Project proposal

Team members:
Yuchen Liu

Project Title (1 sentence):
Proper mask wearing detection

Provide a short description of the project (short paragraph):
Use several edge detection algorithms to detect if a person is wearing a mask. If they are, continue to use template matching through a small dataset of facial features to detect if the mask is properly worn, i.e. mouth and nose are both fully covered. The project will start with pictures where the face is taken from the front and move on to taken from the side, if possible.

Where you will get the data (1-2 sentences)?
Self-taken photos and generic pictures from internet.

What will each team member code/develop (short paragraph, in detail, per person: what algorithms, how will apply them, what things will be changed, etc.)?
Several edge detection algorithms (Laplacian, canny, etc.) and template matching algorithms (SAD,NCC,etc.) will be tested. The edges of facial features will be used to run through a dataset of mouth/nose edges to see how successful the match is.

How will each team member evaluate the work/results (short paragraph)?
A small dataset of pictures will be tested to evaluate the accuracy of face mask detection.

Project Title (1 sentence):
Text extraction from pictures

Provide a short description of the project (short paragraph):
Any picture is given with text in it. Template matching is used to run through alphabet to extract the English text from the picture. For regions where there is suspiciously a letter, segmentation will be extracted with various methods to see if there is a better fit to improve results.

Where you will get the data (1-2 sentences)?
Self-taken photos.

What will each team member code/develop (short paragraph, in detail, per person: what algorithms, how will apply them, what things will be changed, etc.)?
template matching algorithms (SAD,NCC,etc.) will be tested. Segmentation methods will be tested (k-means, SLIC, etc.) to see improvement of results.

How will each team member evaluate the work/results (short paragraph)?
A small dataset of pictures will be tested to evaluate the accuracy of text manually.