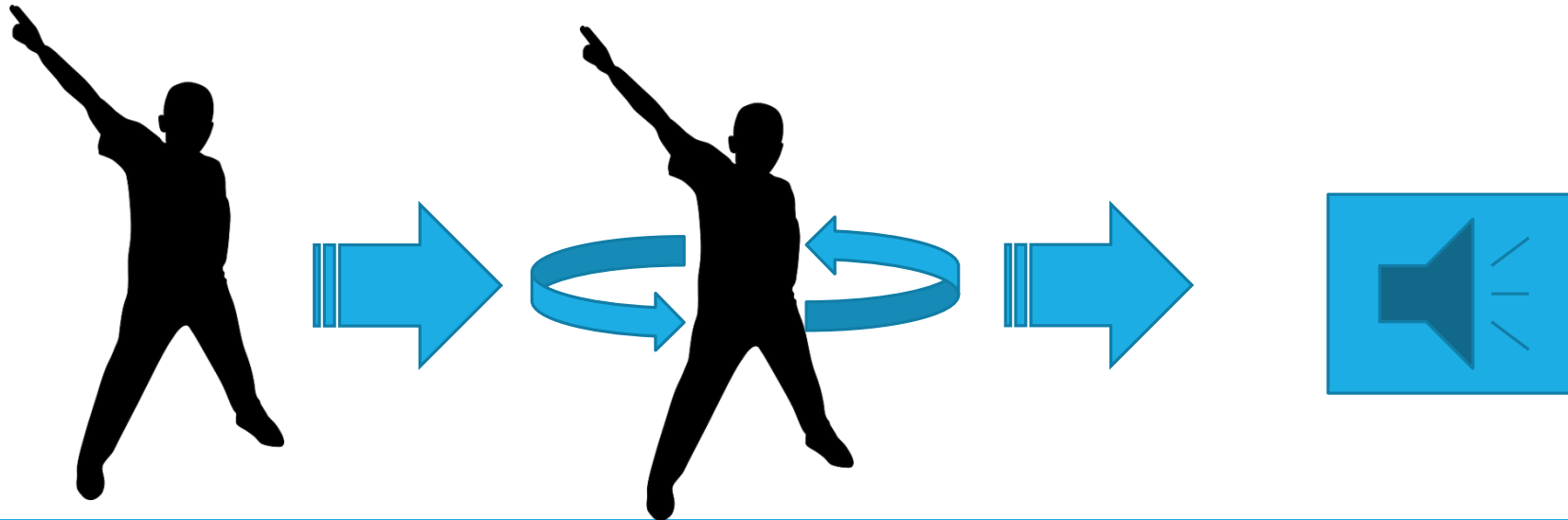


Audio Manipulation with Kinect v2

PETER CHEN

Motivation and Goal

- Movement, sound, and dance have potential to be linked together with sensors.
- Use Kinect joint tracking and manipulate an audio stream.



Related Work

- Beat Farm
 - Add effects to music with phone accelerometer.
- DimSong
 - Change intensity of music based on motion.
- Synapse Kinect
 - Virtual Instrument Player



Approach

- Augment dancer movements with sound.
- Different from using user movement to play instruments.

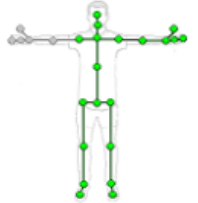
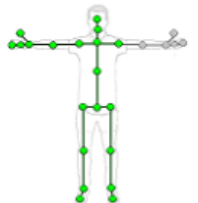


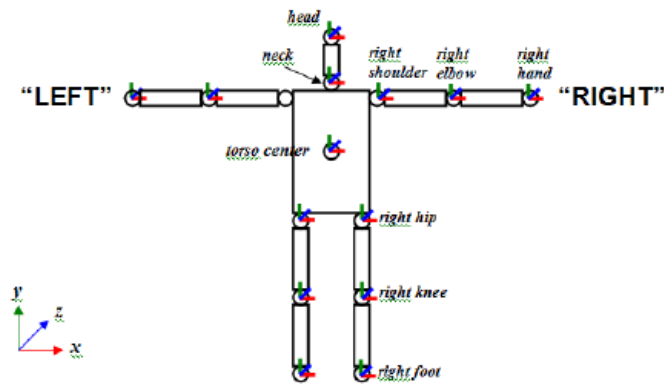
Instrument

Plan

- Max MSP 7
- DP Kinect
- MXJ Java External

Best represents your gesture:

body: False : False m: False e		Ignore Lower Body: False Ignore Left Arm: True Ignore Right Arm: False Use Hands: False
body: False : True m: True e		Ignore Lower Body: False Ignore Left Arm: False Ignore Right Arm: True Use Hands: False



