HW7 Report

`opencv`

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1 How to run this Skin-Detect Software?

Just go to the path of source code folder and run the following command in your ubuntu terminal :

```
./run_skin_detect.sh
```

or

```
bash run_skin_detect.sh
```

After you run the cmd, you should press any key to let the program run on next image or vedio.

After the program run to the end, you can find tow imgs and a vedio added in the folder, they are the skin detected output.

1output.png
38.9 KB


2output.png
23.4 KB


Liyifeng.avi
4.5 MB

Besides, there is an vedio named "皮肤检测演示视频" in the folder.


皮肤检测演示视频.mp4
4.4 MB

2 Skin Dectect Algorithm

- Step1: Filt image with Bilateral
- Step2: Do MORPH_OPEN and MORPH_CLOSE operate to filtered image
- Step3: Convert BGR-Space to HSV-Space
- Step4: Use color segmentation to get the mask
- Step5: Do MORPH_CLOSE and MORPH_OPEN operate to mask image
- Step6: Get dst image by mask

I designed a class to implement the algorithm, its interface is belowed:

```
enum SkinDetectType
{
    IMAGE,
    VEDIO
};
class SkinDetector
{
public:
```

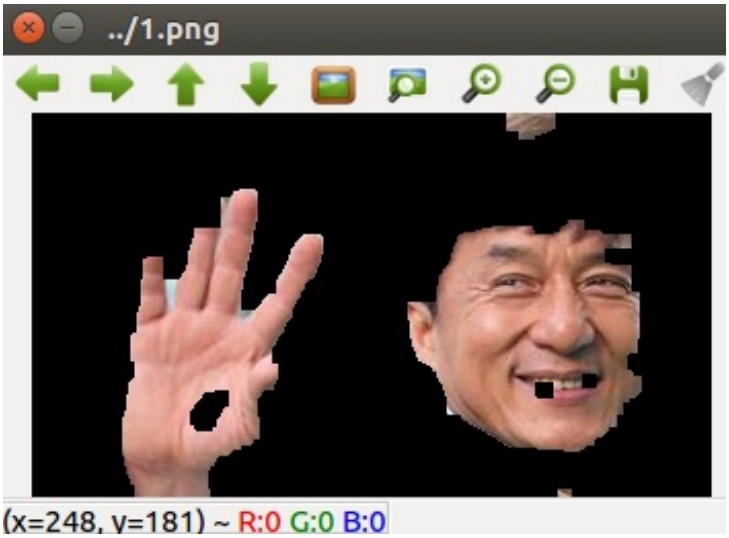
```
9.      explicit SkinDetector(std::string path, SkinDetectType type):_path(
    path),_type(type)
10.     {}
11.     ~SkinDetector(){}
12.     void run();//just call this
13. private:
14.     std::string _path;
15.     SkinDetectType _type;
16.     void detectSkinHSV(const cv::Mat& srcImage, cv::Mat &dstImage);
17. };
```

3 Result

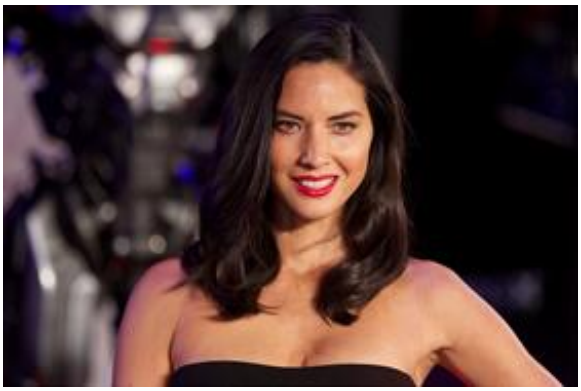
3.1 Process image

- src img

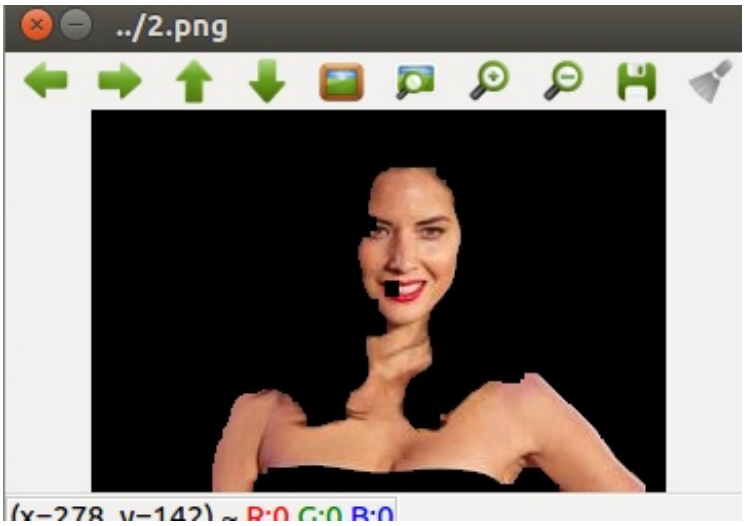
- skin detect img



- src img

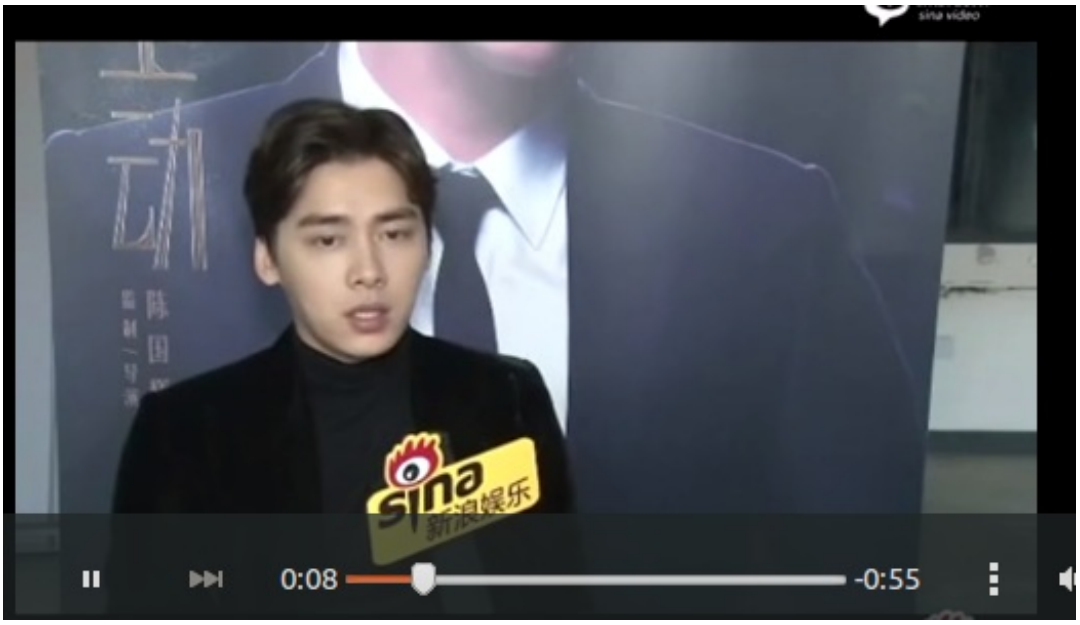


- skin detect img



3.2 Process vedio

- src vedio screenshot



- skin detect vedio screenshot