# Slouch-o-meter: A wearable device to improve your posture
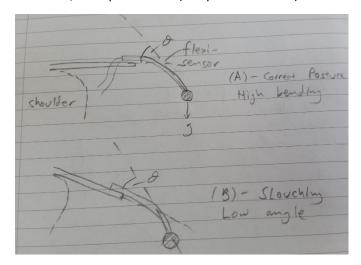
Oliver Dunkley, Siddharth Gupta, Laurence Cochrane and Bianca Bilovolschi
Pembroke College, Cambridge

This product aims to combat bad posture of the user when sitting or standing by activating a buzzer when slouching is detected. The buzzer tone reminds the user to correct their posture, and will end when they have returned to an upright position. This can be integrated via Bluetooth with a smartphone app, which displays the number of times the used has slouched since the last reset.
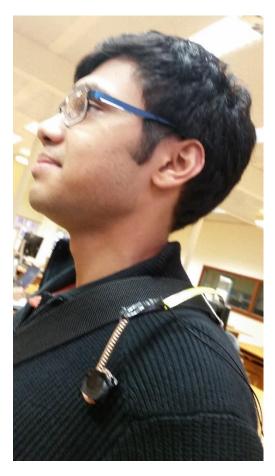
The most distinguishable feature of slouching is the change in angle of the shoulders, in the order of 5-15 degrees. Original plans for implementation involved the use of an accelerometer, from which the angle of apparent acceleration (due to gravity) will vary according to the angle of the shoulders. Due to the lack of such a component, an ad-hoc accelerometer comprised of a flexi-sensor and a weight was constructed. This is mounted on a horizontal strip attached to the shoulder of the user, and bends by varying amounts according to the angle of the shoulders (see diagram). The resistance of the flexi-sensor varies with angle, giving an indication of whether or not the user is slouching.

The threshold for slouching can be dynamically updated by the user: A button is pressed once in the upright position and once in the slouching position, and the threshold set to their mid-point.

All these features are attractively and stylishly packaged into a shoulder strap and controller/loudspeaker box (see pictures below).

## Slouch-o-meter

Pemgineers

**CONNECT**　　**RESET**

Status: Connected

### 3

Times you have slouched since last reset.
**Slouching!**