NOTE 1: Skeleton's front side is seen in this figure
NOTE 2: Upper arm is twisted such that if elbow is flexed the lower arm will bend forwards towards sensor.

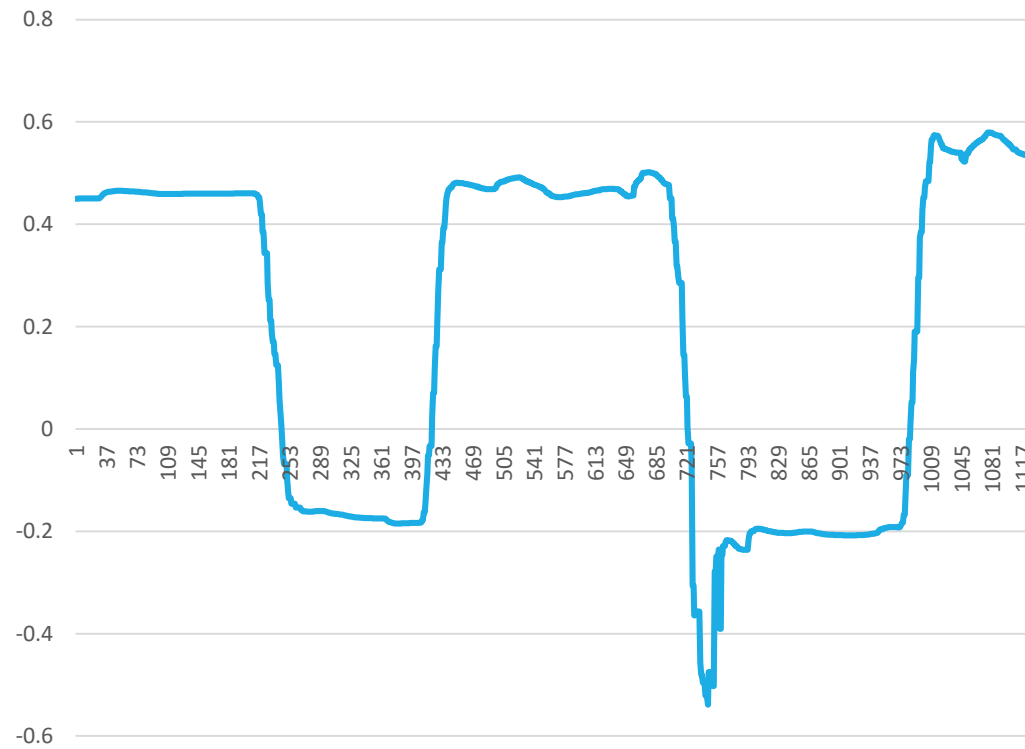


MAX 6

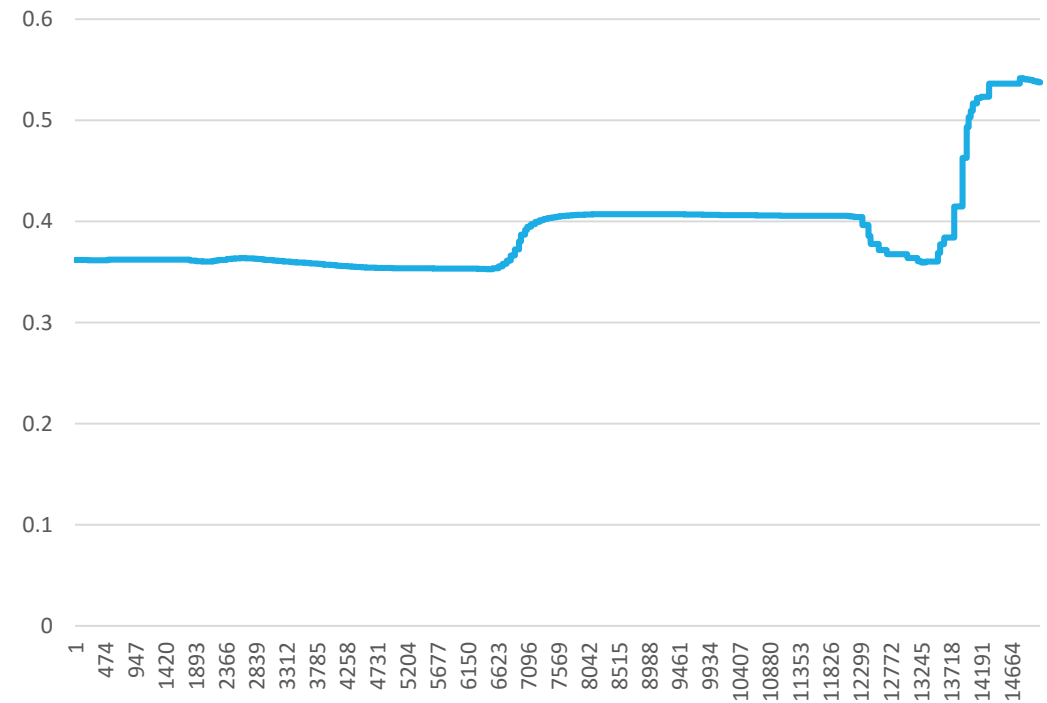
