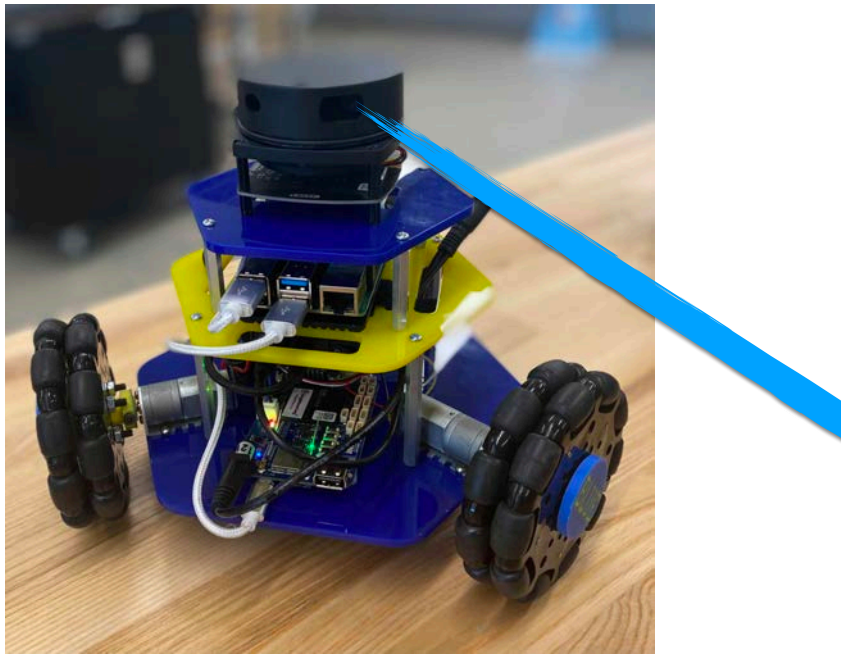
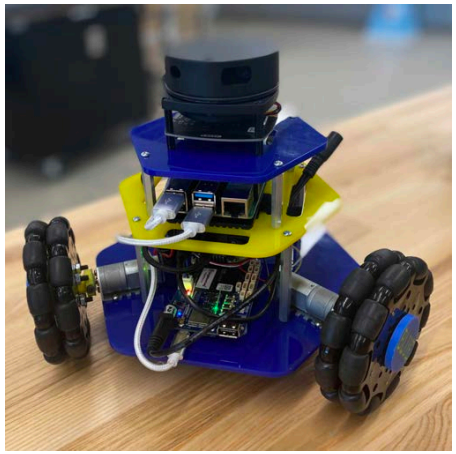
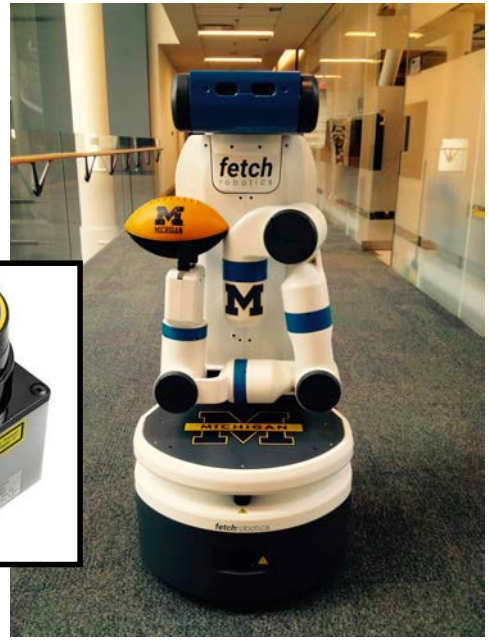
Robotics 102 (Sep 8 2021)

- Project 0 (Pocket Calculator) Demo - calculator66, calculator71
- Open Q&A
- In-class Activity: Range scan conversion (optional, but encouraged)

