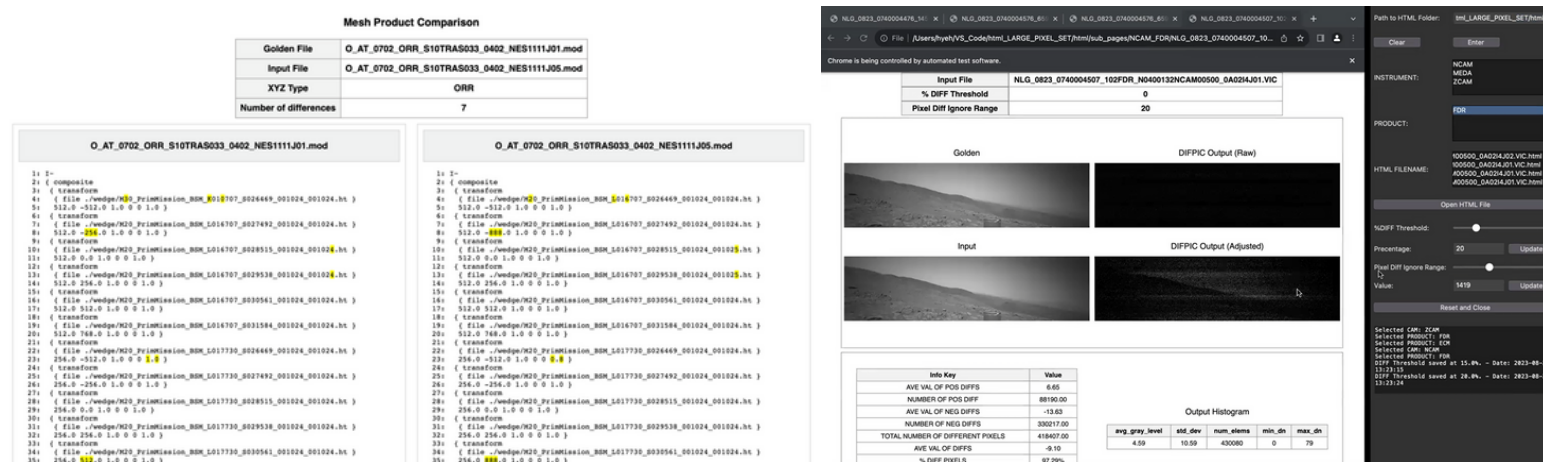


# HUANYING (JOY) YEH

EE&CS AT JOHNS HOPKINS UNIVERSITY

joy.2002.art@gmail.com  
linkedin.com/in/joy-yeh-2002/  
(916) 220-9353

## PERSEVERANCE ROVER CI/CD TEST SUITE - NASA JPL (LINK)



### What?

- Implemented **Python test suites** to verify Mars rover data products
- CI/CD development with the **M20 database** at JPL

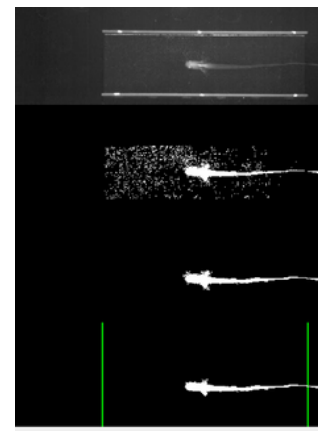
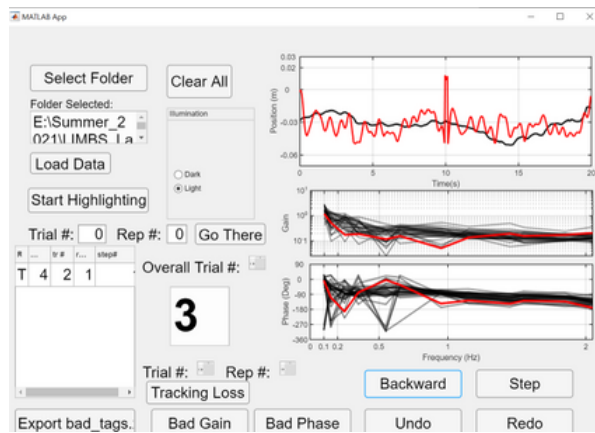
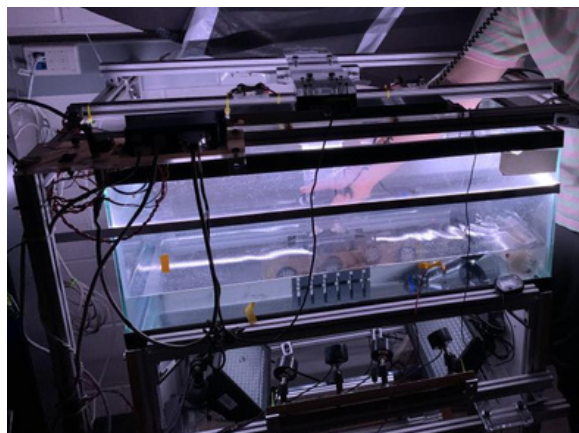
### How?

