Rolando S. Uribe

EIT

Staff Consultant

Mr. Uribe is an Electrical Engineer with a concentration in embedded systems and serves as a Staff Consultant with Engineering Systems Inc. (ESi), where he supports investigations through failure analysis, evaluation of physical evidence, and comprehensive incident documentation. He utilizes a variety of technologies, including FARO laser scanning, Matterport, drone mapping, photogrammetry, and other advanced documentation methods to document and analyze incident scenes across the United States.

Prior to joining ESi, Mr. Uribe developed a broad technical background in information technology and electronics, with experience ranging from commercial server and network maintenance to complex motherboard repairs at the microscopic level.

Education

BS, Electrical Engineering. University of Houston. 2026

AS, Electrical Engineering. Lone Star College. 2021

Languages

- English & Spanish

Positions Held

Engineering Systems Inc., Conroe, TX

- Staff Consultant, 2026 - Present
- Sr. Technologist I, 2025 - 2026
- Technologist, 2024 – 2025

RB Mobile Repair and Gadget Cure, Houston, TX

- Repair Technician, 2018 - 2024

Michalec Inc., Houston, TX

- IT Technician, 2017, 2020-2021

Contact Information

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(832) 403-2189

ESi Houston

18500 Trails End Road
Conroe, TX 77385

Areas of Specialization

- Electrical Fires
- 3D Scene Capturing
- Aerial Imagery
- Computer Aided Drafting
- MATLAB Simulations
- Data Recovery
- Electronics Repair
- Mico-soldering
- Software Dev: C, C#, C++, Java
- Micro-controllers

Certifications

- Autodesk® - AutoCAD®, 2017
- CertiPort – IC3 Digital Literacy Certification, 2016
- HAZWOPER 40 Hour – Hazwoper 40 Hour Certification, 2024
- FARO – FARO Focus 3D Scanner Certification, 2024
- Federal Aviation Administration – FAA Part 107 Certified Remote Pilot with Small Unmanned Aircraft System, 2024
- OMRON – Sysmac Programming, 2025

Continuing Education

- **Fire Chemistry** – CFITrainer.net, 2025
- **Electrical Safety** – CFITrainer.net, 2025

Professional Affiliations/Honors

Texas Board of Professional Engineers & Land Surveyors (PELS)

- Engineer In Training (EIT) 2026

Institute of Electrical and Electronics Engineers (IEEE)

- Member since 2024

The Society of Hispanic Professional Engineers, University of Houston (SHPE)

- Member since 2023

Project Experience

Investigations

LED Lighting Fixture Failure Analysis

- Conducted comprehensive engineering evaluation of subject and exemplar LED lighting fixtures to investigate repeated field failures affecting a large commercial installation.
- Reverse engineered fixture circuitry from AC input through driver and LED assemblies, performing electrical characterization, load testing, thermal analysis, and performance validation under varying operating conditions.
- Documented testing results and engineering findings, supporting the conclusion that environmental conditions were the most probable contributing factor to the observed failures.

Portable Electric Heater Failure Investigation

- Reverse engineered the electrical circuitry and control board of a portable electric heater to document component functionality and safety system operation.
- Conducted electrical and thermal characterization under normal and elevated ambient conditions, monitoring current draw, operating temperatures, and overall system performance.
- Validated the operation of the heater's bimetal thermal cutoff through controlled testing and determined its activation temperature to support the ongoing engineering investigation.

Lithium-Ion Battery Evaluation and Product Authentication

- Reverse engineer and evaluate lithium-ion battery packs to differentiate genuine products from counterfeit or clone assemblies through construction, component, and safety feature analysis.
- Document internal circuitry, battery management system (BMS) architecture, protective devices, cell configurations, and other design characteristics to support forensic investigations.
- Provide technical support during origin and cause investigations involving battery-powered equipment by assisting with evidence evaluation and on-site inspections.

Representative Engineering Experience

Portable Vibration Data Acquisition System

- Designed and assembled a portable battery-powered vibration testing system to enable field data collection in environments with unreliable or electrically noisy power sources.
- Integrated DC power distribution, signal conditioning hardware, long-range accelerometers, and a data acquisition (DAQ) system into a transportable platform for field deployment.
- Validated system functionality to support vibration monitoring and data collection during marine and industrial equipment evaluations.

PLC-Based Remote-Controlled Robotic Platform

- Designed and developed a PLC-controlled robotic platform integrating industrial automation hardware, embedded systems, and remote-control functionality.
- Engineered communication between a Raspberry Pi and PLC using OPC UA, with EtherCAT-based motor drive control for real-time system operation.
- Designed the system power architecture, integrating battery power, inverter distribution, industrial controls, and safety features into a portable robotic platform.

Presentations

“Lithium-Ion Batteries: From Thermal Runaway to Insurance Claims”, CLM Houston Chapter, 2026