ARDUINO UNO CODE:

```
#include <Wire.h>
#include "paj7620.h"
#define GES_REACTION_TIME  800
#define GES_QUIT_TIME      1000
void setup() {
   Serial.begin(9600);
   Serial.println("\nGesture Sensor Test");
   uint8_t error = paj7620Init();
   if (error) {
      Serial.print("INIT ERROR, CODE: ");
      Serial.println(error);
   } else {
      Serial.println("INIT OK\nStart detecting gestures...");
   }
}
void loop() {
   uint8_t gestureData = 0;
   uint8_t waveData = 0;
   if (!paj7620ReadReg(0x43, 1, &gestureData)) {
      if (gestureData) {
         printGesture(gestureData);
      }
   }
   if (!paj7620ReadReg(0x44, 1, &waveData)) {
      if (waveData == GES_WAVE_FLAG) {
         Serial.println("Gesture: Wave");
      }
}
void printGesture(uint8_t data) {
   if (data == GES_RIGHT_FLAG) {
      Serial.println("Gesture: Right");
   } else if (data == GES_LEFT_FLAG) {
      Serial.println("Gesture: Left");
   } else if (data == GES_UP_FLAG) {
      Serial.println("Gesture: Up");
   } else if (data == GES_DOWN_FLAG) {
      Serial.println("Gesture: Down");
   } else if (data == GES_FORWARD_FLAG) {
```

```
        Serial.println("Gesture: Forward");
        delay(GES_QUIT_TIME);
    } else if (data == GES_BACKWARD_FLAG) {
        Serial.println("Gesture: Backward");
        delay(GES_QUIT_TIME);
    } else if (data == GES_CLOCKWISE_FLAG) {
        Serial.println("Gesture: Clockwise Rotation");
    } else if (data == GES_COUNT_CLOCKWISE_FLAG) {
        Serial.println("Gesture: Counter-Clockwise Rotation");
    } else {
        Serial.println("Unknown Gesture");
    }
}
```

PYTHON CODE:

```
import serial
import pyautogui
import time
arduino_port = "COM3"
baud_rate = 9600
try:
    ser = serial.Serial(arduino_port, baud_rate, timeout=1)
    print("Connected to Arduino on", arduino_port)
except:
    print("Failed to connect to Arduino.")
time.sleep(2)
gesture_action_map = {
    "Gesture: Right": lambda: pyautogui.press("nexttrack"),
    "Gesture: Left": lambda: pyautogui.press("prevtrack"),
    "Gesture: Up": lambda: pyautogui.press("volumeup"),
    "Gesture: Down": lambda: pyautogui.press("volumedown"),
    "Gesture: Forward": lambda: pyautogui.press("playpause"),
    "Gesture: Backward": lambda: pyautogui.press("playpause"),
    "Gesture: Wave": lambda: pyautogui.press("playpause"),
}
print("Listening for gestures...")
while True:
    if ser.in_waiting:
        line = ser.readline().decode('utf-8').strip()
        print("Received:", line)
        action = gesture_action_map.get(line)
```

```
if action:
    action()
```