# Head Tracking Hardware

## Option 1

Create our own code with selected hardware to implement head tilting

Pros: Easier to diagnose, Can select specific hardware that works for our use case  
Cons: Harder to implement, debugging time

<https://www.adafruit.com/category/521>

* Use MPU6050 with the Arduino, this is a Gyroscope and Accelerometer chip for the Arduino.
  + Can use Raheel’s premade code and modify to work
  + Will work for head tilt using combination of angular acceleration
  + However can possibly be fooled by moving head too fast(calibration will help reduce this)
* Use a chip with Magnetometer embedded in it as well,
  + Unknown path, never used magnetometer.
  + Magnetometer might help prevent the sensor being fooled by moving head fast but this has not been verified.

## Option 2

Use a premade solution

Pros: Bulk of the work is done, faster to implement\*  
Cons: May be harder to get to work with HAL, lack of control

<https://github.com/dlktdr/HeadTracker>