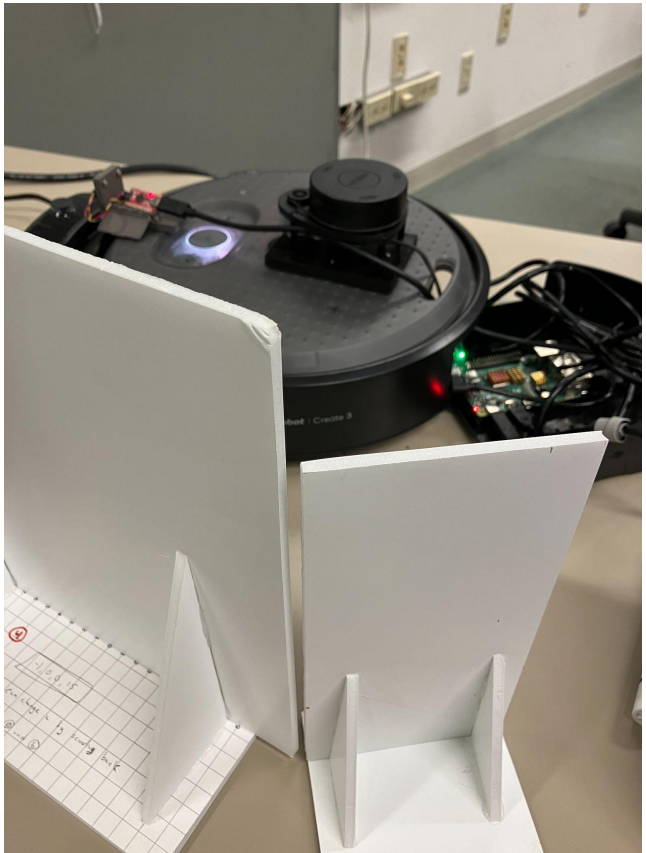
RPLiDAR Experiments

10/31/2023

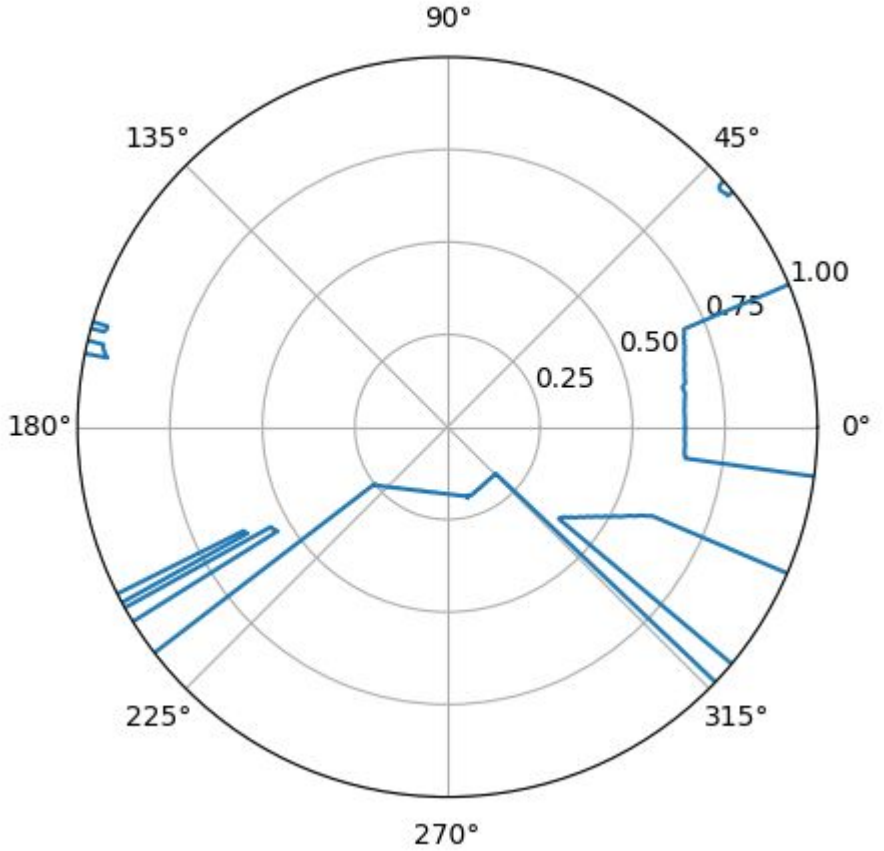
Setup: Horizontal Experiments

Note: min range = 0.15m, max range = 20m



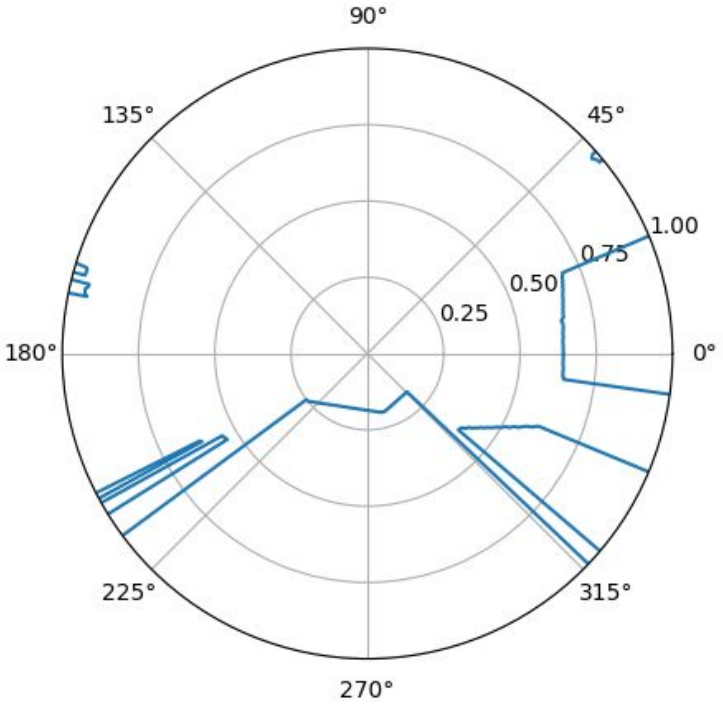
Depth = 18cm, Gap = 0cm

0 points scan through as expected



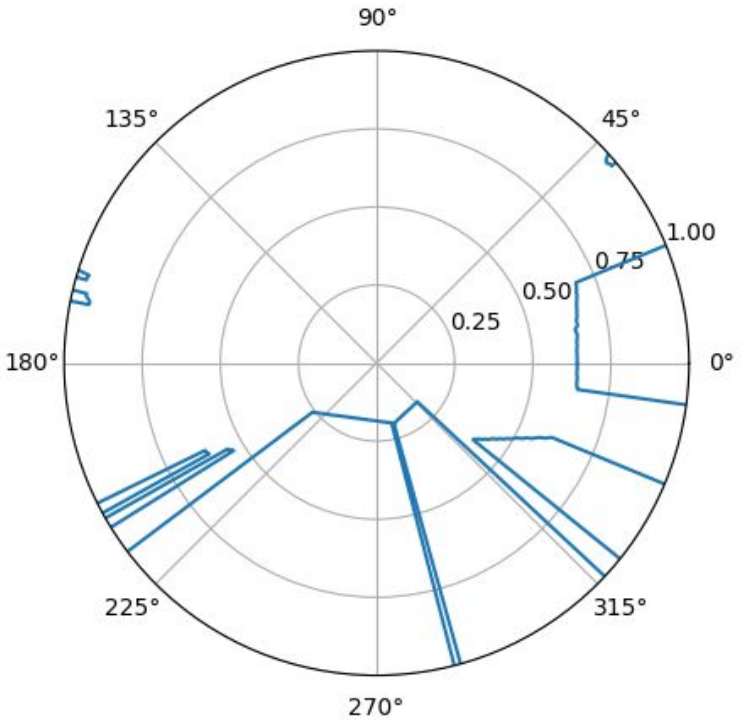
Depth = 18cm, Gap = 0.25cm

0 points scan through, fidelity is not enough for 0.8°



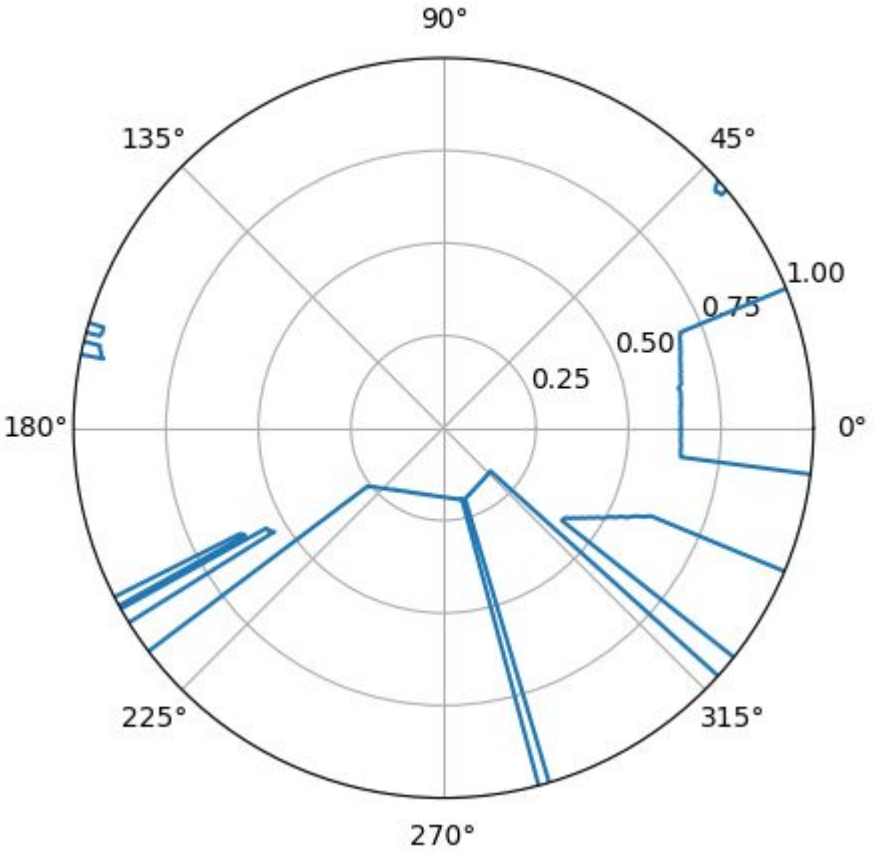
Depth = 18cm, Gap = 0.5cm

2-3 points scan through, fidelity good for 1.6°



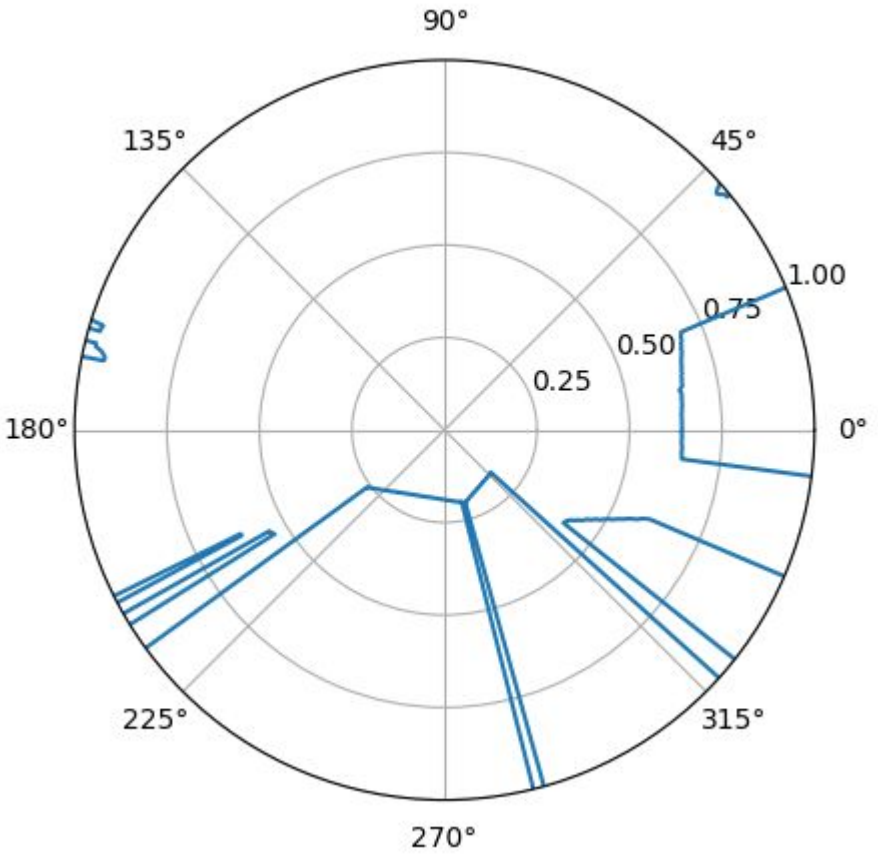
Depth = 18cm, Gap = 0.75cm

3 points scan through (2.38°)



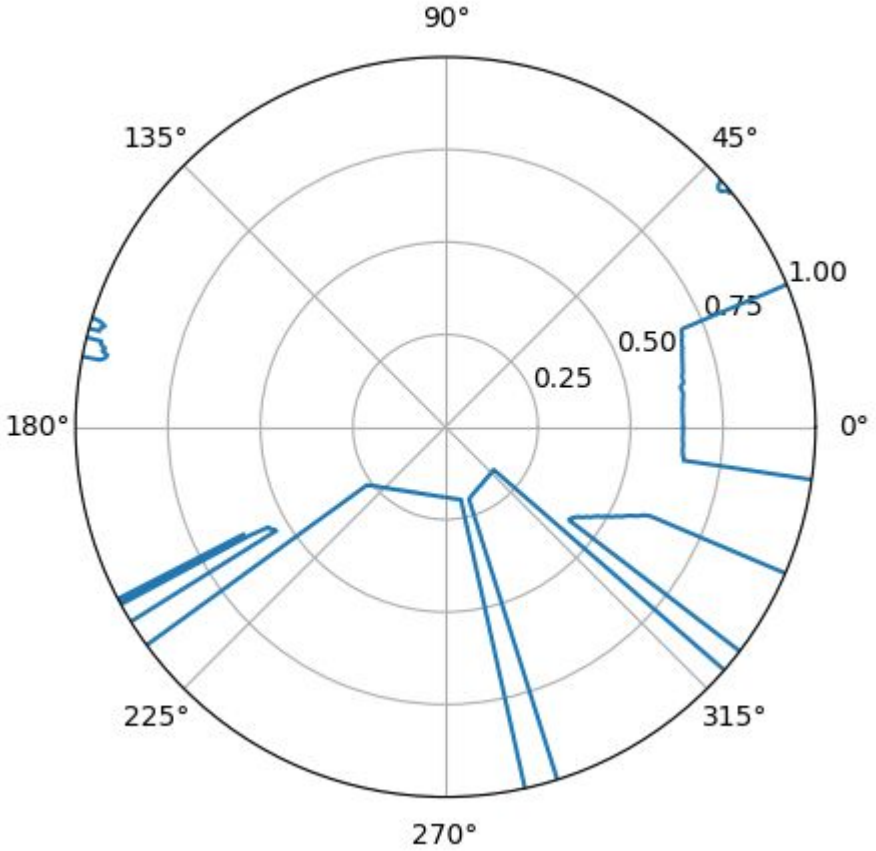
Depth = 18cm, Gap = 1.0cm

4-5 points scan through (3.18°)



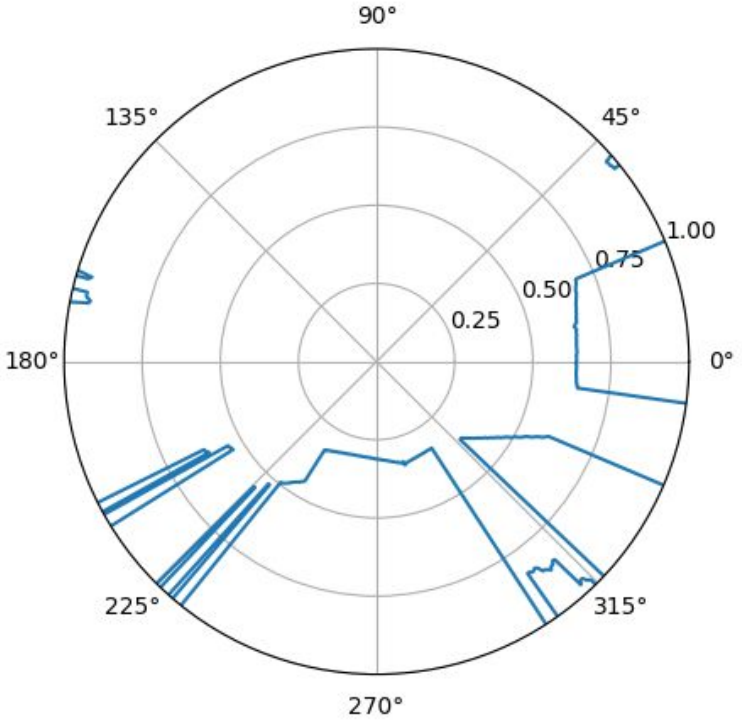
Depth = 18cm, Gap = 2.0cm

11 points scan through (6.36°)



Depth = 33cm, Gap = 0.25cm

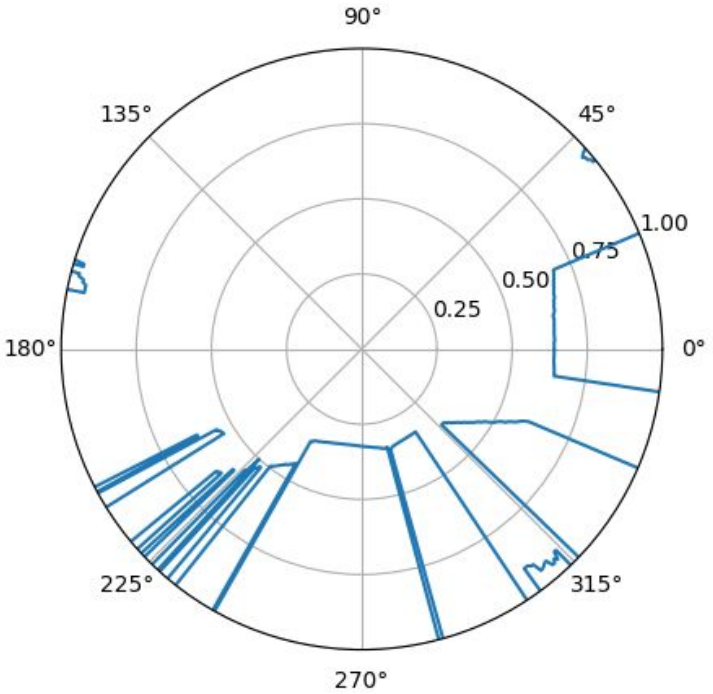
0 points scan through, fidelity is not enough for 0.43°



Depth = 33cm, Gap = 1.0cm

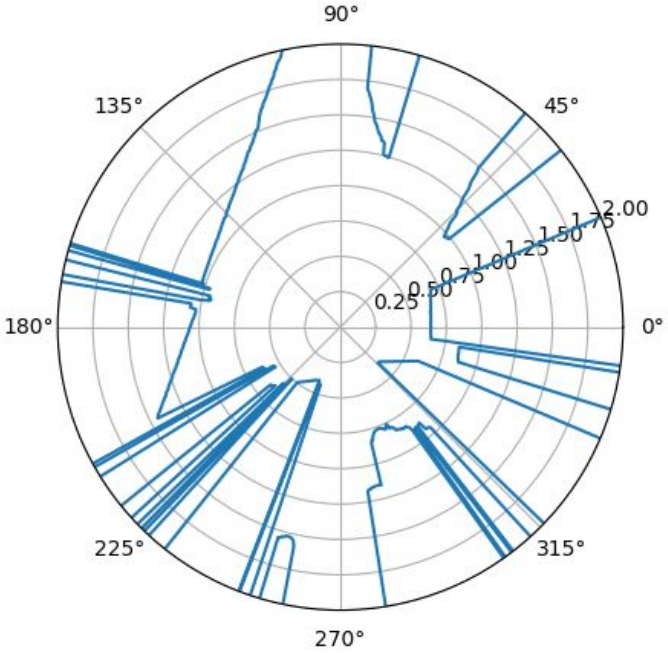
2 points scan through, behavior is the same as depth=18cm

(4 points scans through for 2.0 cm)



Vertical Experiments

Appears to have no interference from the SPAD mount, nor from above.
Discrepancy at ~170° comes from metal beam on wall



Conclusion

- Horizontal FOV behavior and fidelity appears to match spec sheet (~1° resolution)
- Vertical FOV behavior needs more testing, but it appears to be very flat