

° SEN SAR

Project Mobile and Pervasive Computing



Nick Michiels (0623764)
Wouter Nivelte (0624019)

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Advertising



Demo

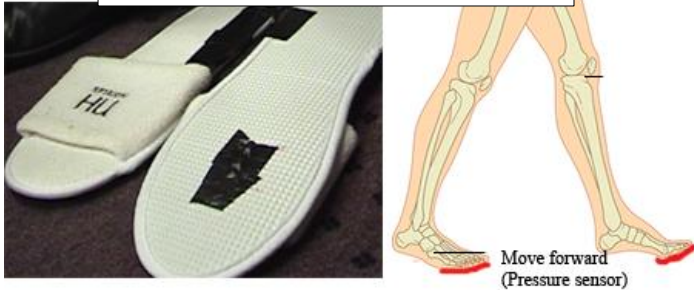


What is SENSAR?

- Intuitive / Realistic
- Sensor based
- Mobile
- Virtual world
 - Walking
 - Look Left/Right
 - Look Up/Down
 - Turn around
 - Crouching
 - Shooting/Pointing

The Sensors

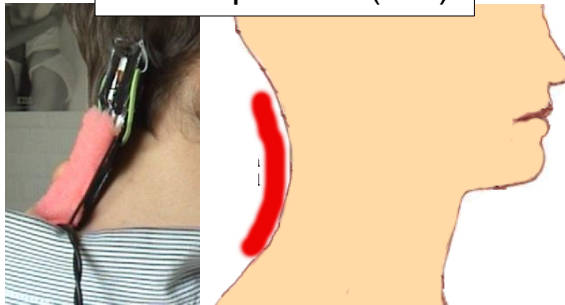
Walking (pressure sensor)



Look Left/Right (compass)



Look Up/Down (flex)



Turn around (flex)



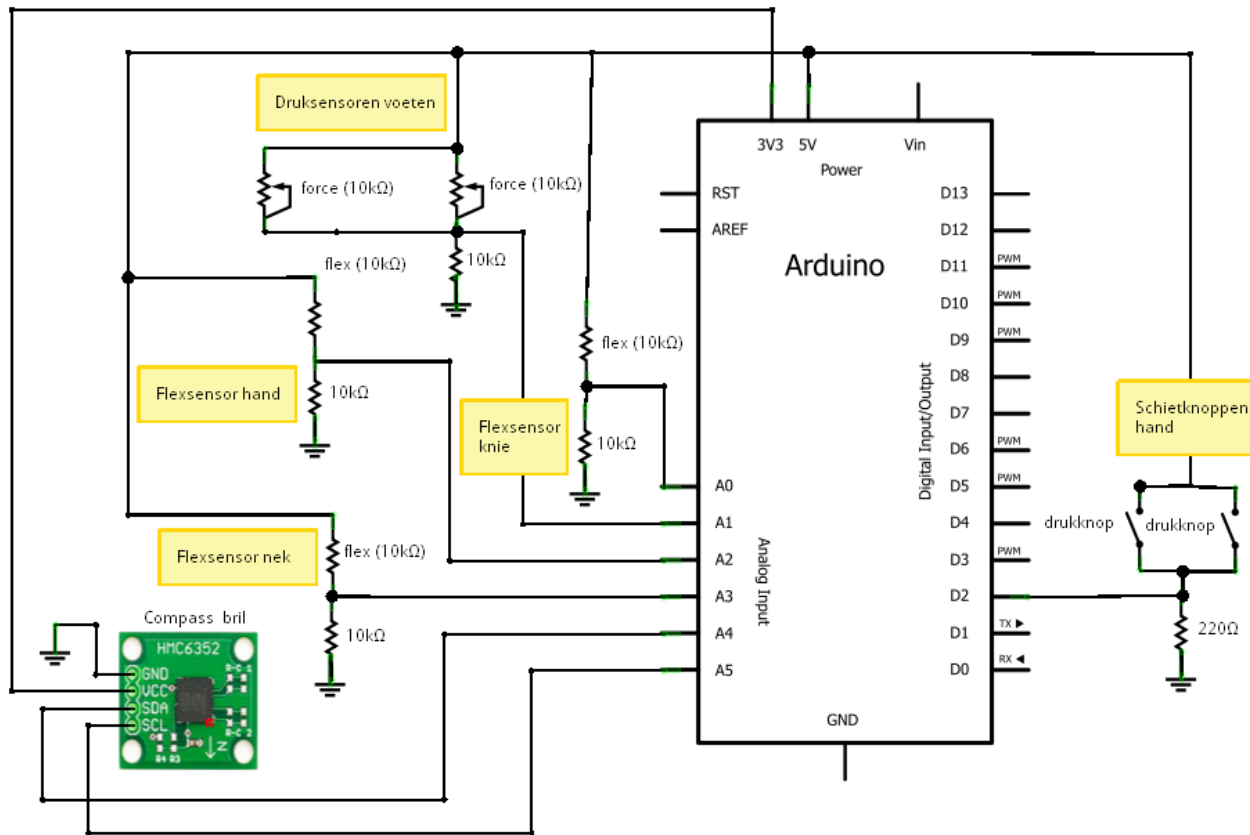
Shooting (push-buttons)



