PROJECT XESTOS

MID TERM REPORT

PROGRAMMING LANGUAGES – CSD 203

BY

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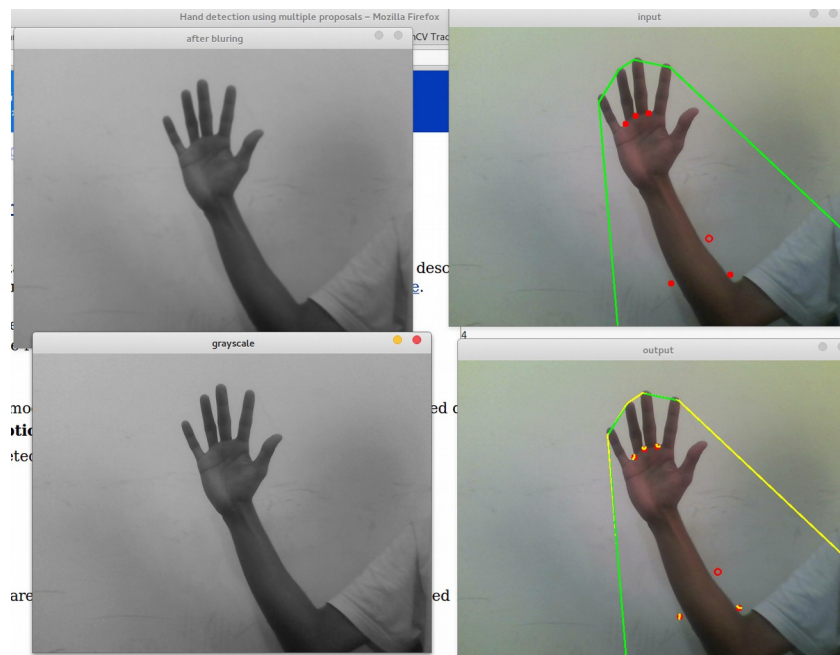**KARAN SHARMA**
SHANTNU PATLAN

PROGRESS:

We are currently working on getting the hand gestures right. Also we are simultaneously working on the system interface also.

>Using contour mapping to detect hands [fingers].
>Using haar cascades to remove unncessary elements.
>Creating python scripts to initate system functions.

ROLES:

- Hoshank Ailani :- System integration. Connects output of the gesture to actual system effects.
- Chris Sunny Thaliyath, Shantnu Patlan:- Working with contour mapping to extract fingers.
- Karan Sharma, Akhil Alluri :- Gesture extraction
- Everyone :- Possible Machine learning for gesture guess.

SCREENSHOTS:

EXPECTED TIME TO COMPLETION :

We expect to complete our project by 2nd week of November.

XESTOS :

Look for these links:

For python:

http://opencv-python-tutroals.readthedocs.org/en/latest/py_tutorials/py_ml/py_table_of_contents_ml/py_table_of_contents_ml.html

http://www.javacodegeeks.com/2012/12/hand-and-finger-detection-using-javacv.html

Some things on neural net:

http://www.codeproject.com/Articles/16419/AI-Neural-Network-for-beginners-Part-of

This is a good set of instructions for detecting and sketching a hand :

www.intorobotics.com/9-opencv-tutorials-hand-gesture-detection-recognition/

This is what we have understood about the technique
1)Convert to gray scale
2)Blur the grayscale image
3)Threshold and find the contours
4)Find the largest contour which most likely is hand (Provided it is in the centre of the image)
"WE WILL GET A GOOD HAAR CASCADE FOR HAND"
5)Find the centre of the contour using moments method
6)Find the convex and concave regions and
7)Draw around the the outer convex regions

http://neuralnetworksanddeeplearning.com/chap1.html

The best way around the problem would be to treat the different hand gestures as nothing but somthing similar to
handwritten digits .So similar to that of the above algorithm we should be able to train the algo to learn to
understand different hand gesture's .