Computer Vision Project 4 Progress Report 2

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Progress Report 2 11/13

For any results or objectives that you planned to achieve by the Progress Report 1 due date, demonstrate that you have achieved them by providing images, video, or starter code. If you missed your planned completion date, explain what challenges you faced that prevented you from achieving them. Include an updated schedule in your progress report that reflects what you believe you can achieve and when for the duration of the final project schedule.

Requirements are the same as for progress report 1, except you should address the goals for the time period between progress report 1 and 2.

We have completed the recognizing faces portion of our project. We have automated the training process and made the program interactive. It is now generic and can be trained to recognize any person. Unit testing development is in progress. That code has been pushed, and is under the folder named recognize_faces. To run the program:
python pyfacesdemo pwd/faces_db 4 3
This will ask you if you are new, if you are then it will put you in the database, else it will try to recognize you.

We have explored various options for tracking eye movement, none of which have yielded enough accuracy to confidently compute the direction the eye is moving. As of now, we can isolate the area around the eyes and draw circles around them using the Hough circles function but that is not giving us the accuracy we require. We are actively investigating other strategies, namely optical flow. That code has been pushed, and is under the folder named eye_tracking.

For emotion recognition, we are actively researching and trying to implement the ideas outlined in this paper: http://cs229.stanford.edu/proj2009/AgrawalCosgriffMudur.pdf. The work that has been done has been pushed, and can be found under recongnize_faces/emotion.py.

Our planned schedule for meeting objectives is now as follows:

Recognize a person from a webcam video
• Estimate the effort required: Medium effort
• Expected completion date: November 20
CODING COMPLETE - UNIT TESTS NEEDED

Eye tracking
• Estimate the effort required: High effort
• Expected completion date: December 2
CURRENTLY IN DEVELOPMENT

Track facial gestures
• Estimate the effort required: Very high effort
• Expected completion date: December 2
CURRENTLY IN DEVELOPMENT

Combined experiment with eye tracking and facial gestures:
• Estimated effort: Very high effort
• Expected completion date: December 2