

BACKGROUND

CLIENT & ADVISOR

- DR. Wood
 - **Professor** | Ocean Engineering and Marine Sciences
 - Program Chair for Ocean Engineering

- Marius Silaghi
 - Professor | Electrical Engineering and Computer Science





TEC-V

- > Topographic
- Exploration
- > Cave
- Vehicle

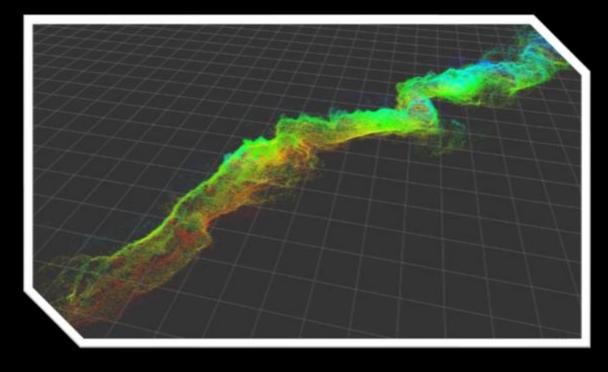


CAVE MAPPING

Problem



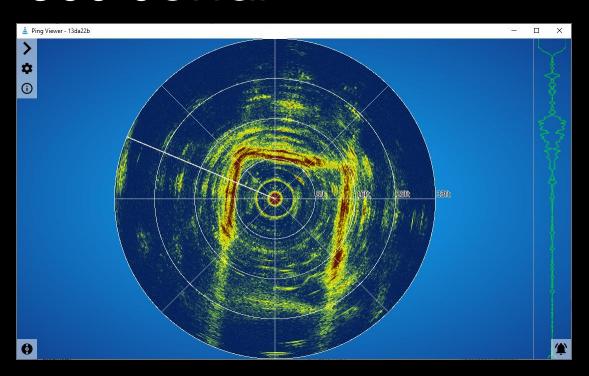
Goal



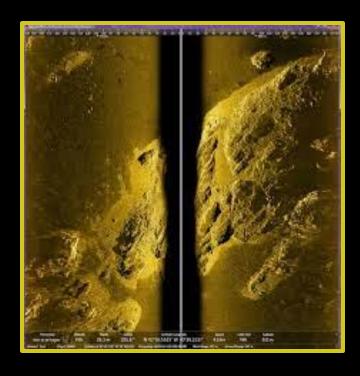
HOMS

SONAR

360 Sonar



Side Scan



Data.csv

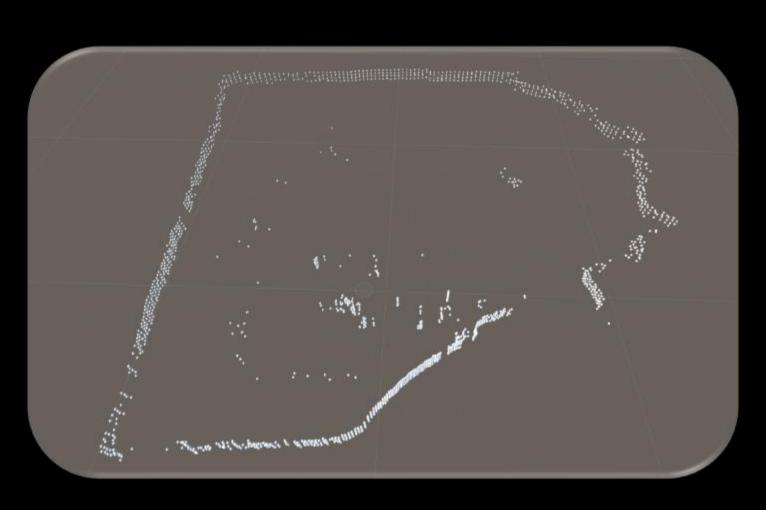
- Five categories
 - Depth (in progress)
 - Angle
 - Most likely distance to object
 - Telemetry
 - Time Stamp

