Gebze Institute of Technology
Department of Computer Engineering
BIL 665 / BIL 463
(Introduction to) Computer Vision
Fall 2016
HW2
Nov 8th 2016

In this homework you will write a detector for ring shaped objects using Hough transform based circle detectors. Your ring shapes can be both bright on dark or dark on bright objects as shown in the attached image.

Your program will take live images from the camera. It will find all ring objects, show their centers and inner and outer rings. It will also show the Hough voting space on a separate image. There should be two modes of operation: one continuous run, which runs the detector after continuously without waiting for user input at at least 5 fps. The other mode runs the detection one by one and ask for user key press after each run.

You also write a separate report that describes your ring detection algorithm step by step. Include figures and failure cases in your report.

Notes

- You will compile and demo your system at project lab. Your next homework will depend on this homework, so you should submit this homework.
- Submit your homework to moodle. During the demo you will download the code, compile it and run the executable file from the command line prompt.
- You are allowed to use Canny Edge Detector and Gradient calculation functions of OpenCV. All other calculations will be performed by your code.
- There could be more than one ring on the scene all of which have to be detected.
- There could be ring inside rings which should be detected separately.