

Assignment 3

Due by October 24, 2019

This project is to investigate a variety of methods for image enhancement and filtering by *histogram equalization*, *piecewise linear contrast stretching*, *median filtering* and *smooth filtering* as introduced in the class. You are asked to report the following experimental results on the following three images stored in the "unsigned char" Raw image format with the raster-scanned order.

- (a) 480×480 arrayR.raw (a microarray image)
- (b) 512×512 Whorl.raw (a fingerprint image)
- (c) 480×640 gelm1.raw (an electrophoresis gel image)

- (1) Do histogram equalization with 8 and 16 gray levels, respectively.
- (2) Do contrast stretching with no more than 3 line segments.
- (3) Do 5×5 median filtering.
- (4) Do 5×5 smooth filtering.
- (5*) Other strategies for image enhancement.
- (6*) Repeat steps (1~5) for images arrayG.raw, geltest.raw, Rloop.raw

You have to turn in image displays together with the source codes, for example, C/C++, Fortran, Pascal, Matlab, and Mathematica codes.