

Express Yourself: **Biomechanics of Expressivity**

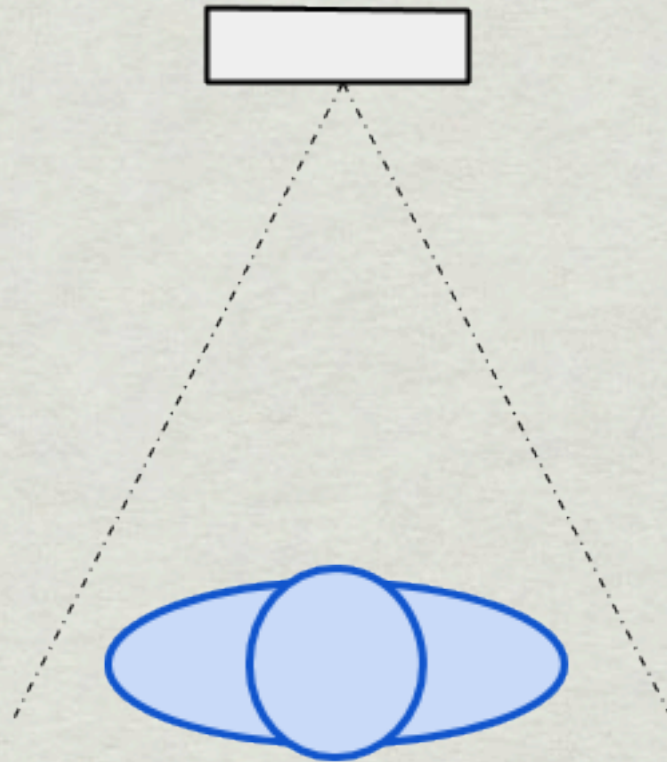
Mike Karlesky

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- * Computer Science Ph.D. student at NYU•Poly
- * My Area: Human Computer Interaction
 - * Embodied Interaction
 - * Social Effects of Computing

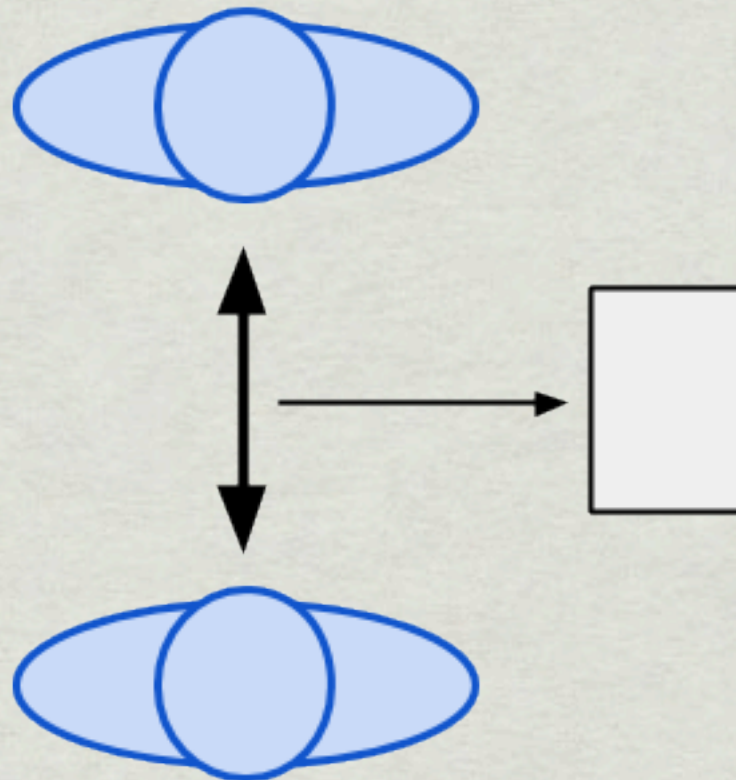
Project Motivation

- * Existing gesture-sensing systems



Project Motivation

- * Interaction between two people as system input



Expressivity Background

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graph TD; A((MOTION ANALYSIS)) --- B((GESTURE SENSING)); A --- C((GESTURE STUDIES)); B --- C;
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**MOTION
ANALYSIS**

**GESTURE
SENSING**

**GESTURE
STUDIES**

Expressivity: Working Definition

- * Observation: More “Expressive” movements cost more in the forces applied to move the body
- * Definition: Expressivity is the summation of the body’s directional actions and the summation of the forces to drive these motions



