

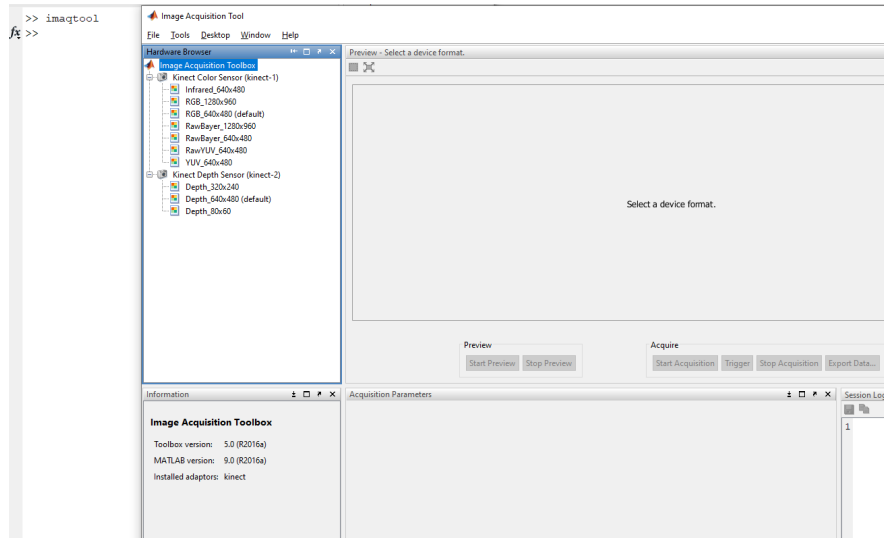
## Steps for Using kinectRGB\_ROI.m

Step 0: Install Matlab Computer Vision Toolbox, (the free trial version is fine, it's a 30 day license)

- Make sure kinectRGB\_ROI.m, RegionGrowBrute.m, and initRGBSample.m are all in the path

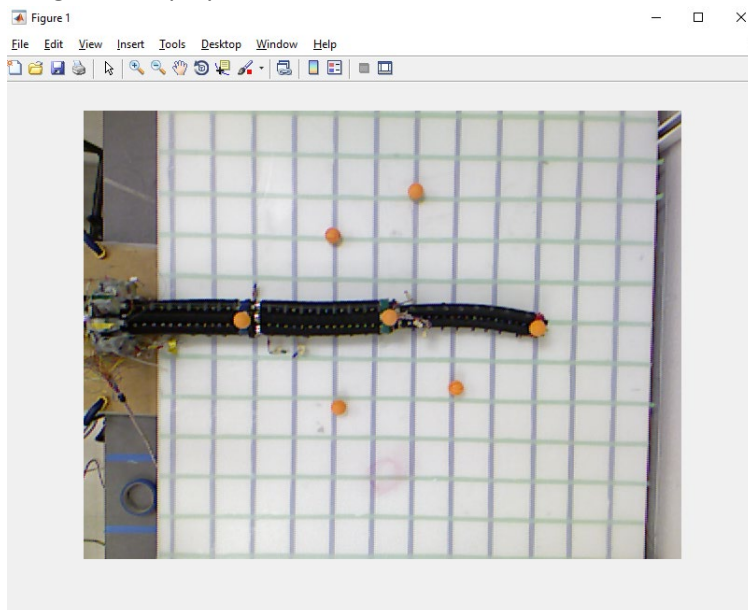
Step 1: Confirm Kinect is seen by Matlab

- Type 'imaqtool' into terminal
- Should see something like:

