

The background features a dark blue gradient with a starry texture. Overlaid on this are several semi-transparent white circular gauges and arrows. One large gauge on the left has a scale from 140 to 260. Other smaller gauges and arrows are scattered across the scene, some with dashed outlines, suggesting motion or control elements.

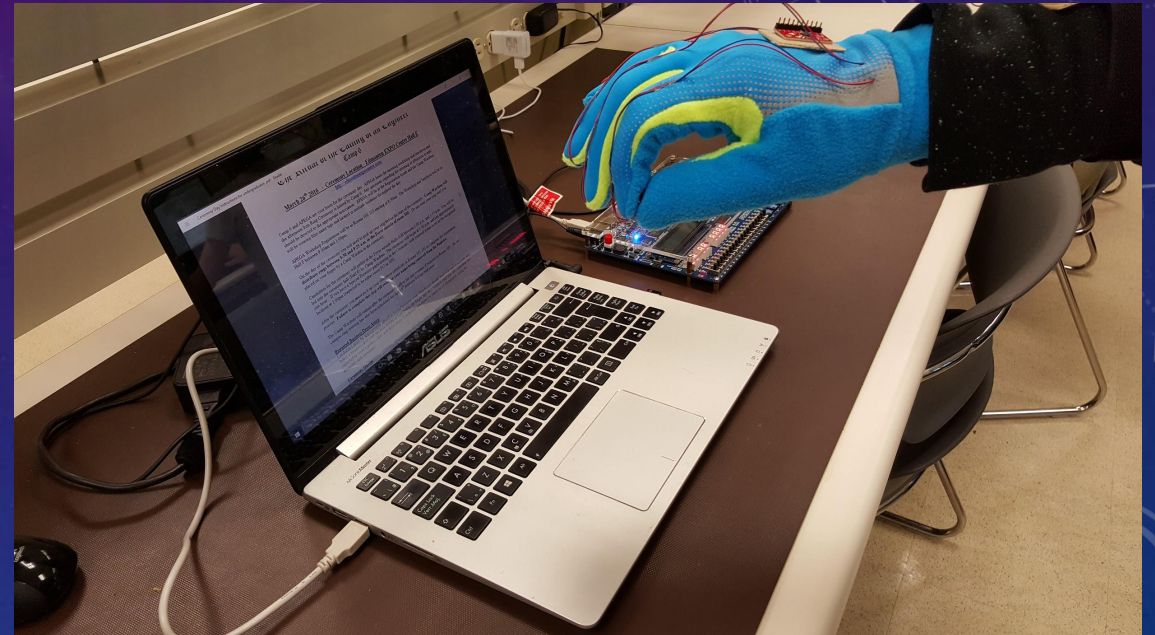
GESTURE CONTROL INTERFACE

GROUP 2

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OVERVIEW

- Motion sensing glove
- Data wirelessly sent from glove to Altera DE2
- DE2 is recognized as an HID keyboard by a host computer
- Gesture recognition algorithm translates gesture information into a sequence of key presses



MOTIVATION

Innovation

To explore different ways to wirelessly interact with a computer. Gesture control has been in the mind of innovators for some time, however a useful product has yet to be realized.

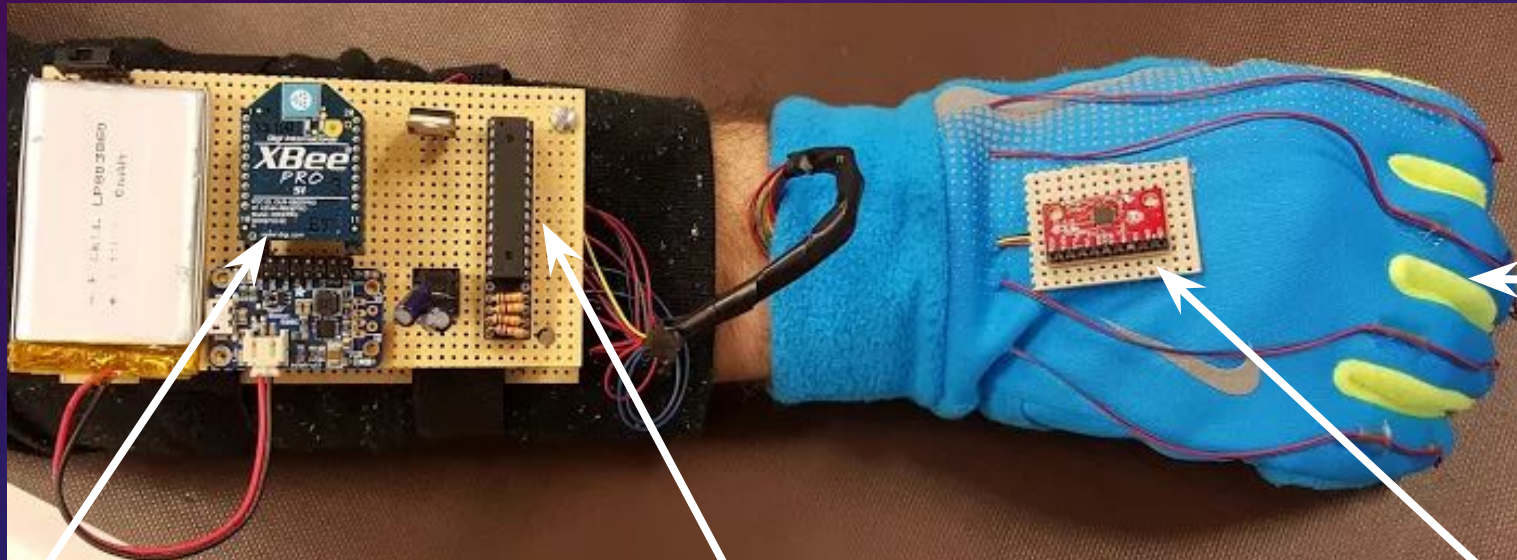
Convenience

A easy way to lean back a scroll through a PDF or document that is on your computer

