

Localization of Spherical Fiducials in CBCT/CT

The files contained in this directory are the matlab source code for localizing a spherical fiducial imaged with a CT or cone-beam CT. If you use the code in your research please cite it as:

Z. Yaniv, "Localizing spherical fiducials in C-arm based cone-beam CT", Med. Phys., vol. 36(11), pp. 4957-4966, 2009.

Interesting functions (algorithmically or technically):

- `ransacSphereConstrainedRadius.m`
- `getEdges3D.m`
- `fiducialLocalization.m` - `drawSpherePlaneIntersection`
- `fiducialLocalization.m` - `intensityWeightedCentroidFiducialLocalization`

Data files:

- `exampleData1` - 001-010.dcm, ProgramSettings.xml, 6mm fiducial.
- `exampleData2` - 001-010.dcm, ProgramSettings.xml, 4mm fiducials.

To run the program type `sphericalFiducialLocalization3D`. This will use the default settings which are appropriate for use with the `exampleData1`

For a description of available functionality use the program's help menu or read the `help.txt` file.

For questions and/or bug reports contact Ziv Yaniv, zivy@isis.georgetown.edu

Distribution manifest:

1. README.pdf
2. drawCircle.m
3. exampleData1 directory
4. exampleData2 directory
5. getEdges3D.m
6. help.txt
7. license.txt
8. ransac.m
9. ransacSphereConstrainedRadius.m
10. saveFigure.m
11. savePlot.m
12. sphericalFiducialLocalization3D.fig
13. sphericalFiducialLocalization3D.m
14. thresholdSelectionDialog.fig
15. thresholdSelectionDialog.m