File Directory (only relevant files)

* ICRA2015Submission – paper submission to ICRA, details methods for determination of mass and center of mass parameters using markov chain monte carlo and particle filter methods. Also discusses motivation and problem statement for all of the algorithms in this project
* Kinect Wii Data Collection – contains code for collecting data from wii and kinect sensors
  + OpenNI-Bin-Dev-MacOSX-v1.5.7.10 – contains the files for getting Kinect data and recording both Kinect and Wii data to files.
    - Samples/Bin/x64-Release
      * Executable files for code
      * MySampleTrack - for getting joint positions and printing them to text files
      * MySampleTrack\_Picture –saves pixels which contain the user. Used for volume estimation
    - Samples/MySampleTrack – c++ code
      * Main.cpp – this is the main script that calls GL and initializes files to write to
      * Scenedrawer.cpp – this file is called by GL and actually records the data to files as well as displays the depth, position, player information, etc.
    - Samples/MySampleTrack\_Picture – c++ code
      * Main.cpp – this is the main script that calls GL and initializes files to write to
      * Scenedrawer.cpp – this file is called by GL and actually records the data to files as well as displays the depth, position, player information, etc.
  + SensorKinect-unstable – SDK files
  + Wiiuse2 – files for recording Wii data from sensor
* MATLAB Analysis – after raw data was collected, it was analyzed in MATLAB here. Additional README file in this folder

Data collection process – ICRA paper methods

* Open two terminal windows
* In first window cd to Wii Data Collection/wiiuse2/build/example
* In second window cd to OpenNI-Bin-Dev-MacOSX-v1.5.7.10/Samples/Bin/x64-Release
* Turn on Wii and press button in front so that button is blinking blue
* In first window, enter ./wiiuseexample
  + Wait to confirm that the wii is connected and that data is printing.
* In second window, enter ./MySampleTrack
  + Kinect window will pop up
* At this point, the user should step on the Wii, facing the Kinect and wait a few seconds for the scale and Kinect sensor to come to rest.
* Then, the user may move in various positions as described in the paper.
* For analysis, see the MATLAB README file.

Data collection process – Volume estimation

* Open one terminal window
* cd to OpenNI-Bin-Dev-MacOSX-v1.5.7.10/Samples/Bin/x64-Release
* enter ./MySampleTrack\_picture
  + This script takes a picture every 2 seconds since pictures are extremely memory intensive. Therefore, the user should stand still for a few seconds at least.
* For Analysis see the MATLAB README File

Compiling process

* Open terminal
* Cd OpenNI-Bin-Dev-MacOSX-v1.5.7.10/Samples/MySampleTrack
* Or Cd OpenNI-Bin-Dev-MacOSX-v1.5.7.10/Samples/MySampleTrack\_Picture
* cd Wii Data Collection/wiiuse2/build/
* Type ‘make’ in terminal