

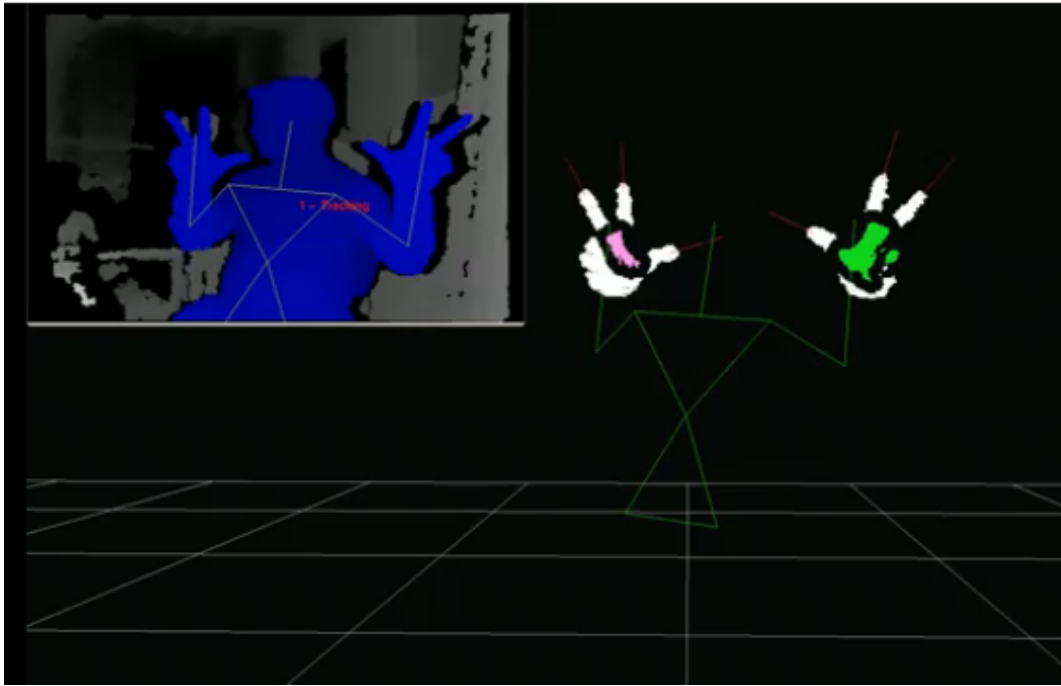
ESE 350 Final Project Proposal

KINECT IT UP!