DATA SAVING

```
C DataRead.cs
                 data.csv
Assets > III data.csv
        0,0,5.16552375
        0,1,5.116406249999999
        0,2,4.993612499999999
        0,3,4.9526812499999995
        0,4,4.846259999999999
        0,5,4.739838749999999
        0,6,4.690721249999999
       0,7,4.657976249999999
       0,8,4.592486249999999
       0,9,4.543368749999999
       0,10,4.4778787499999995
       0,11,4.396016249999999
       0,12,4.3632712499999995
       0,13,4.314153749999999
        0,14,4.29778125
```

MAPPING





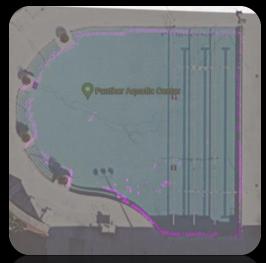
10-21-23

• Clemente Pool 10 a.m. to 1 p.m.

• Goal:

- Test sonar data retrieval
- Collect Data for Cloud Plotting
- Have a real-world test to see accuracy

TESTING

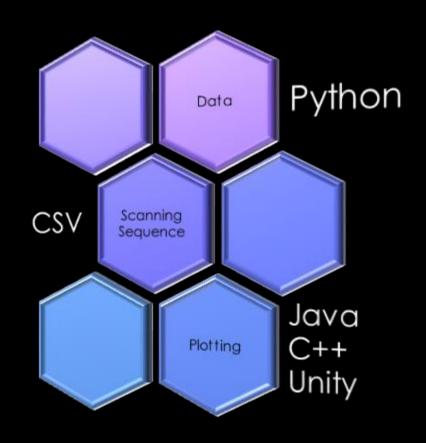




PREFERRED SKILLS

PRIMARY TOOLS

- Coding Languages:
 - Data: Python
 - Raspberry Pi
 - Plotting: Unity / C++
 - Allows for better data manipulation in 3D environment
- Other Skills:
 - Web or app development
 - Data Manipulation



CURRENT

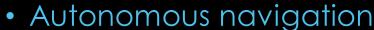
COMPUTER SCIENCE TEAM

Michael Dowling



- Rotation plotting
 - Using telemetry data to help fix cloud plots when or if a rotation/angle changes
- Working with new sonar
- False Data

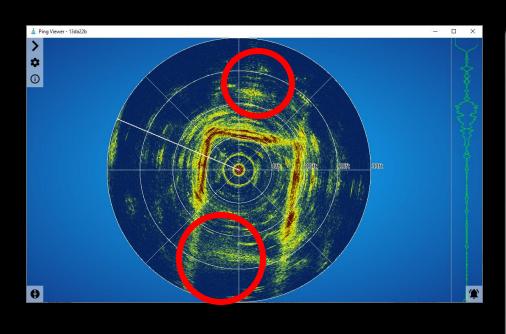
Zealand Brennan

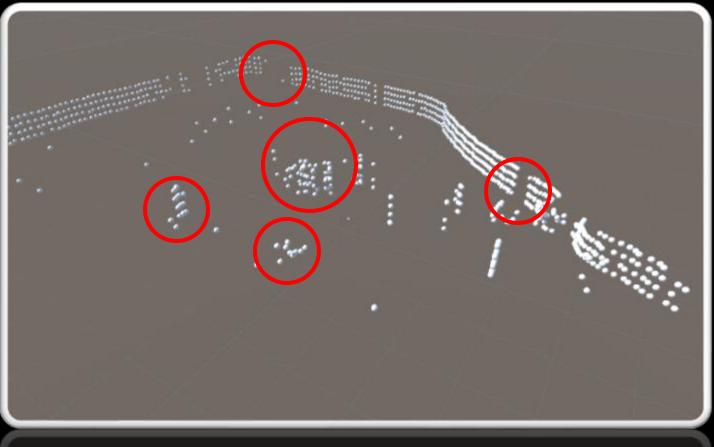


Utilizing Gazebo



EXAMPLE PROBLEM: FALSE DATA





OCEAN ENGINEERING TEAM

Spring 2024

- Mount new Side Scan Sonar
- Create an outer shell
 - Carbon Fiber





QUESTIONS?

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