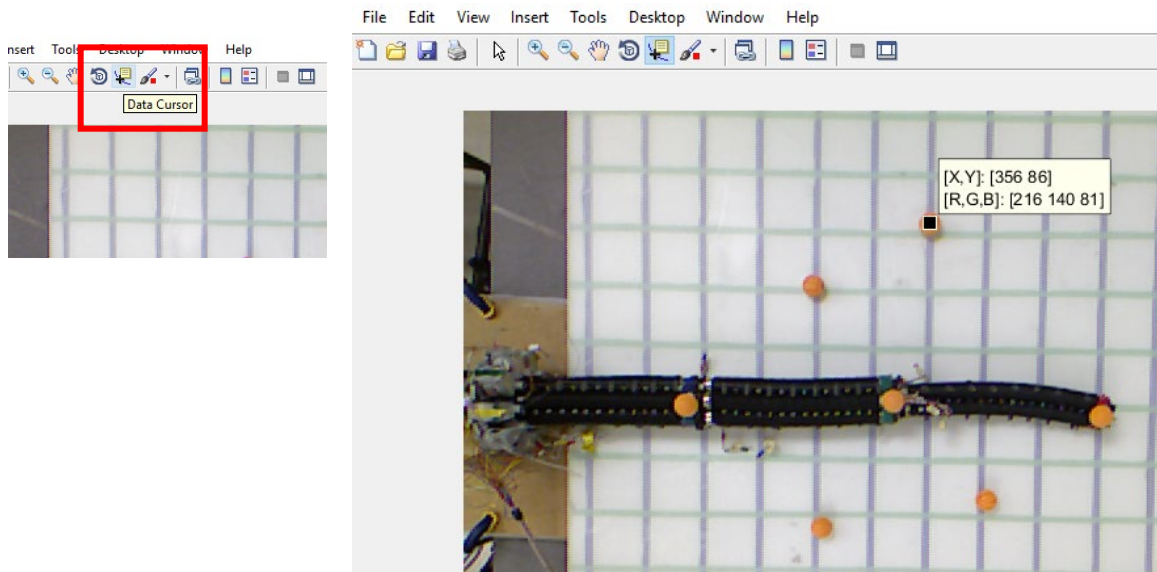


Step 2: (FIRST TIME ONLY) Run initRGBSample.m

- This will confirm Kinect is working
- Image will display similar to:



- Sample desired color using Data Cursor:



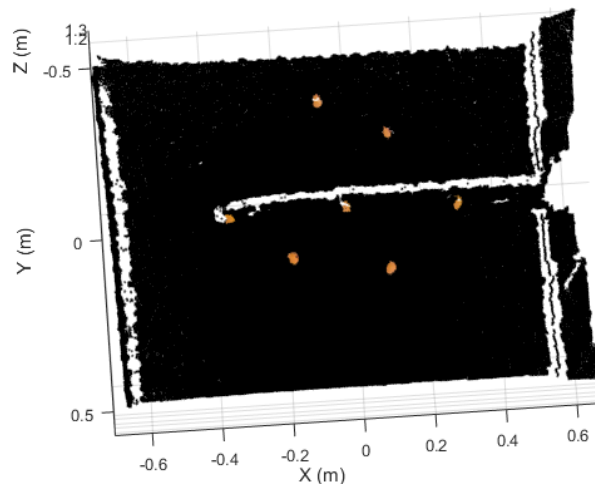
- Use the sample to determine range of RGB value for identifying regions of interest
  - For example, I used  $(200 \leq R \leq 255, 100 \leq G \leq 160, 0 \leq B \leq 100)$
  - I'd advise sampling a few points to get a reasonable range

Step 3: Apply thresholds from step 2 to Lines 8-13 of kinectRGB\_ROI.m

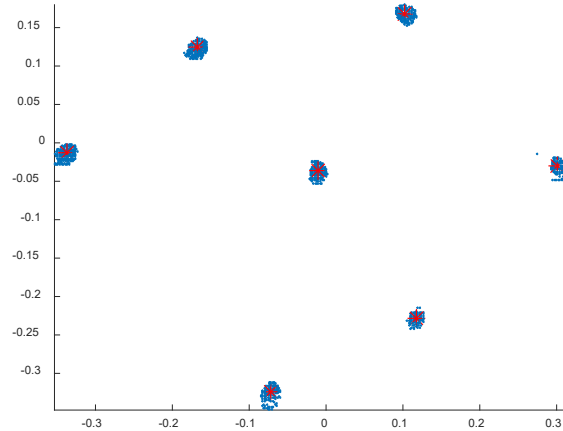
- Replace current definitions for rMin to bMax

Step 4: Run kinectRGB\_ROI.m

- Should output two plots:
  - The 3D image with only the regions of interest in full color, example:



- The located regions and their centroids



- The centers of the regions will be printed out to the terminal, but are also located in the array 'Regions'.

Make sure that the line "Releasing Kinect" is printed every time the Kinect is run. If not, copy/paste lines 155-159 from kinectRGB\_ROI.m into terminal before clearing variables. Otherwise, you will need to disconnect Kinect from power and computer and likely restart matlab.

All measurements from the Kinect are with respect to the Depth Camera lens.