DESIGN

- Project divided into 2 major parts
- Glove component: battery operated, wireless, wearable
- Board Component: receive information wirelessly, process data using a gesture recognition, have a USB connection

GLOVE COMPONENT



- Xbee wireless transmitter for sending data to FPGA board

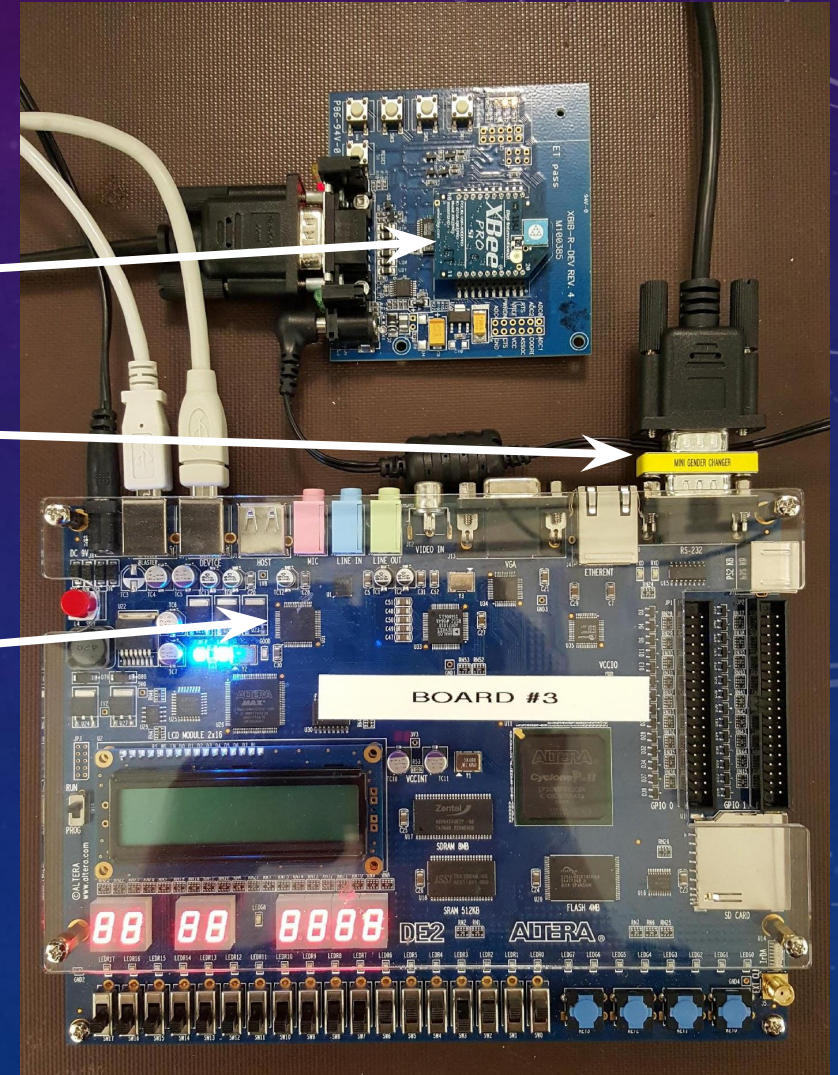
- Microprocessor for collecting acceleration data and sending it to Xbee component for wireless transmission

- 6-degree of freedom inertial measurement unit (IMU) for tracking motions

- Buttons for detecting interaction

DE2 AND FPGA COMPONENTS

- XBee wireless receiver for receiving data from glove
- XBee development board connected to the DE2 through a serial interface
- USB controller (ISP1362) for communication between board and computer



The background is a dark blue gradient with a field of small white stars. Overlaid on this are several technical diagrams in a lighter blue color. In the top right, there is a large circular gauge with a scale from 0 to 210 and a needle pointing to approximately 180. Below it is a smaller circular diagram with concentric rings and arrows. In the bottom left, there is another circular diagram with a dashed arrow pointing counter-clockwise. The text "Let's see how it works!" is centered in the middle of the image in a white, sans-serif font.

Let's see how it works!

WHAT'S NEXT?

- Using HID drivers
- Leveraging unused data available from the IMU
- Additional buttons on the glove, other modes of operation

The background is a dark blue gradient with a subtle pattern of white stars and technical diagrams. On the right side, there are several circular diagrams resembling gauges or dials. One large gauge has a scale from 0 to 210 with tick marks every 10 units. Inside this gauge are smaller concentric circles and arrows. Another gauge below it has a scale from 0 to 140. In the bottom left corner, there are dashed circular lines with arrows indicating a clockwise direction. The overall aesthetic is clean, modern, and technical.

QUESTIONS?