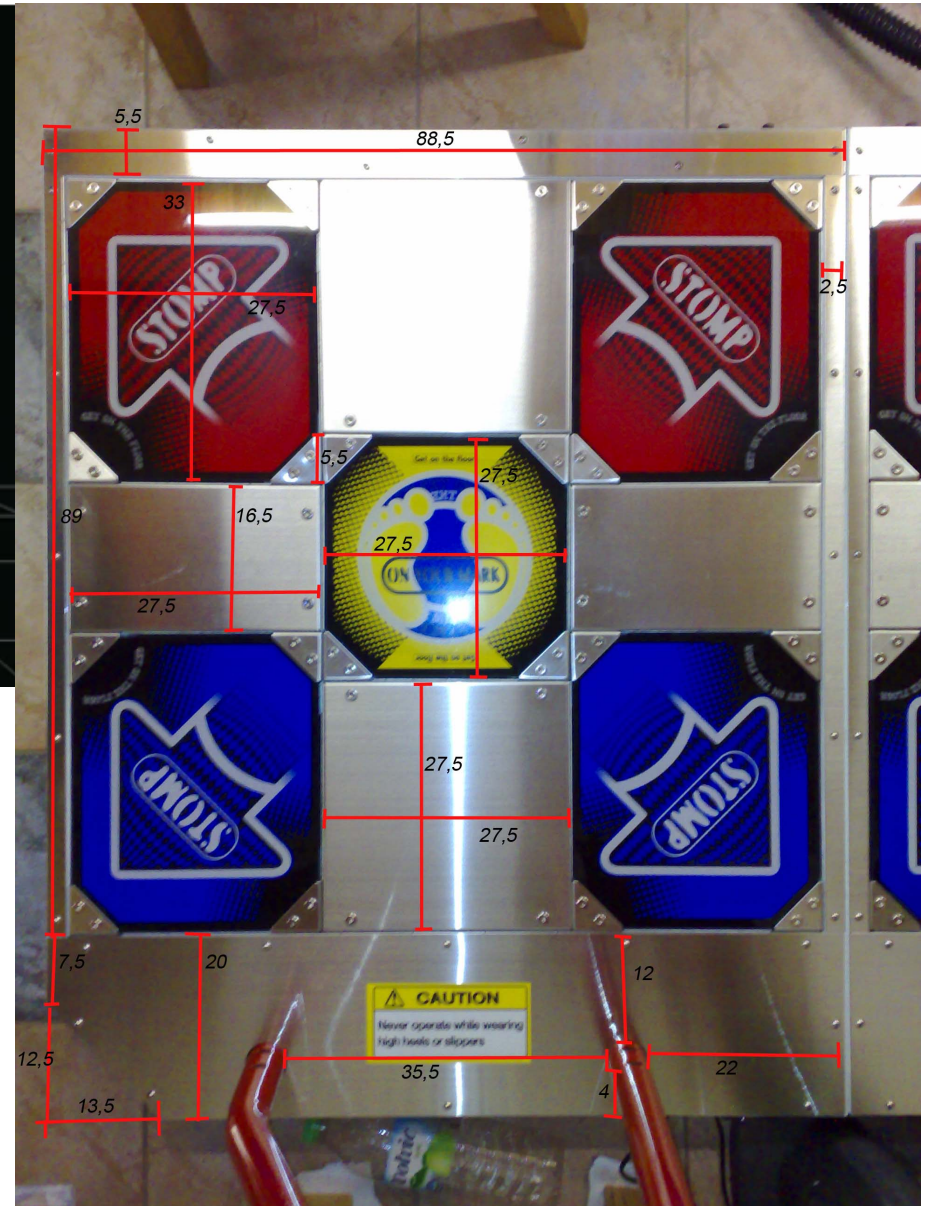


By Philip Peng and Eric Chen, 2011-04-08

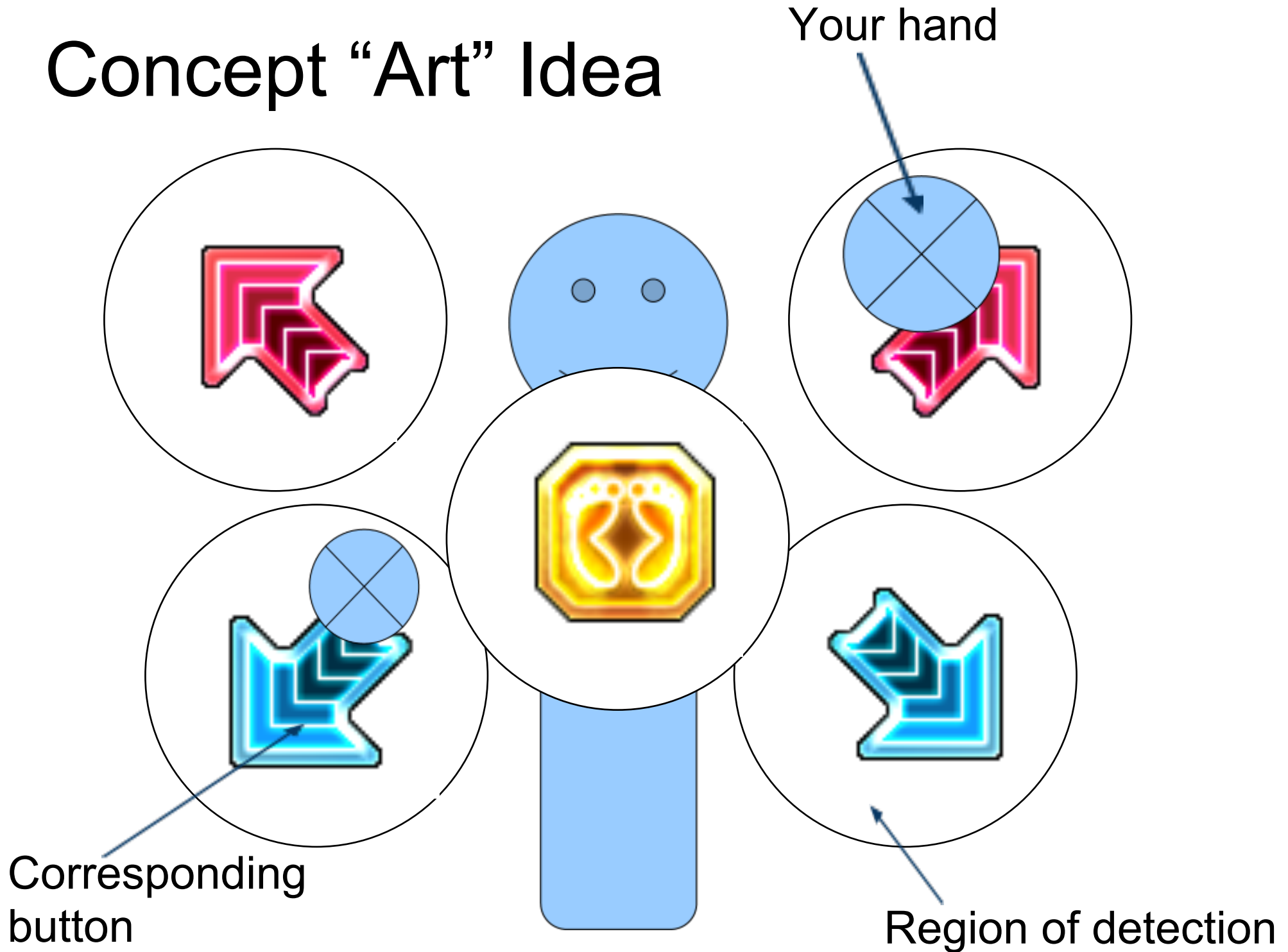
Kinect + Wild Hand Moving = Music Game



**Use Kinect as a controller
to play Pump It Up!
(simulated by StepMania)
Your hands become your
stomping feet!**



Concept "Art" Idea

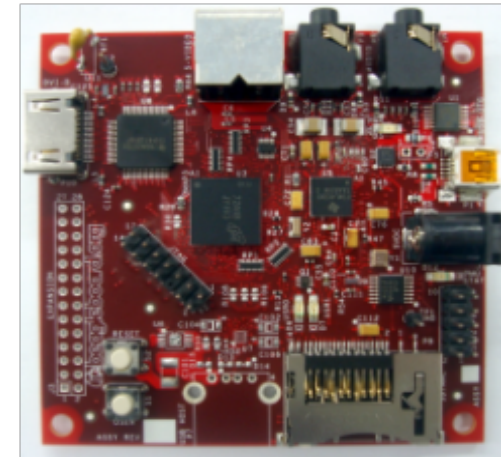


Components

Kinect: detect hand dX, dY, dZ from body

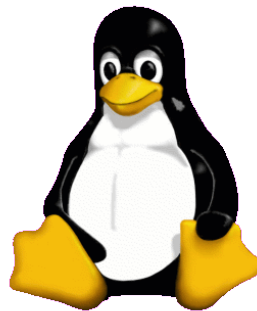
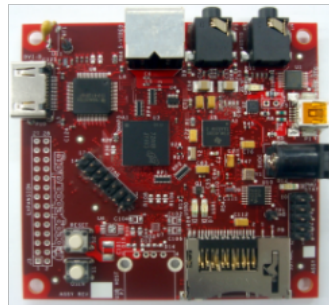
Beagleboard: process which “boxes” hands are in and to communicate with computer

Computer: Reads input from Beagleboard as keystrokes



Plan of Action

- 1) Obtain Kinect, Beagleboard and TA
- 2) Setup Angstrom with Kinect drivers on Beagleboard (install libfreenect)
- 3) Experiment with libfreenect demos to learn about Kinect data
- 4) Central body detection and hand detection
- 5) Depth perception
- 6) Experimentally determine hit circles
- 7) Output keystrokes from Beagleboard to computer as a standard USB keyboard



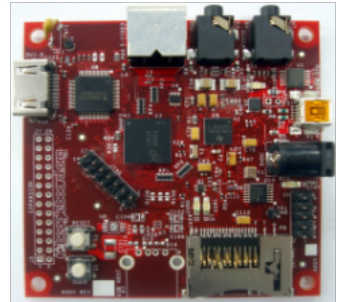
Backup Plans?

A) Directly connect Kinect to computer and write computer software.

- Much easier (and thus boring)
- Less flexible (user has to install special driver/software)

B) Run the entire program on the Beagleboard (which can run Ubuntu and have StepMania installed on it)

- Beagleboard not strong enough?
- Not usable with personal computers



Implementation Strategies

Kinect

- 1) Obtain Kinect, Beagleboard, and TA
- 2) Setup Angstrom with Kinect drivers on Beagleboard (install libfreenect)

April 18

- 3) Experiment with libfreenect demos to learn about Kinect data
- 4) Central body detection and hand detection

April 25

- 5) Depth perception
- 6) Experimentally determine hit circles

April 28

- 7) Output keystrokes from Beagleboard to computer as a standard USB keyboard

Timeline

April 11

- 1) Obtain Kinect, Beagleboard, and TA
- 2) Setup Angstrom with Kinect drivers on Beagleboard (install libfreenect)

April 18

- 3) Experiment with libfreenect demos to learn about Kinect data
- 4) Central body detection and hand detection

April 25

- 5) Depth perception
- 6) Experimentally determine hit circles

April 28

- 7) Output keystrokes from Beagleboard to computer as a standard USB keyboard