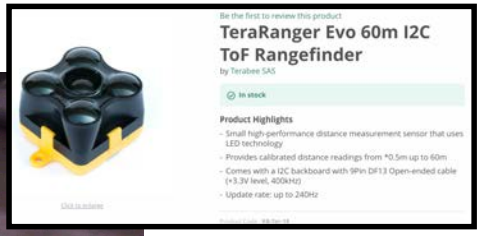




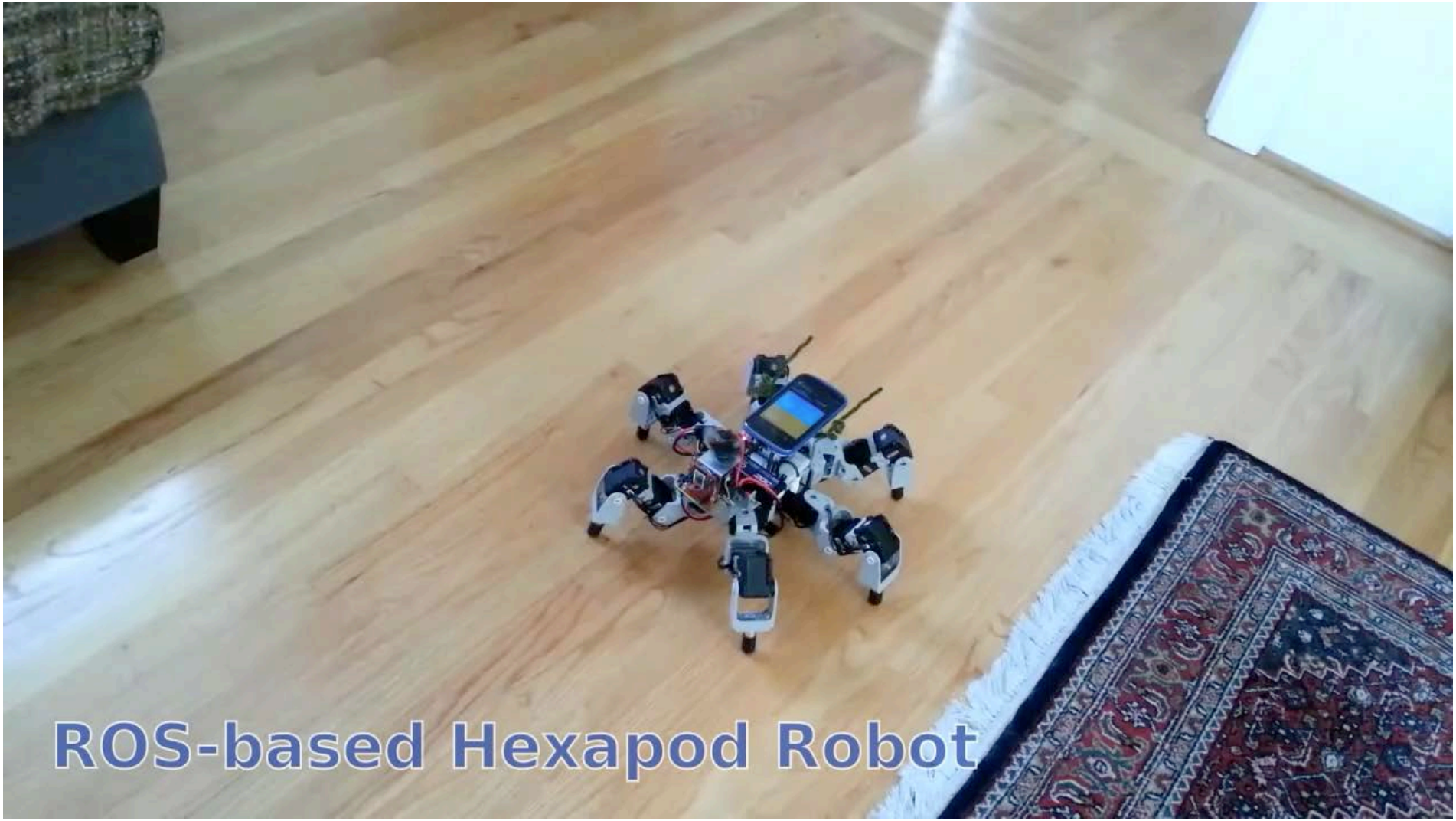
Velodyne


fetch
MICHIGAN


Make:
Rhoeby the
LIDAR Hexapod


TeraRanger Evo 60m I2C
ToF Rangefinder
In stock
Product Highlights

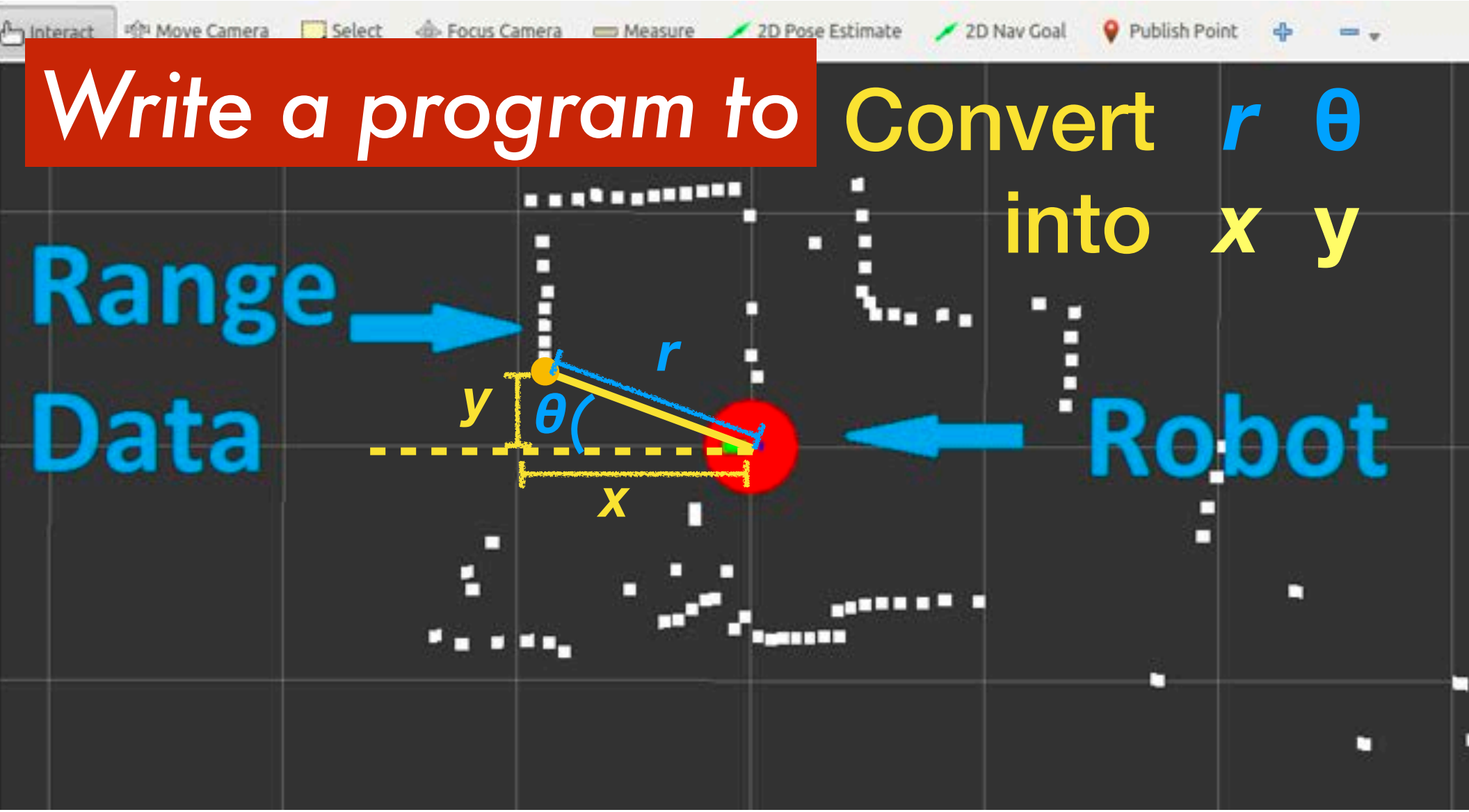
https://www.roboticstomorrow.com/article/2015/11/low-cost-lidar-based-navigation-for-mobile-robotics/7270



Convert range into point


Interact
Move Camera
Select
Focus Camera
Measure
2D Pose Estimate
2D Nav Goal
Publish Point
Range
Data
Robot


Interact
Move Camera
Select
Focus Camera
Measure
2D Pose Estimate
2D Nav Goal
Publish Point
Range
Data
r
θ
Robot


Interact
Move Camera
Select
Focus Camera
Measure
2D Pose Estimate
2D Nav Goal
Publish Point
Write a program to
Convert r θ
into x y
Range
Data
r
y
θ
x
Robot

Take range from user input; Convert with a **single** function

convertRangeToPoint.cpp

```
[redacted] convertRangeToPoint([redacted])
{
  // convert polar coordinates to Cartesian coordinates
  [redacted]
    return [redacted];
}
```