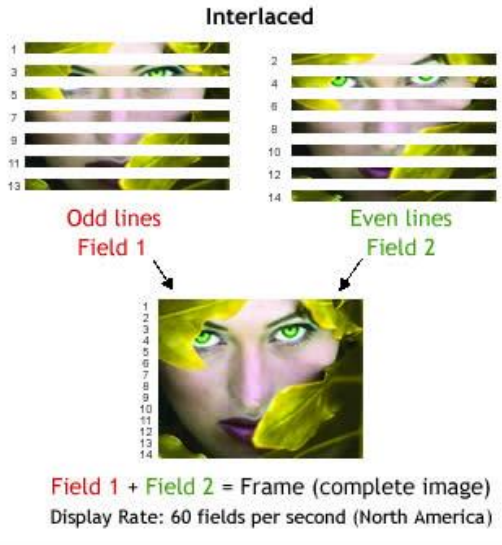
EEE-6512 Image Processing and Computer Vision
Fall 2018 Homework #1
August 23, 2018

Due: September 1, 2018, 11:59 PM

Image Reconstruction

This assignment should be completely individually by the student. Late submissions will not be accepted.

An interlaced camera transmits a full-resolution image by first transmitting the odd lines (rows) in the first field (image) followed by the even lines of the image in the second consecutive image field. The full-resolution image can be recovered by combining the odd and evening image frames accordingly.



In this assignment, you are to write a MATLAB m-file script to assemble a full resolution image based on consecutive digitized odd and even image frames captured by an interleaved camera.

Also, it Is known that the camera is faulty. The defect only affects the even image fields. During the transmission process, the pixel rows of the even fields appear shifted by the mean value of the row (subtraction of the row's mean from the original row pixel intensities. Your program must correct this disturbance so that the recovered full resolution image does not show any disturbances. A simple way to correct the image is to use the odd rows mean values and add them to the adjacent even row.

The odd and even image frames are stored as MATLAB 'MAT' files in the homework directory as *even_rows.mat* and *odd_rows.mat*. **YOU ARE NOT ALLOWED TO USE LOOPS!**

To receive full credit for this assignment, you must submit the following: **1.)** A document which shows the *even_rows.mat*, *odd_rows.mat,* and reconstruction files displayed as images. **2.)** An M-file containing **commented** MATLAB code for the image reconstruction script Students should ensure that their M-file executes without errors to avoid receiving point deductions.