University at Buffalo

Department of Computer Science and Engineering

CSE 473/573 – Computer Vision and Image Processing

Project #3 Report

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## 1. Part A

(1) Concise description of what algorithms tried and ended up using

First of all, face recognition module was used to solve this problem. By using face locations, top, right, bottom, and left were assigned and put them in bbox. However, F score was under 0.75 so another method is used in this project. The ended-up used model is CascadeClassifier in cv2. The process is like this: assign path using 'img_'+str(idx)+'.jpg'. This is because image name is like 'img_1.jpg'. Next, convert image as gray image, and use detectMultiScale module to get locations. Then I put them in the bbox.

(2) Discussion of the results and implementation challenges

The accuracy improved to 0.76 by using open cv Cascade Classifier. To improve accuracy more, parameter tuning has used. Scaled factor, minNeighbors, and XML classifiers were changed, but finally minNeighbors was changed to 5, and XML classifier was changed to 'haarcascade_frontalface_alt2.xml'. By this process, the f score became over 80%.

## 2. Part B