API Documentation

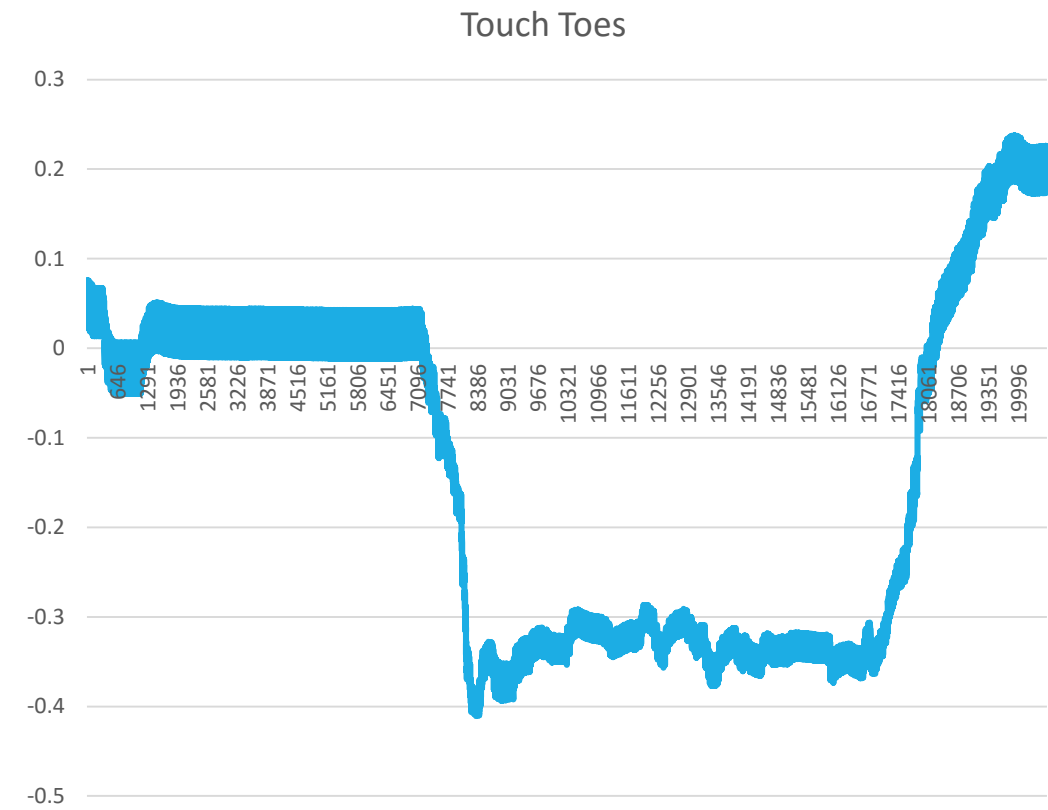
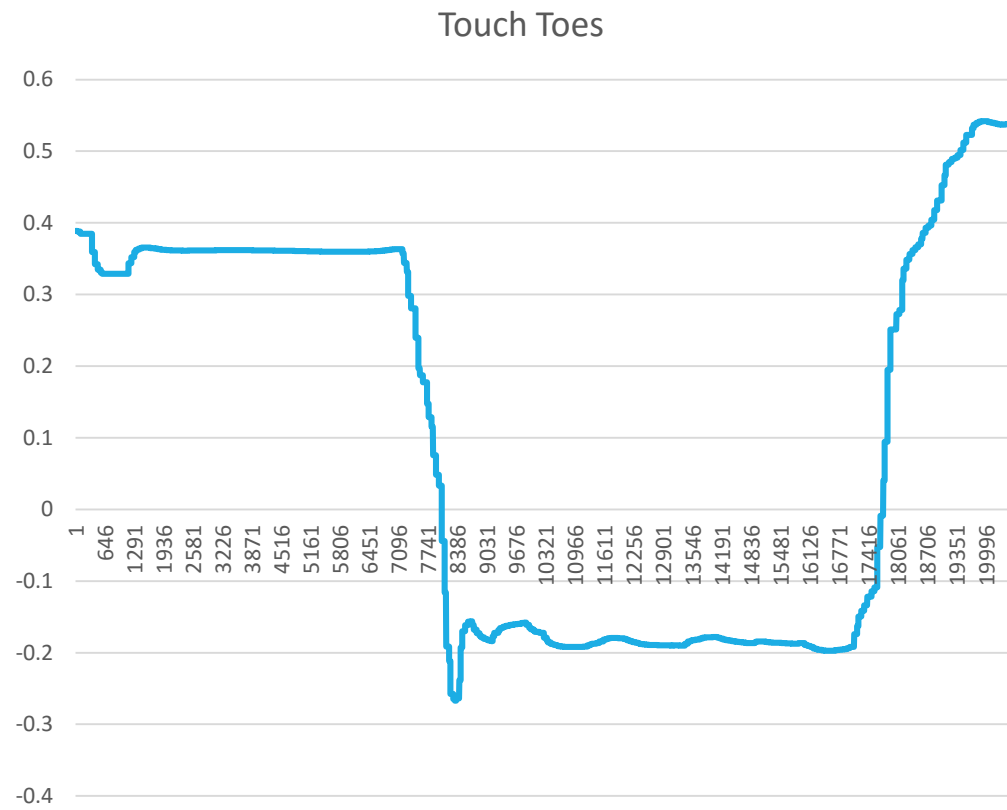
Results

