# Zip File contents

The problem set zip file should contain the following:

* This README.docx file
* Kinematics.mat - the MATLAB file containing the kinematic data
* motWrite.m - A MATLAB file which writes .mot motion files for the OpenSim model
* AR\_forearm\_30.osim - the OpenSim model of the hand
* Geometry folder - This folder is necessary for the OpenSim model and must be in the same directory as the .osim file

# Kinematics.MAT

The Kinematics.mat file contains 337 trials of Rhesus macaque hand kinematics. Each trial is a matrix of joint angular positions. The columns of the matrices represent joint motions and the rows represent 4 ms time bins.

# motWrite.M

motWrite.m will create a .mot motion file to be read in OpenSim. The following code is used to create the motion file 'Trial1.mot' for the first trial:

motWrite('Trial1.mot', Kinematics.ColumnNames, Kinematics.Trials{1});

# OpenSim

OpenSim (<https://simtk.org/home/opensim>) is a freely available user extensible software system that lets users develop models of musculoskelatal structures and create dynamic simulations of movement.

After downloading OpenSim, select the AR\_forearm\_30.osim model using File → Open Model...

You can play a motion file by selecting it using File → Load Motion...