Here is a list of the MATLAB files for this project:

Executables

1. alignMulti.m – a function that accepts two images and outputs the optimal displacement vector. It implements the coarse-to-fine search with image pyramids.
2. alignSingle.m – a function that accepts two images, initial displacement, and range for searching. It outputs the optimal displacement vector and the minimal metric value.

Functions

1. autoContrasting.m – a function that accepts an image and output the image after contrast enhancement.
2. autoCropping.m – a function that accepts an image and outputs three images, corresponding to the B,G,R channels extracted from the original image.
3. combineColors.m – a function that accepts three images (color channels) and two displacement vectors. It shifts the R and G images with the given vectors and outputs the resultant color image.
4. imgAlignMulti.m – an executable that generates images aligned using “alignMulti.m”. You can change the list at the top to let it align images as desired. Output is png format.
5. imgAlignSingle.m - an executable that generates images aligned using “alignSingle.m”. You can change the list at the top to let it align images as desired.
6. sobelFilter.m – a function that accepts an image and a threshold value. The function performs Sobel Operator on the image and filter with the threshold. It outputs an image which contains the edges of the original image.