- Used the **Behave** framework
- HTML** reports, **bash** scripts, and **S3** cloud
- Worked with **GitHub** and **Linux remote machine**

### Results

- Supported validations of dozens of image/text data types on **DataDrive**
- Designed **data structures** to sort through thousands of images
- Built **Python GUI** for easy test parameter modification from users

## ELECTRIC FISH LOCOMOTION RESEARCH - LIMBS LAB (LINK)



### What?

- Designed and ran **800+** experiment trials on object tracking behavior of electric fish
- Focusing on **control theory** in animal locomotion

### How?

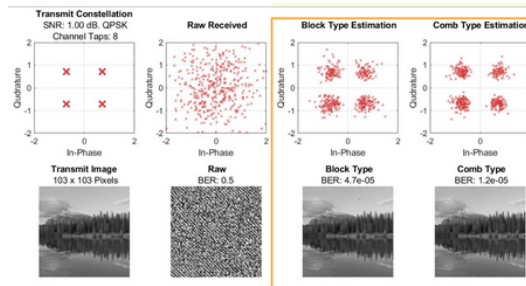
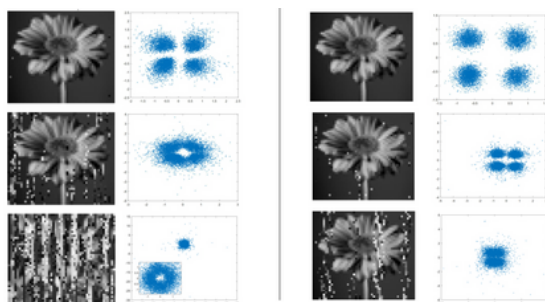
- Analyzed data with **MATLAB**, **Python**, and **DeepLabCut**
- Used **system ID** and **image processing**
- Rich experiences in **technical writing** and **presentations**

### Results

- Presented **poster** at the 2023 SICB international conference
- Working on manuscript for a **first co-author journal article**

CHECK OUT MY WEBSITE FOR MORE: [HTTPS://JOYYEH2002.GITHUB.IO/](https://JOYYEH2002.GITHUB.IO/)

## WIRELESS AUDIO + IMAGE TRANSMISSION - EPFL ([LINK](#))



### What?

- Use a speaker and microphone to **transmit images** wirelessly
- Implement **DSP algorithms** to recover noisy data

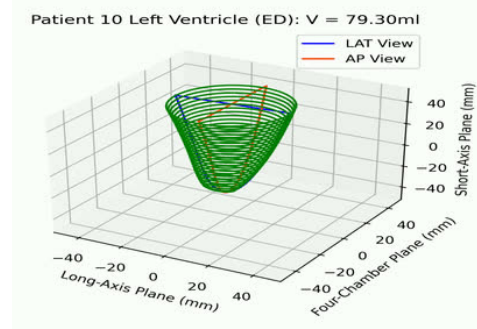
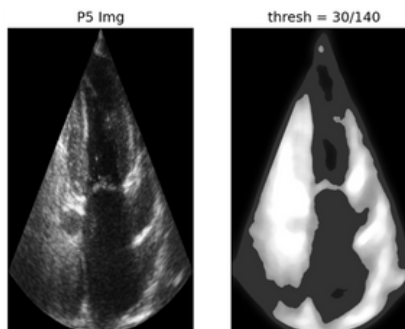
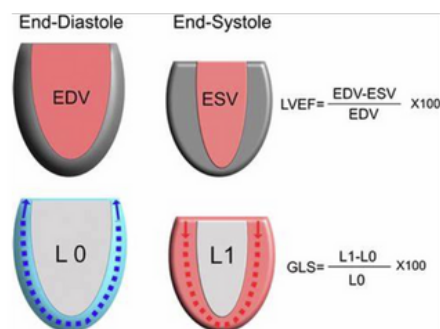
### How?

- Used **MATLAB** for data packaging, testing, and visualization
- Tested the system under different extents of audio fading

### Results

- Achieved sub-0.00001 bit error rate with **OFDM algorithm**
- Comprehensively evaluated system performances with code

## CARDIAC VOLUME 3D RECONSTRUCTION - JHU ([LINK](#))



### What?

- Used ultrasound images to re-construct **3D videos** of a beating heart
- Applied knowledge from the **Medical Image Analysis course**

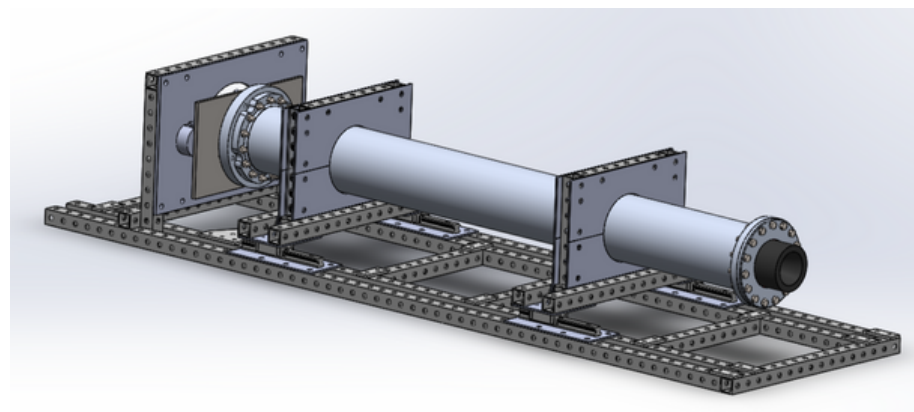
### How?

- Used **Python, OpenCV**, and **MATLAB** for pre-processing, data pipeline design, and testing
- Constructed videos with interpolation

### Results

- 64% accuracy with ESV and EDV volume estimations
- Robust LV identification with **image thresholding** and **template matching**

## ROCKET THRUST STAND - ASTROJAYS ROCKETRY ([LINK](#))



### What?

- Used **SOLIDWORKS** and **ANSI technical drawings** to design a thrust stand for combustion chamber hotfire tests

### How?

- Fulfilled design requirements to hold a O-class engine with **825 lb of thrust** and **9100lbf-s total impulse**
- Created the bill of materials and order list
- **Manufacturing completed** in fall 2022