- Led failure analysis using X ray, **electrical** measurements, teardown evidence, and statistics
- Applied UL, **NEC**, IEC, and ISO considerations with certification and design partners
- Managed external laboratories and connected evidence with product design decisions

Reliability Engineer

June 2016 - June 2019

Lumina IoT Systems

Sunnyvale, CA

Executed reliability testing for connected devices, developing chamber evaluations, metrological setups, statistical comparisons, corrosion investigations, and automated data workflows.

- Executed environmental, **mechanical**, electrical, and system testing for connected devices
- Developed **test rigs** and metrological setups for accelerated chamber evaluations
- Applied DOE and statistical **reliability analysis** to compare design variants
- Investigated **corrosion** and **plating** failures under controlled humidity exposure
- Evaluated thermal and environmental contributors to **IC degradation**
- Automated data collection and analysis with Python and Linux tools

Reliability Test Engineer

August 2013 - May 2016

Apex Power Controls

Santa Clara, CA

Performed reliability testing for electromechanical power control products, building fixtures, operating chambers, supporting high voltage evaluations, and preparing traceable evidence.

- Performed reliability testing for electromechanical power control products
- Built fixtures with laboratory instrumentation and repeatable operating procedures
- Operated large and small **environmental chambers** for temperature and humidity testing
- Supported high voltage AC and DC evaluations approaching 600 to 1000 volts
- Collected evidence for root cause investigations and corrective actions
- Prepared traceable test summaries for multidisciplinary design teams

Associate Reliability Engineer

June 2012 - July 2013

CircuitWorks Engineering

Milpitas, CA

Supported supervised reliability evaluations for electronic and electromechanical products, maintaining fixtures, instrumentation, samples, procedures, and laboratory safety.

- Supported reliability evaluations for electronic and electromechanical products
- Prepared fixtures, instrumentation, samples, and chamber setups
- Logged measurements, checked data quality, and escalated unexpected behavior
- Used introductory statistics to compare sample behavior across conditions
- Contributed teardown observations and measurements to failure investigations
- Maintained lab equipment, test assets, procedures, and safe execution

PROJECTS

Automated Mission Profile Lab 📅 2024

Built scalable Python and Linux workflows for mission profile testing, data logging, chamber operation, and reliability reporting. Better evidence helped teams make clearer design decisions.

Connected Energy Reliability Framework 📅 2022

Unified DFMEA, XFMEA, test planning, predictive analysis, and certification evidence for connected energy hardware. Shared standards gave engineers a common path from risk to action.

LEADERSHIP & AWARDS

- Certified Reliability Engineer recognition from ASQ, earned in 2018.
- Technical leadership recognition for expanding in house reliability testing and mentoring engineers.
- Leadership of multidisciplinary reliability programs spanning energy, electronics, mechanical, and systems teams.

EDUCATION

Bachelor of Science in Electrical Engineering

2012

San Jose State University GPA: 3.5

San Jose, CA

Coursework: Electromagnetism, electronics, mechanical physics, materials science

CERTIFICATIONS

- Certified Reliability Engineer, ASQ 📅 2018
- Electrical Safety and High Voltage Laboratory Training 📅 2020

TECHNICAL SKILLS

- **Reliability Methods:** DFMEA, XFMEA, Design for Reliability
- **Statistical Analysis:** DOE, predictive modeling, life test analysis
- **Programming:** Python, Linux command line, scripting
- **Test Automation:** data logging, mission profile testing, automated fixtures
- **Laboratory Testing:** environmental testing, reliability testing, test plan execution
- **Test Equipment:** test rigs, metrology, oscilloscopes
- **Environmental Chambers:** temperature chambers, humidity chambers, large chambers
- **Failure Analysis:** root cause analysis, X ray inspection, teardown analysis
- **Corrective Actions:** CAPA, engineering change orders, recertification
- **Electrical Safety:** 600 to 1000 volt AC, 600 to 1000 volt DC, safe laboratory execution
- **Standards:** UL, NEC, IEC, ISO
- **Hardware Domains:** electromagnetism, electronics, mechanical physics

- **Materials Reliability:** corrosion, plating, materials science
- **Product Systems:** connected energy, IoT hardware, power electronics
- **Laboratory Operations:** third party laboratories, technical standards, test reporting

SKILLS

- Reliability Engineering
- Design for Reliability
- DFMEA
- XFMEA
- Mission Profiles
- DOE
- Statistical Analysis
- Predictive Modeling
- CAPA
- Python
- Linux
- Test Automation
- Metrology
- Root Cause Analysis
- Technical Mentoring

PROFESSIONAL AFFILIATIONS

- ASQ reliability engineering community participant, sharing practical methods for product reliability.
- Connected energy engineering contributor, supporting safer hardware decisions through evidence and teamwork.

LANGUAGES

- English (Native)
- Spanish (Proficient)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST