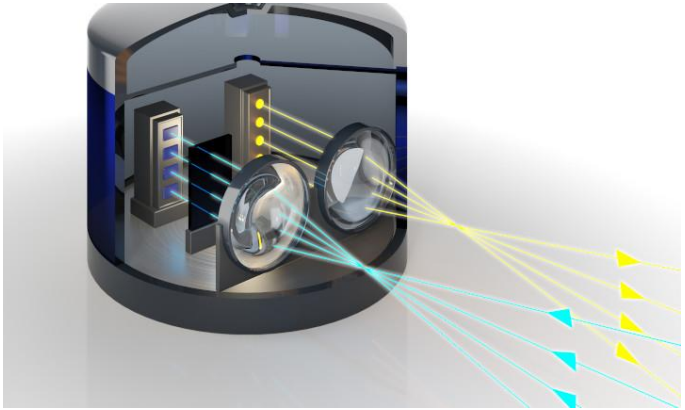
ENGR 4421: Robotics II

Lidar

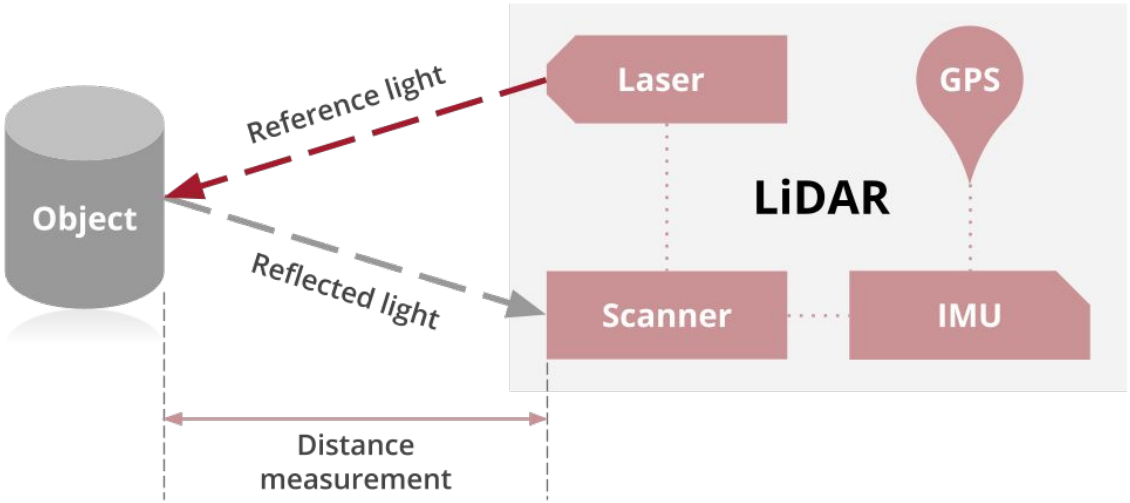
01/18/2022

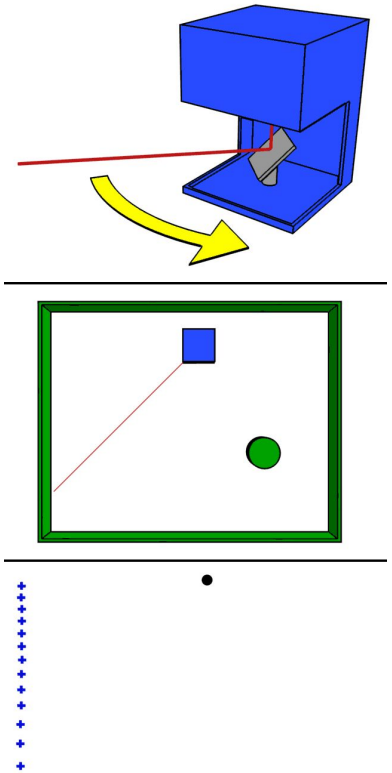
What is Lidar

- Light Detection and Ranging
- Light Imaging, Detection and Ranging
- Is a remote sensing method that uses focused light (laser) to measure distances.

