

## 2. Experiments with Two Sensors

### Description of the Experiment and Setup

After the first experiment, the team added another photosensitive light sensor to the circuit as seen in the Figure below. The team aimed at using the simultaneous readings from two sensors to detect hand motion from right to left or left to right direction.

Additionally, a box was used to enclose the setup to reduce the influence of ambient lighting on the sensors and provide structural enclosure that would minimise noise from ambient atmosphere (vibrations, wind, heat etc.).

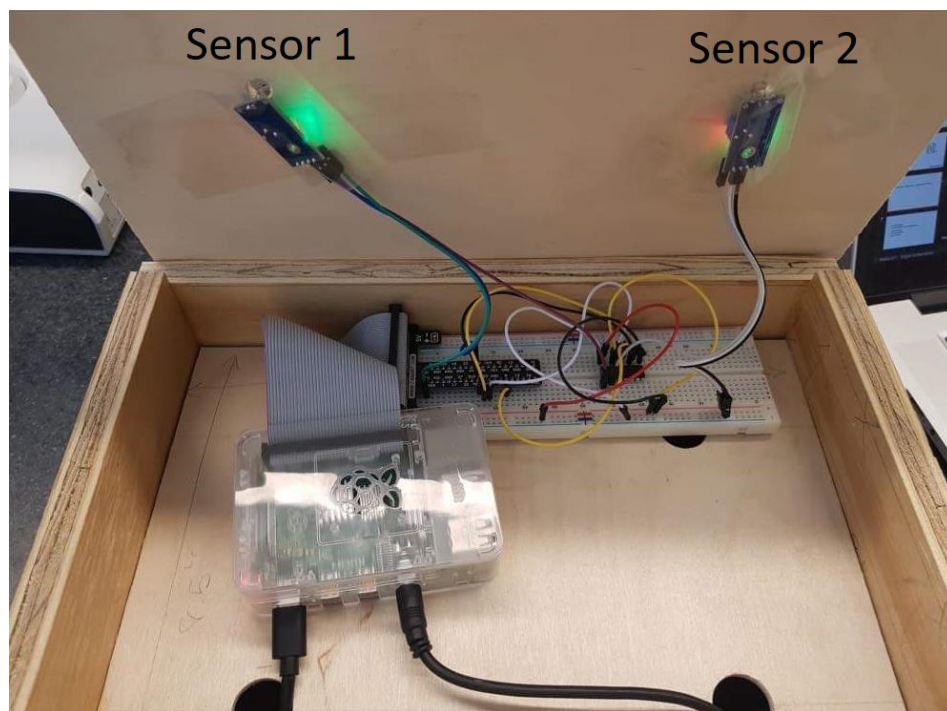


Figure 1: Electronic Compartment inside Box

### Experimental Results

On moving the hand from left to right direction. Sensor 1 detects the hand first, this corresponds to a jump in the voltage output from the Sensor 1. Next, the voltage output from Sensor 2 records a similar jump, indicating the presence of hand. Therefore, voltage jump in sensor 1 followed by a voltage jump in sensor 2 (as shown in Figure) within a specific time interval (decided the time interval during the subsequent experiments listed below) indicated hand motion from left to right direction. In a similar way, voltage jump in sensor 2 followed by a voltage jump in sensor 1 (as shown in Figure) indicated hand motion from right to left.

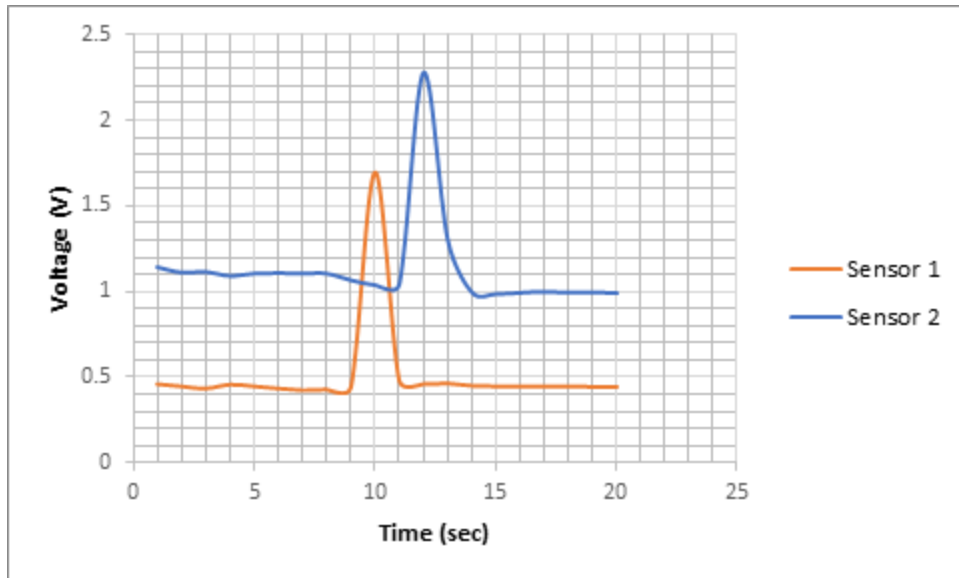


Figure 2: Voltage outputs from Sensor 1 and Sensor 2 during Left to Right Hand motion

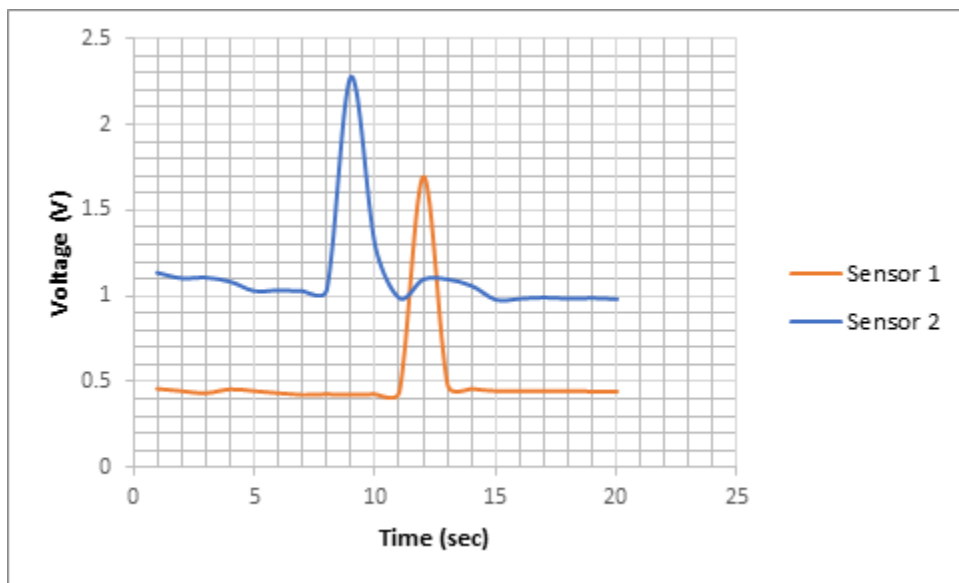


Figure 3: Voltage outputs from Sensor 1 and Sensor 2 during Right to Left Hand motion