

## Group 3

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- Till last evaluation we had a code that could give take input video of hand and give output video showing the skeleton of hand as the motions are made.

### Changes made since last TA evaluation:

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- After that, we took out the co-ordinates of the key-points and normalized them according to the resolution of input video. The initial frames were ignored until all the key-points were found in at least one frame. If the remaining size is too small, the process ends with an error.
- Then, a text file containing distances of particular set of key-points of each frame was made. This included all the ways a person could do actions with his hand. The direction of hand was ignored and output was taken with respect to 0-point of the hand. (The zero point is the term we gave name to the point where wrist connects the hand and not an actual technical term). The direction of hand with respect to camera was ignored as a person may do the same action with a linear transformation on X and Y axis.
- Then, the password was either saved to a file with a unique name or otherwise compared to all existing password files according to users' choice.
- The comparison of password involved comparing of key-point distances of most frames and accordingly assigning percent of hand and action matched. Thus, the confusion matrix was also generated.
- Later more speculations were made on how to increase accuracy by finding major changes in the movement and comparing the hand for frames only when major changes were made and hence removing problems due to small time lag/advance.

### Confusion Matrix (For the right person):

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	Authenticated	Not Authenticated
Password Correct	85.883%	14.117%
Password Incorrect	10.15%	89.85%

### Confusion Matrix (In case of Forgery):

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	Authenticated	Not Authenticated
Original Person	85.883%	14.117%
Forgerer	~40%	~60%