Project 3: Sensor Models
From Project 2…

• Take at least 5 samples each for: 8, 9, 10, 14, 20, 30, 40, 60, 80 cm.

• Two plots for each sensor:
  • Mean sensor value as a function of distance (cm)
  • Mean sensor value as a function of 1/distance (1/cm)
Component 2: Sensor Model

Fit a \textit{simple} function to your data

- 8cm should be captured well
- Adjust the other parameters of your function to capture the rest of your data as best as possible
Component 3: Implement the Model

• Implement the function:
  
  ```c
  float read_distance()
  ```

  • Return value in cm

• This function must not contain `printf()` or `delay()`
Component 4: Test

• Take at least 5 samples each for: 8, 9, 10, 14, 20, 30, 40, 60, 80 cm.

• Plot sensed distance value as a function of true distance

• Your results should be what you expect!
Hints

• Make sure that the signal is reflecting off a vertically-oriented surface and not the table
• Start this project early
• Keep things simple