Crouching (flex)



The circuit



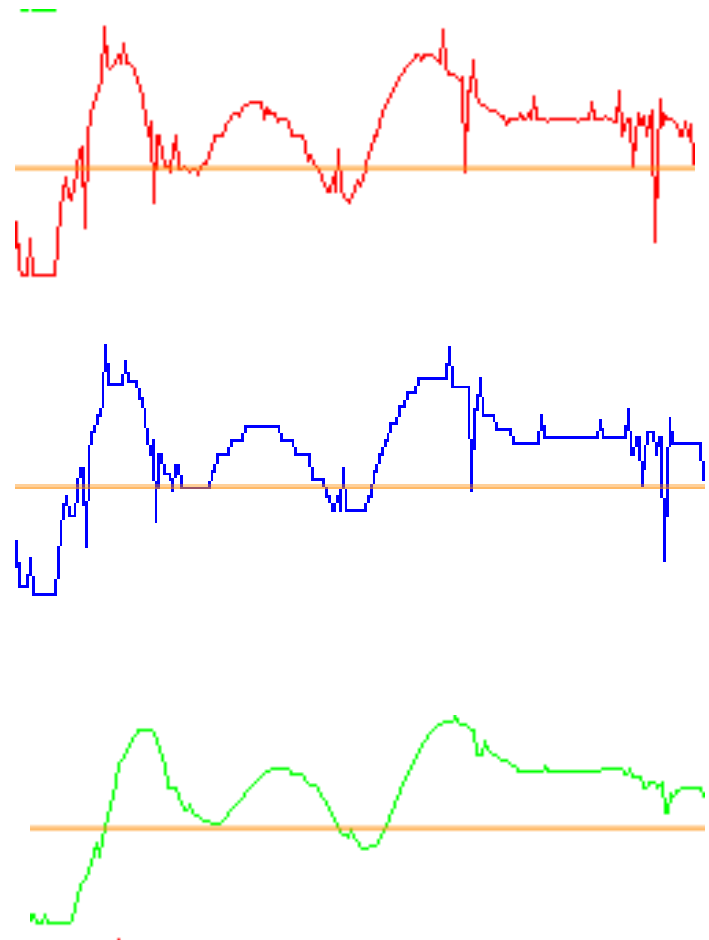
Wireless communication via Xbee version 2

Calibration

- Map sensor scope on application scope
- Preprocessing
- Maximum sensor value
- Minimum sensor value
- Possibly medium sensor value
 - Flex values non linear

Sensor value interpretation

- Input sensor values?
 - Noise
 - Visual artifacts
- Thresholding?
 - Less noise
 - Discrete values
 - Visual artifacts
- Averaging?
 - Previous 4 samples
 - Less noise
 - No discrete values
 - Minimum thresholding



Conclusion

- Strengths
 - Fun, intuitive and realistic playable virtual world
 - Good results (averaging, thresholding)
- Weaknesses
 - Too much wired sensors
 - Not compact enough
- In the future:
 - All sensors wireless (use of sensor node which interact by themselves)
 - Compact finalization



QUESTIONS?