Stand, Sit, Stand/Turn Around, Sit

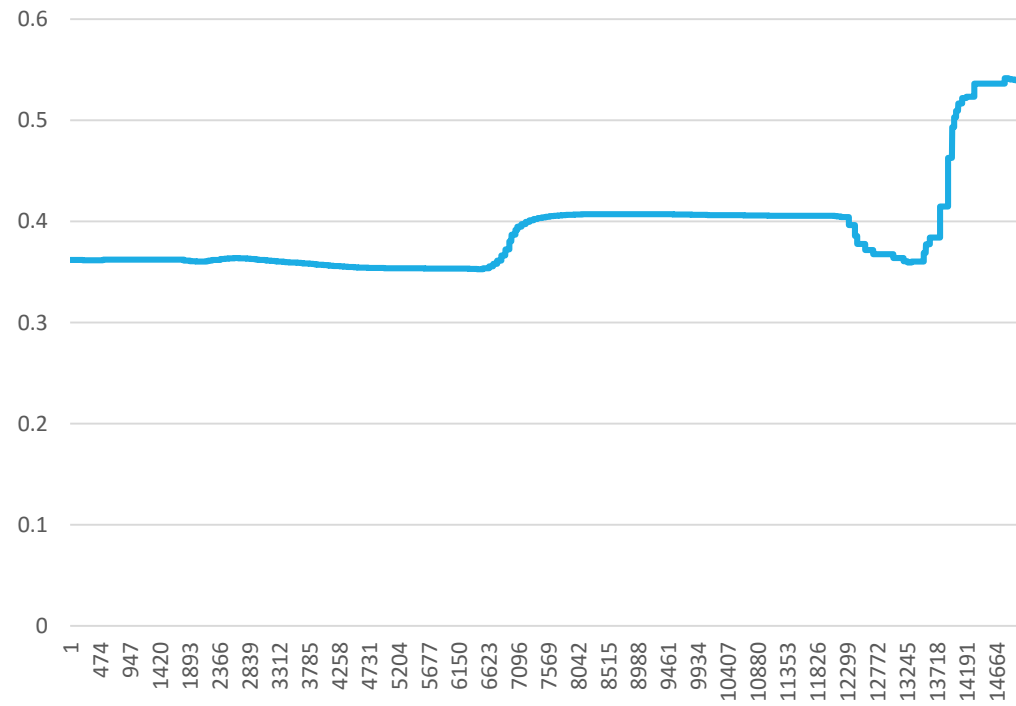


Original Center of Mass (Stand, Raise Arms, Stand)

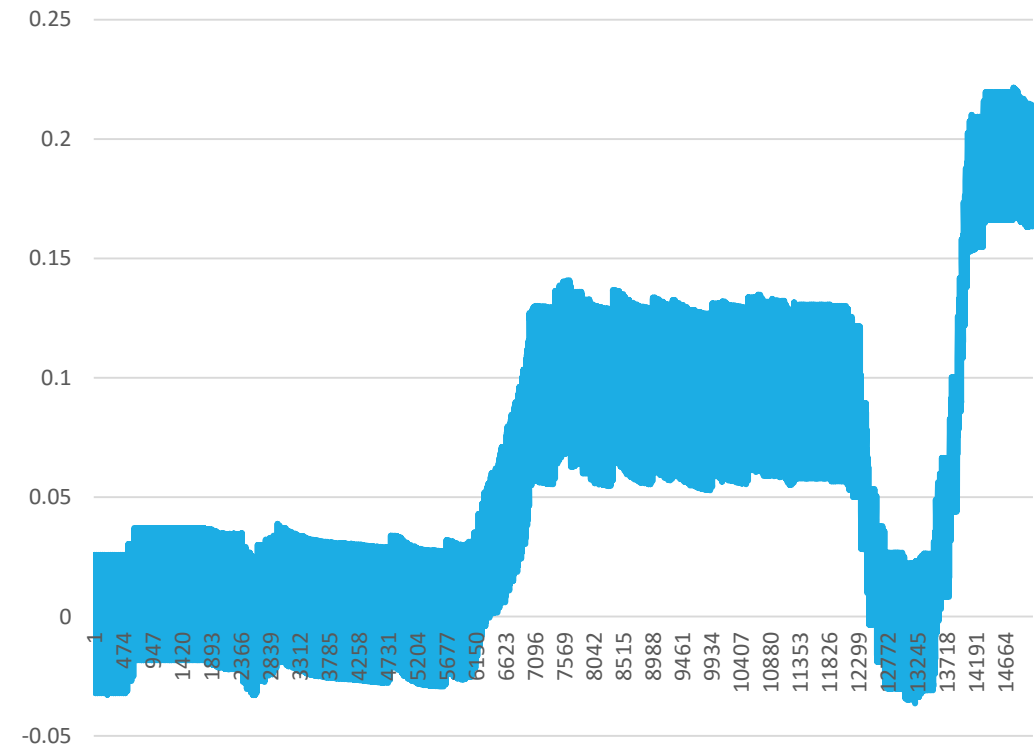




Original Center of Mass (Stand, Raise Arms, Stand)



My Center of Mass (Stand, Raise Arms, Stand)



Evaluation

- Compare center of mass
- Filter data and compare performance
- Survey user experience.
- Ask users to imitate sample tracks.
- Give participants high-level goals, and ask others to rate participants.

