Nanotechnology to Robotics

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Problem Set 2

Due Week 4 March 11 2023

1. Create a simple function to plot the population and census data, using the census data set that is available in Matlab. This data set can be accessed with “load census”. Print out or email instructor an image of your Matlab “current folder” showing that you have successfully created the .m files.
2. . Assume that we know the transform $$ in the figure 2.16, which describes the frame at the manipulator’s fingertips {T} relative to the base of the manipulator, {B}, that we know where the tabletop is located in space relative to the manipulator’s base (because we have a description of the frame {S} that is attached to the table as shown, $),$ and that we know the location of the frame attached to the bolt lying on the table relative to the table frame --- that is $.$ Calculate the position and orientation of the bolt relative to the manipulator’s hand $$.

Resources

1. -<https://en.wikipedia.org/wiki/OpenCV>
2. -https://docs.opencv.org