Elizabeth M. Herrejon

Portfolio | github.com/eherrejon3 | linkedin.com | elizabeth.m.herrejon@gmail.com

Overview

Award-winning, multilingual Electrical Engineer with 2+ years of experience in research and development for defense and military companies. Some strengths include troubleshooting, designing circuits, and applying fundamental electrical principles learned in class to the research completed at work. Experience with developing evaluation methods for embedded software, I/O devices, and embedded systems and analyzing and interpreting the resulting data.

Education

Georgia Institute of Technology, Atlanta, Georgia JAN 2020 - JUN 2022
Honors: Bachelors of Technology in Electrical Engineering and Minor in Robotics GPA: 3.15/4.0

Georgia State University, Atlanta, Georgia AUG 2018 - DEC 2019
Pursued Bachelors of Science in Mathematics GPA: 3.66/4.0

Walton High School, Marietta, Georgia AUG 2014 - MAY 2018
High School Diploma of STEM in Engineering GPA: 3.80/4.0

Experience

Georgia Tech Research Institute - EOSL SEP 2022 - Present
Research Engineer I, Full-Time Atlanta, Georgia

Supported the development and execution of state-of-the-art algorithms involving data fusion, sensor fusion, machine learning, manned/unmanned avionics improvement, and soldier protection software development projects for Department of Defense programs. Learned React Javascript to build new GRIP website from scratch, with a goal to elevate and swiftly improve user experience. Under the Sensor Division, it was possible to work on python scripts to visualize data from HTML, CSV, etc, then plot those results to convey the data; it included algorithms for areas such as target tracking, alternative forms of positioning – navigation – timing (aPNT), and processing of sensor data as needed. Specific tasking included new feature development, debugging code, test case development, integration with other applications and data sources, and in-depth analysis.

Georgia Tech Research Institute - SARA MAY 2022 - JUL 2022
Student Researcher, Internship Atlanta, Georgia

Coding autonomy control software that is resilient to sensor attack. Applying principles from reliability theory and fault-tolerant software design to create controllers for autonomous systems that successfully fail-over into the appropriate "safe" algorithm once a threat has been detected. Two ardware-in-the-loop scenarios to account for: an autonomous car and a swarm of Unmanned Aerial Vehicles (UAVs) in Airsim. Developing new autonomy estimation and localization by blending reliability theory, software engineering, signal processing, and robotic control into a process for Sensor Attack-Resilient Autonomy (SARA).

Georgia Tech Research Institute - ATAS JAN 2020 - FEB 2022
Electrical Engineering Researcher Assistant, Part-Time Smyrna, Georgia

Worked with the System Design Division to support various engineers in SSD to troubleshoot circuits, create circuit diagrams, build cable assemblies, and generate technical diagrams. Received Interim Security Clearance and worked on various projects assisting engineers by checking, building, and creating systems to practice and expand on fundamental electrical principles learned in class.

Georgia Tech Research Institute - Robotic Behavior Development MAY 2021 - JUL 2021
Undergraduate Research Internship Program, Intern Atlanta, Georgia

Worked with the creation and composition of robotic primitive skills to create flexible behaviors on a 6 degree-of-freedom robotic system in order to create dexterous grasping and manipulation behaviors with a robotic arm with integrated force/torque and vision sensing. Coded in python to develop a deep learning program, Mask RCNN, to catalog and identify different types of electrical connectors using a custom dataset with noise to run training and inference on unmarked images and videos.

Georgia Tech Research Institute - Support Services Department (SSD) MAY 2019 - DEC 2019
Admin Support Student Assistant, Part-Time Atlanta, Georgia

Worked under the guidance of an administrative manager to perform different business administrative duties such as creating manuals and spreadsheets, organizing and distributing keys to new employees at 762-B11, create name tags, assign keys in TMA, look over different architectural drawings to assign positions for moving employees, and manage project schedules and office coordination.

Portman Project - GT CODA JUN 2017 - JUL 2017
Student Intern, Intern Atlanta, Georgia

Worked on site at the headquarters of the CODA project where construction plans were reviewed and modified daily to incorporate the needs of engineers. Some of the duties performed included calculating the volume for the basement support columns and organized project files.

Integral Construction Inc. - Editing Division MAY 2017 - JUN 2017
Student Intern, Intern Atlanta, Georgia

Reviewed plumbing, electrical, landscape, and mechanical architectural drawings for different engineers while directly editing the files to upload to the company shared drive. Used both AutoCad and Revit to complete the edits.