Project Motivation

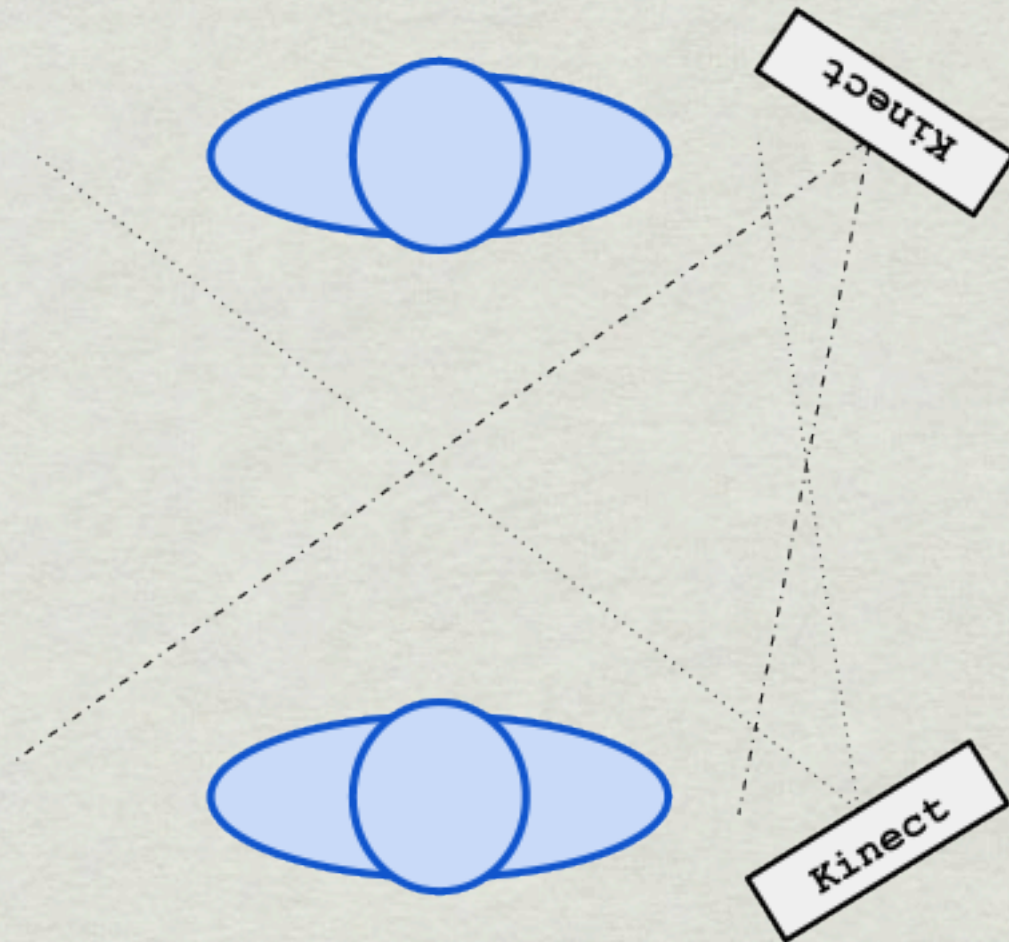


GESTURE BETWEEN PEOPLE

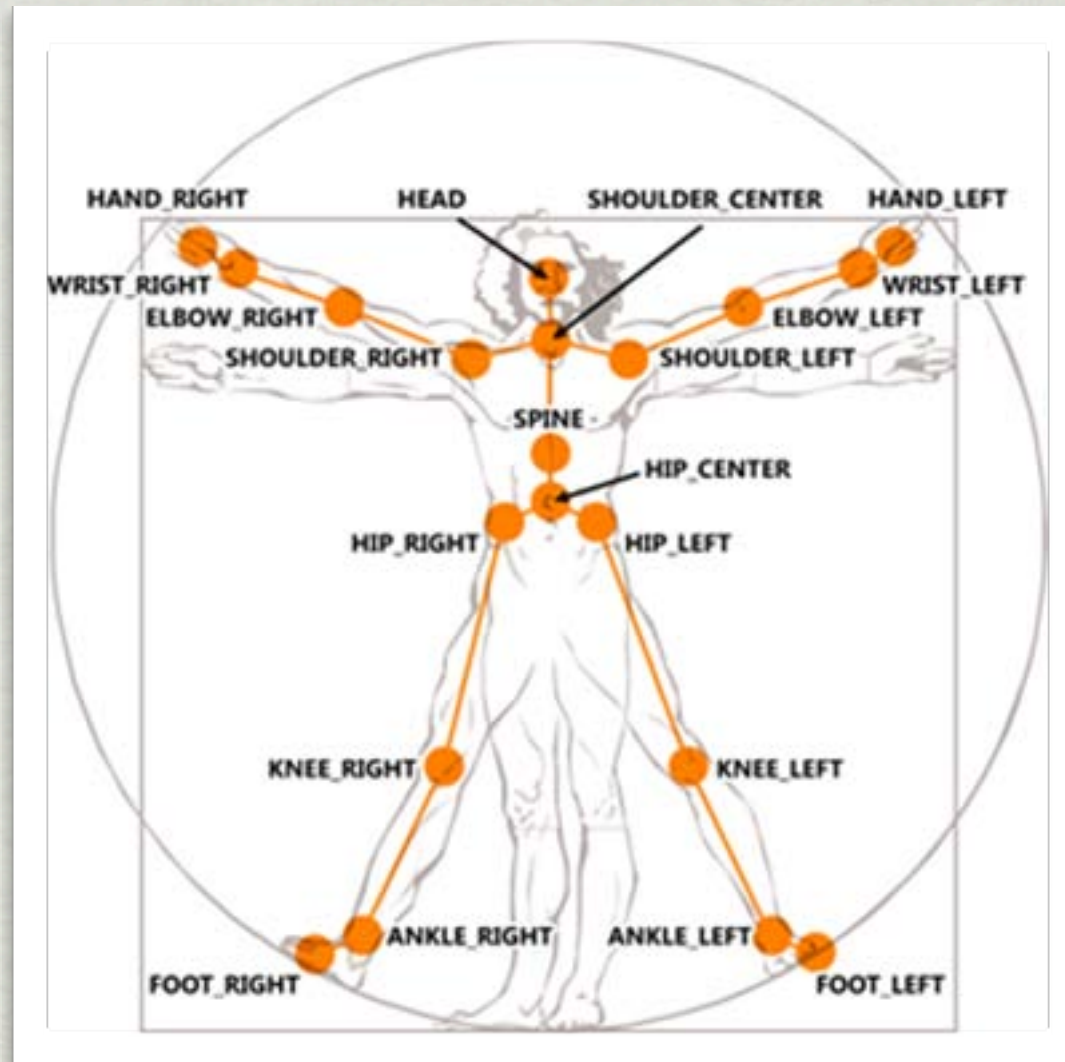
KINEMATICS + KINETICS

INEXPENSIVE HARDWARE

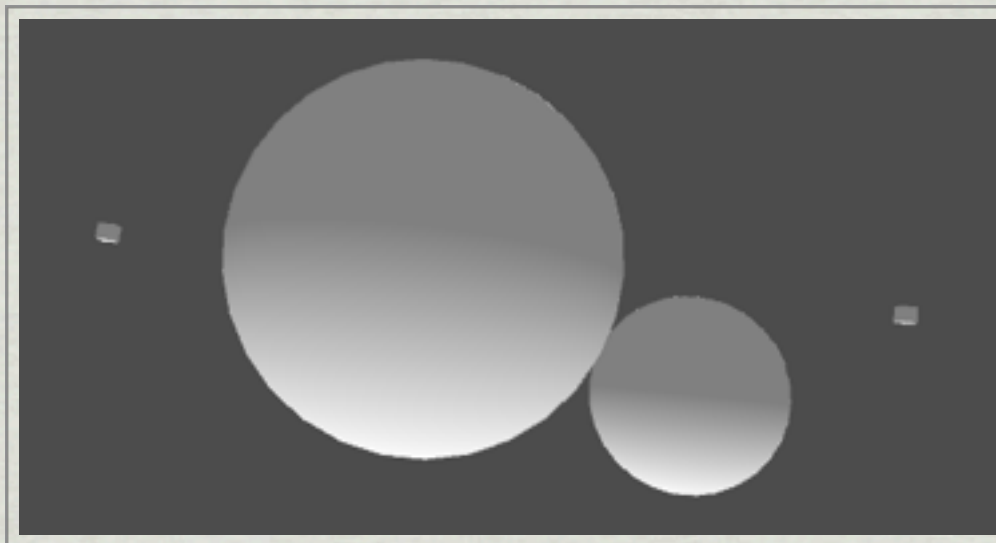
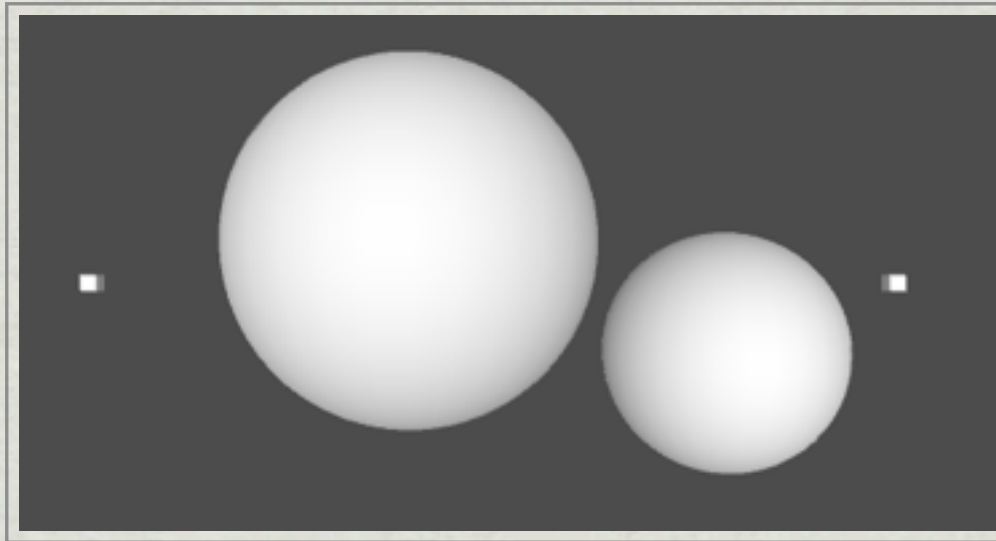
System Design



System Design



System Design



Work to date

- * Working vector model of upper body gesturing
- * Basic torque model of upper body
- * Data visualization
- * Testing interference of two Kinect setup
- * Networking for two Kinect setup