GloveMouse

Is it a glove? Is it a mouse?

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2012 NCIT Summer School

Embedded Systems

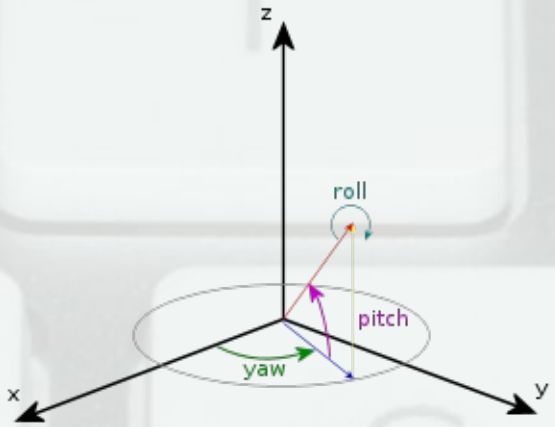
Cuprins

- Ce?
- De ce?
- Cum?
- Probleme
- Dezvoltare ulterioara

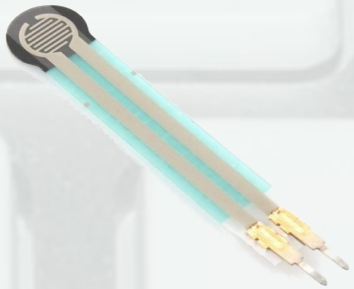
Ce este?

Dispozitiv de control al mouse-ului prin intermediul gesturilor.

Miscarea mouse-ului este miscarea de roatie a mainii, iar cele doua butoane se afla la varfurile degetelor.



$\rightarrow [-127, 127] \rightarrow$



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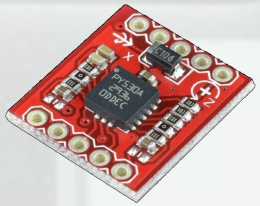
De ce?

- Pemite un control mai “natural” decat un mouse clasic
- Functioneaza in 3 dimensiuni
- Nu are nevoie de o suprafata pe care sa ruleze
- Posibilitatea realizarii simple a unor functii mai complicate
- Poti simtii Forta

Cum? (1)

1. Hardware

Arduino + giroscop + senzor de presiune + manusa =
GloveMouse



Cum? (2)

2. Software

- UART
- ADC si input digital
- Stabilizare
- Accelerare
- Driver (Darran Hunt: http://hunt.net.nz/users/darran/)

```
void test() {
        int ind;
        mouseReport nullReport = { 0, 0, 0, 0 };
        mouseReport report;
        _delay_ms(1000);

        report.buttons = 0;
        report.x = 0;
        report.y = 0;
        report.wheel = 0;

        report.x = -2;
        for (ind=0; ind<20; ind++) {
                write(report);
                write(nullReport);
        }

        report.x = 0;
        report.y = -2;
        for (ind=0; ind<20; ind++) {
                write(report);
                write(nullReport);
        }

        report.x = 2;
        report.y = 0;
        for (ind=0; ind<20; ind++) {
                write(report);
                write(nullReport);
        }

        report.x = 0;
        report.y = 2;
        for (ind=0; ind<20; ind++) {
                write(report);
                write(nullReport);
```

Probleme

- Interfatarea cu calculatorul
- Interfatarea cu giroscopul
- Stabilizarea
- Interfatarea cu accelerometrul
- Testarea

1,242,150
39.21%
9
7
12
18

Dezvoltare ulterioara

- Accelerometru
- Miniaturizare
- Modul bluetooth
- Buton de pauza
- Scroll si zoom
- Recunoastere de gesturi

All hail Dan Tudose!

Va multumesc!

Intrebari?