Homework 2 (Due Mar. 17th)

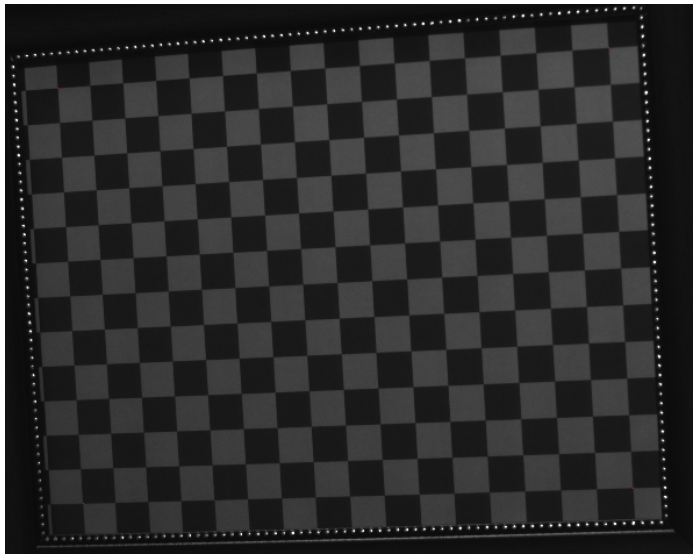
- Problem #1 : Edge detection
  - Use LoG and Canny edge detection to process the following image respectively. Make your resultant edge images as clean as possible (it does not have to be perfect).

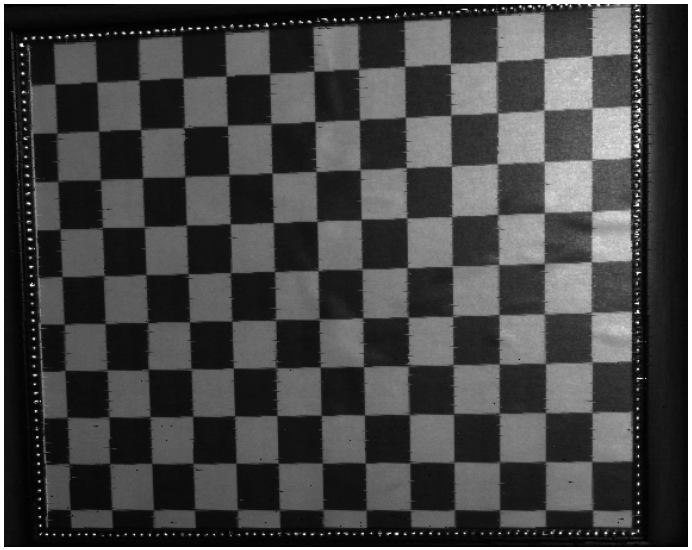
Homework 2 – cont'd

- Problem #1 : Requirement
  - For ME 456 students, it's okay to use any MatLab build-in functions.
  - For ME 556/556XE students, You are not allowed to use the following Matlab functions: edge, imfilter, fspecial. You must write your own LoG, Canny, zero-crossing, hysteresis thresholding or non-maxima compression
  - In your report, other than showing your resultant pictures (one with LoG and the other one with Canny), please also comment on the differences resulted by using LoG and Canny

Homework 2 – cont'd

- Problem #2: Corner detection
  - Use Harris corner detection to process the following images



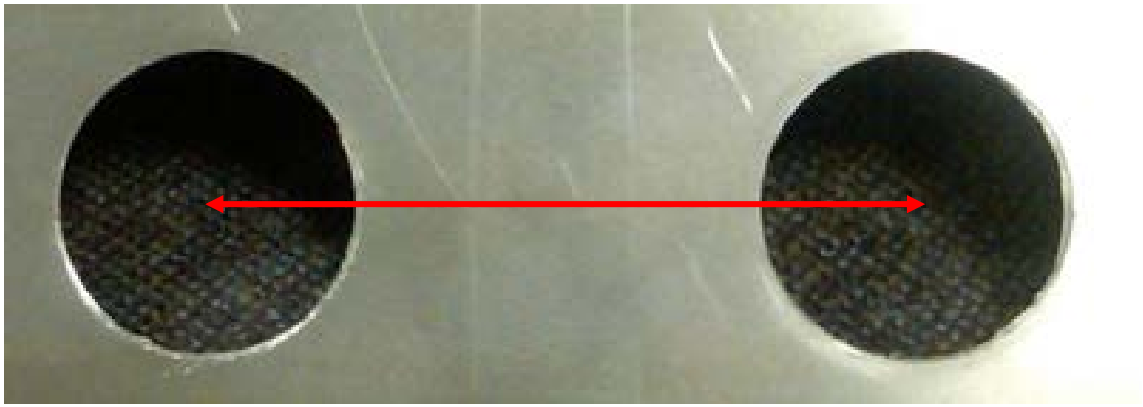


Homework 2 – cont'd

- Problem #2 : Requirement
  - For ME 456 students, it's okay to use any MatLab build-in functions.
  - For ME 556/556XE students, You are not allowed to use the following Matlab functions: corner, detectHarrisFeatures, detectMinEigenFeatures. You must write your own Harris corner detection algorithm.
  - In your report, show your resultant images

Homework 2 – cont'd

- Problem #3: Hough transform
  - Find the distance of circle centers in the following image



Homework 2 – cont'd

- Problem #3 : Requirement
  - For ME 456 students, it's okay to use any MatLab build-in functions.
  - For ME 556/556XE students, You are not allowed to use the following Matlab functions: Hough, imcircle, imfindcircles. You must write your own Hough transform algorithm. You may use your processed edge detection result obtained from Problem #1
  - In your report, please report the computed circle centers locations and the center distance value (all students), show an image or 3D mesh plot of your accumulator(ME 556/556XE students)

Homework 2 – cont'd

- Example of an accumulator
- Please submit all your source code with your report by Mar. 17th. Late submission will be accepted by will lose 2 pts/day after the due date