# Luis Hernandez

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AI/Machine Learning enthusiast with experience in fields ranging from Data Science to Software Development. Worked with different government collaborators on projects involving machine learning in various fields as well as side projects involving software development. Eager to join an organization who will help me grow and put my skills and knowledge to the test.

## TECHNICAL SKILLS

- ·AI/Machine Learning (Scikit-learn, PyTorch)
- ·Back-end Development (Python, C#)
- ·Data Science (Matplotlib, NumPy, Pandas)
- ·Database Management (SQL)
- ·Command-Line Proficiency (Linux/Unix)
- ·Convolutional Neural Networks (UNet, YOLO)
- ·Problem Solving
- ·Front-end Development (HTML, JavaScript, React, Tailwind CSS)
- ·Software Development
- ·High Performance Computing Knowledge (GPU, CPU)
- ·Transformer-Based Models (MaskFormer, Mask2Former, Segformer)

## PROFESSIONAL EXPERIENCE

**NASA JET PROPULSION LABORATORY**                                    **California, USA**

Data Science/Machine Learning Intern                                    *June 2024-August 2024*

- Worked on a project involving the development of tools to monitor the phenology of tropical trees under the mentorship of Dr. Gary Doran Jr. Tested and reported on the performance of various machine learning models in the detection of phenological events of different tropical tree species.

**FAYETTEVILLE STATE UNIVERSITY**                                    **North Carolina, USA**

Intelligent Systems Laboratory Lead Student Researcher                                    *April 2023-Present*

- Led a project involving the analysis of SAR imagery of the surface of Venus for the purpose of using machine learning to predict and map fault lines on Venus's surface. Developed and tested machine learning pipelines for pre-processing data, training a model, and post-processing and converting model predictions into readable GIS data for UNet, Mask2Former, and Segformer. This project is funded by NASA JPL in support of the VERITAS mission.
- Tested machine learning pipelines for UNet for the use of ship detection using satellite imagery. Tested methods into trying to run the model in a SnapDragon. This project is funded by NASA JPL.
- Collected and annotated both real and synthetic data for use in training AI models to detect small and rare real-life objects such as CCTV cameras and military weaponry. This project is funded by the DoD.

Intelligent Systems Laboratory Lab Technician                                    *October 2024-June 2025*

- Maintained and regularly updated the organization's vector computers. Helped onboard members who wanted to use the machines for their respective projects. Represented organization in various school programs and activities.

Faculty Research Lead Student Researcher                                    *May 2023-June 2025*

- Worked with designing efficient access control schemes for implantable medical devices under the mentorship of Dr. Longfei Wu. Dealt with the problem of data compression and decompression when being transferred to and from different medical devices. This project is funded by the National Science Foundation.
- Worked with lightweight encryption under the mentorship of Dr. Longfei Wu. Tested various lightweight encryption and decryption algorithms on ESP8266 microchips. This project is funded by the National Science Foundation.

## EDUCATION

**FAYETTEVILLE STATE UNIVERSITY**                    *September 2022-May 2025*

BS Computer Science – Summa Cum Laude, 3x Chancellor's List Honoree

**FAYETTEVILLE STATE UNIVERSITY**                    *August 2025-Present*

Certificate in Data Science

## JOURNALS

- Wilkerson, M., Brown, T. J., Davis, G., White, T., Lockart, J., Hernandez, L., & Bhattacharya, S. (2025, August, accepted). Real-Time Multimodal AI for Medical Intervention Understanding. In *11th IEEE International Conference on Data Science and Systems 2025 (DSS-2025)*. IEEE.
- Thuya, L., House, J., Hernandez, L., Hasnain, Z., Mendoza, S., Chou, E., Nakaya, S., & Smrekar, S. (2025, July, submitted). *From tiles to tectonics: Stitching ML-segmented faults into a global Venus fault map.* In *Agu Fall Meeting 2025 (AGU25),* American Geophysical Union.
- Chou, E., Hernandez, L., Hasnain, Z., Smrekar, S., Thuya, L., House, J., Nakaya, S., & Mendoza, S. (2025, July, submitted). *Automated mapping of wrinkle ridge faults on Venus using machine learning.* In *AGU Fall Meeting 2025 (AGU25).* American Geophysical Union.

## ADDITIONAL EXPERIENCE

NASA Minds Competition

- Created an inventory tracking system that utilizes RFID technology for ease of inventory management.

EventPulse NC Competition

- Created an "all-in-one" calendar website that collects and categorizes all major events for all major universities within North Carolina. EventPulse_NC

Senior Project

- Developed a multi-modal AI system designed to automate the documentation process of first aid application on an injured person via synchronized audio and video data.

Software Development Project

- Developed a car rental system complete with multiple functionalities such as database management, maps, automatic pricing, car maintenance, etc. CarRental