Presentations

Sensor Attack Resilient Autonomy

GRIP Presentation, Atlanta, GA, July 2022. Herrejon, E.; Zhang, A.; Perline, J.; Ahn,B.; "Utilizing AirSim Simulations to Detect Drone Spoofing" (poster and powerpoint).

Georgia Tech Product Exposition

Sweet Dreams Pitch, Atlanta, GA, April 2022. Roberts, K.; Elly, H.; Herrejon, E.; Saw, C.; Kassabain, L.; Weatherwax, K.; Changela, R. "nemi: The Stun Gun Glove" (poster and powerpoint).

Robotic Development and Behavior Summer Proposal

5th Floor Board Room, GTRI Headquarters, Atlanta, GA, July 2021. Lindbeck, C.; Popa, A.; Herrejon, E.; Freidank, W.; Boyd, N.; Balakirsky S. "Robotic Automation of Electrical Maintenance" (poster).

IRAD Extravaganza

GTRI Poster Session, Smyrna, GA, June 2020. Travis, S.; Sessions, W.; Gardner, R.; Herrejon, E.; Greene, B. "Reactive Near-Field Differential Sensor" (poster).

Senior Capstone Project

STEM Capstone Invention Pitch, Marietta, GA, May 2018. Johnson, M.; Storm, C.; Herrejon, E.; de Cleir, S. "Dysgraphia Pen" (poster and powerpoint).

Projects

Local Roof Sensor Moderation MAY 2023 - Present
Research Engineer

- Monitoring the local Atlanta air traffic by implementing object detection, object tracking, and data analysis on the given object.

STEM Outreach Project Design SEP 2023 - AUG 2023
Lead Designer, Manager

- Designing and prototyping two projects with a focus of basic circuitry design and magnetism. One project is a basic midi controller that takes inputs from fruits, such as apples or oranges. The other project breaks down wireless charging.

Georgia Tech Research Internship Program SEP 2022 - Present
Co-Developer GRIP

- Revamped and made a more efficient website for the GRIP Summer Program using ReactJS and next.js.

Achievements

HIVES Recipient JUN 2023
Secret Clearance Iss. 02 15 2020
OMED Bronze Senior Excellency Award APR 2022
SHPE Scholarship Recipient MAY 2020, MAY 2021
HSF Scholar Recipient DEC-2020
OMED Gold Academic Transfer Award SEP 2020
GSU Hackathon: Honorary Mention (Cryptology) OCT 2018, MAR 2019

Service

STEM Outreach OCT-2023, MAY-2023, DEC 2022, SEP 2022
Member, Volunteer

Attended various elementary and middle schools across the metropolitan city of Atlanta presenting physics and chemistry demos, with over 40+ hours recorded. Presented demos of projects that were designed and prototyped by various personnel.

Key Club 2014 - 2020
Vice President, Committee Officer

Recorded meeting notes and correspond with collaboration organizations. Developed and executed volunteer projects locally. Organized events to unite local students interested in volunteering around town and present student hours to president.

Society of Women Engineers NEXT 2016 - 2020
Co-Founder, President

Founded local branch for high school students. Guided members in finding different research positions. Organize events to expose members to different kinds of engineering research.

Covenant House 2019
Volunteer

Worked with homeless teens, providing clothes and mentoring on college enrollment. Wrote, edited three grant summaries for the president consideration.

Technical Skills

Programming languages: C++, C, Python, C#, Java, Kotlin
Web Tech: HTML, CSS, Jupyter Notebooks, JavaScript
ML/AI: Pytorch, Numpy, Pandas, Matplotlib, GDAL
Miscellaneous: Dart, Git, Shell, FPGA, MQTT, Linux
Softwares: NI, Photoshop, After Effects, Sony Vegas Pro, Revit, Autocad, Inventor, Arduino, Solidworks, Android Studio, Multisim, Keil uVision, Matlab, VHDL, Arm Mbed, TI Code Composer Studio
Lab Equipment: DC power supplies, function generators, oscilloscopes, digital multimeters, RCL meters, etc.
Microsoft: Proficient in Excel, Word, Powerpoint, Visio, Publisher, Visual Studio, AirSim, etc.

Relevant Coursework

Electrical Engineering: Digital System Design, Intro Signal Processing, Circuit Analysis, Microelectronic Circuits, Signals and Systems, Electromagnetics, Energy Systems, Intro to Computer Security, Intro Automation and Robotics, Embedded Systems Design, Control System Design, Senior Design
Computer Science: Intro Artificial Intelligence, Intro to Computer Vision

Languages

English (fluent)
Spanish (conversational)
French (beginner)