CIRN Bootcamp Practicum Starter Guide readme

General Info

The idea of this repository is to house (in one place) all of the necessary codes and data files to complete the five practicums presented at the annual CIRN boot camp. In order to complete the practicums, do the following three things:

1) Make sure you have cloned (git clone) or downloaded all the CIRN repos on GitHub to a directory which is on your Matlab path.
2) Add the entire StarterGuide folder to your Matlab path
3) Step through each practicum (each contained in its own subfolder) with the fearless CIRN leaders

End-results from each practicum which are needed for future practicums are stored in the Outputs folder. Before completing each practicum, return to this readme for a brief summary of each practicum presented below.

Practicum 1: Camera Calibration

To complete the practicum, step through the 'demoCalibrate.m' code. The calibration images are stored in the demoCalibrateImages folder, and the TOOLBOX_calib folder contains the Caltech calibration toolbox. The end-result of this practicum is the lens calibration profile (lcp structure) for the camera, which is saved to the Outputs folder as a .mat file for use in future practicums. A dependency tree for the needed CIRN routines is also given as a text file in the folder.

Practicum 2: Solving UAV Geometry

To complete the practicum, step through the 'demoGeometry.m' code. The image which is being used to perform the rectification is entitled demoGeometryImage.jpg. Also included in the folder is the image demoGeometryGCPLocs.png which shows the locations of the GCPs which you will be clicking on in the image. The practicum results in three things saved to the Outputs folder for use in future practicums: the beta vector, the image data, and the meta variable. A dependency tree for the needed CIRN routines is also given as a text file in the folder.

Practicum 3: Rectification

To complete the practicum, step through the 'demoRectify.m' code. A dependency tree for the needed CIRN routines is also given as a text file in the folder.

Practicum 4: Creating Argus products from UAV imagery

To complete the practicum, step through the 'demoUAVArgus.m' code. The images are stored in the demoMovies folder, and the Outputs folder can be selects as the location for local results to be stored. This practicum contains its own readme file written by Rob to walk you through the demo; utilize this as an additional resource. This practicum outputs Argus image and pixel products, saved to the Outputs folder. A dependency tree for the needed CIRN routines is also given as a text file in the folder.

Practicum 5: cBathy from UAV imagery

To complete the practicum, step through the 'demoUAVcBathy.m' code. A dependency tree for the needed CIRN routines is also given as a text file in the folder.