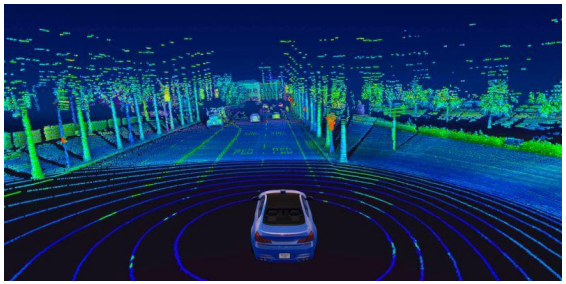


How Does a Lidar Work



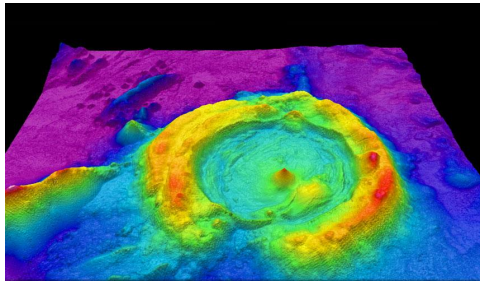


Applications

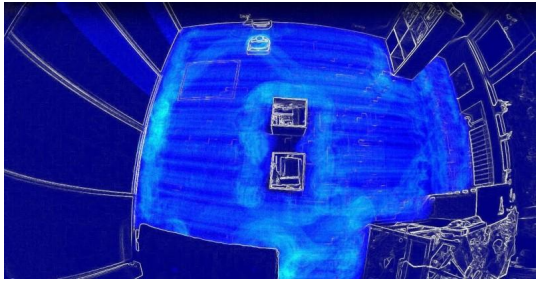


Autonomous Driving

Face Identification



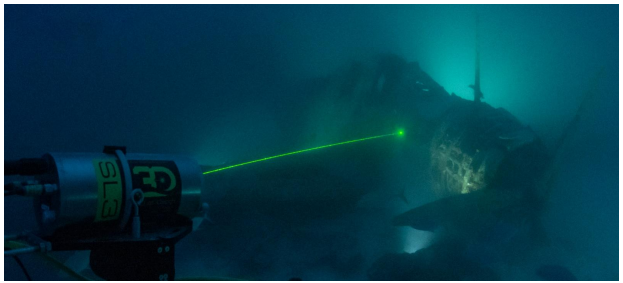
Survey



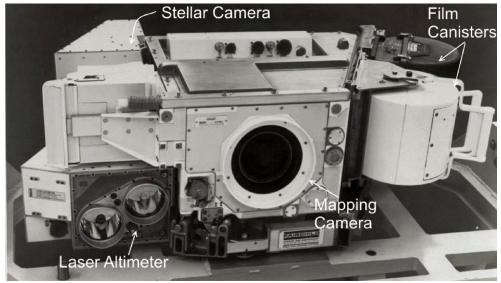
Housekeeping

Applications

Airborne



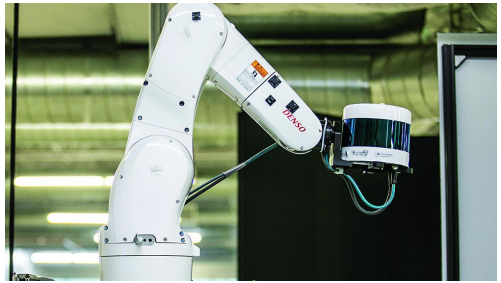
Underwater



Space

Mobile robot

Quadruped robot



Robotic arm

RPLidar A1M8

Detection Range	0.15m - 12m
Scan Rate	2Hz - 10Hz (Nominal: 5.5Hz)
Sample Frequency	8000 Samples/Second
Angular Resolution	≤1°
Accuracy	1% of the range（≤3 m） 2% of the range（3-5 m） 2.5% of the range（5-25m）

RPLidar Get Started

- Full specs: https://www.slamtec.com/en/Lidar/A1Spec
- Datasheet: https://bucket-download.slamtec.com/d1e428e7efbdcd65a8ea111061794fb8d4ccd3a0/LD108_SLAMTEC_rplidar_datasheet_A1M8_v3.0_en.pdf
- SDK: https://github.com/slamtec/rplidar_sdk
- Python interface: https://github.com/adafruit/Adafruit_CircuitPython_RPLIDAR
- ROS2 package: https://github.com/slamtec/rplidar_ros/tree/ros2