Catalina Murray

Gainesville, Florida | 310.918.1899 | catalinamurray11@gmail.com

Highly organized and creative electrical and computer engineering master's student interested in machine learning applications.

SPECIAL SKILLS

Website: https://catalinamurray.github.io

Computer Skills: Proficient in Python, MATLAB, Java, TensorFlow, PyTorch, Sci-kit Learn, R, ROS, Linux, Git, Arduino, LabView, Docker, InDesign, Adobe Photoshop, Latex, Fusion 360, Solid Works, Creo Parametric.

Certifications: AED, CPR, Lifeguard, Radio Operator, and Credentialed Bareboat Skipper.

EDUCATION

University of Florida: Master's in Electrical and Computer Engineering, May 2024 GPA: 3.8
Wake Forest University: Bachelor of Science in Engineering, May 2022 GPA: 3.7

WORK EXPERIENCE

***Machine Learning and Electromechanical Controls Intern*,** The Aerospace Corporation**,** June - August 2023

- Worked with the Data Science department on a natural language processing project that utilized clustering algorithms like BERTopic to perform topic modeling on issue tickets.
- Performed hardware verification testing for GPS User equipment, including signal integrity, continuity, and crosstalk testing.

***Electromechanical Controls Intern*,** The Aerospace Corporation**,** June - August 2022

- Replicated the accelerometer portion of an IMU sensor to mimic what is seen on launch vehicles, and characterized the hardware by performing scale factor, bias, temperature, and vibration testing. Utilized Texas Instruments analog-to-digital converter and Lab View software to test.
- Supported a simulated launch by analyzing real-time data for an (IMU) Inertial Measurement Unit.

***Vehicle Shock and Vibration Intern*,** The Aerospace Corporation**,** June - August 2021

- Used spectral analysis techniques and knowledge of dynamic environments to perform analysis for various parts of the vehicle including the engine.
- Performed in-house hardware testing using a Data Acquisition System and Modal Shaker to create a Finite Element Model to simulate how various types of fasteners on a Payload Attach Fitting affect its dynamic response.
- Utilized Femap, MATLAB, Python, and NX Nastran to further refine the model.

RESEARCH EXPERIENCE

Robo Pi Lab, The University of Florida**,** August - December 2022

- Underwater Data Center Project: collaborated with the hardware security department to research whether acoustic signals attack HDD's underwater in the same way they do in the air.
- Investigated Turtlebot 4 applications including autonomous mapping, wall-following, and person-following.

MAJOR PROJECTS

Machine Learning Projects, University of Florida, August - December 2023

- Various projects including an analysis of the use of MLP vs CNN vs Stacked Autoencoder to classify Japanese character dataset. Implemented with TensorFlow and PyTorch. Other projects include object detection, image classification, and image generation.

Pattern Recognition Project, University of Florida, Jan - April 2023

- Utilized deep learning frameworks and convolutional neural networks to detect fabric content with images. Utilized various computer vision techniques including processing the images and extracting their textural features.

HOBBIES AND INTERESTS

- Surfing, Sailing, Diving, Marathon Running, 3D printing