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CS 3150

Final Project

Dr. Feng

Final Report

1. This project detects mickey mouse ears the provided image.
2. Most of the code is my own work except for the part where I perform gamma correction and use the Hough circles method. The gamma correction I used from examples provided by you (Demo8\_skin\_GammaNotHelpful-3.py), and the Hough circles method I got from watching a video on YouTube (Source: <https://www.youtube.com/watch?v=-o9jNEbR5P8> ). I used the Hough circles method because it avoided all the messy code that comes from performing a Hough transformation and then singling out the points that make up the circles.
3. The libraries I used were:   
   Numpy  
   Cv2  
   matplotlib
4. I used gamma correction and a gaussian blur because it helped the Hough circles method to filter out all the unnecessary circles that might have been detected in the source image or hidden from the naked eye due to luminance differentiations in pixel groups.
5. The gamma correction filtered out all the possible luminescence issues that might have caused the Hough circles method to pick up more circles than it needed to. I then lowered the chances of extraneous circles being detected even further by using a gaussian blur. The blur made it even more difficult for that method to detect smaller or unnoticed circles.
6. My program is simple and uses just a few of the methods taught in class because I wanted it to be as straight forward as possible. Trying to apply everything I was taught felt like overkill and probably would have complicated things to the point where the program would become useless. I wanted to make sure people could follow along and understand each step I took to achieve the final result.   
     
   Thanks for the amazing semester, Dr. Feng. This class has been super fun and I’ve enjoyed every minute of it!