

CVIP

Computer Vision Image Processing tool

Kotenkov Maksim
Makanin Kirill
Yakovleva Valeria

<https://github.com/CV-goes-frr/CVIP>

<https://clck.ru/374DJf>

Mentor: Parnachev Vladimir Vladimirovich

```
muren@murenus: /mnt/08EC232041C8B872/CVIP/81st$ ./CVIP [-i=photo.jpg]crop:0:0:350:300[cropped][cropped]face_detection[-o=detected][cropped]mask:face.jpg[-o=nas  
ked][-i=photo.jpg]face_blur:5[-o=blurred_original_size][blurred_original_size]scale_to_resolution:1920:1080[-o=blurred_good_resolution] --parallel_processes=4
```

```
murens@murens: /root/.ssh$ ./CVIP [-i=photo.jpg]crop:0:0:350:300[cropped][cropped]face_detection[-o=detected][cropped]mask:face.jpg[-o=masked][-i=photo.jpg]face_blur:5[-o=blurred_original_size][blurred_original_size]scale_to_resolution:1920:1080[-o=blurred_good_resolution] --parallel_processes=4
```

Files with the following names will be created:

detected
masked
blurred_original_size
blurred_good_resolution

PROCESSING...

CROP IN PROGRESS...

Time elapsed: 4.935264587402344e-05

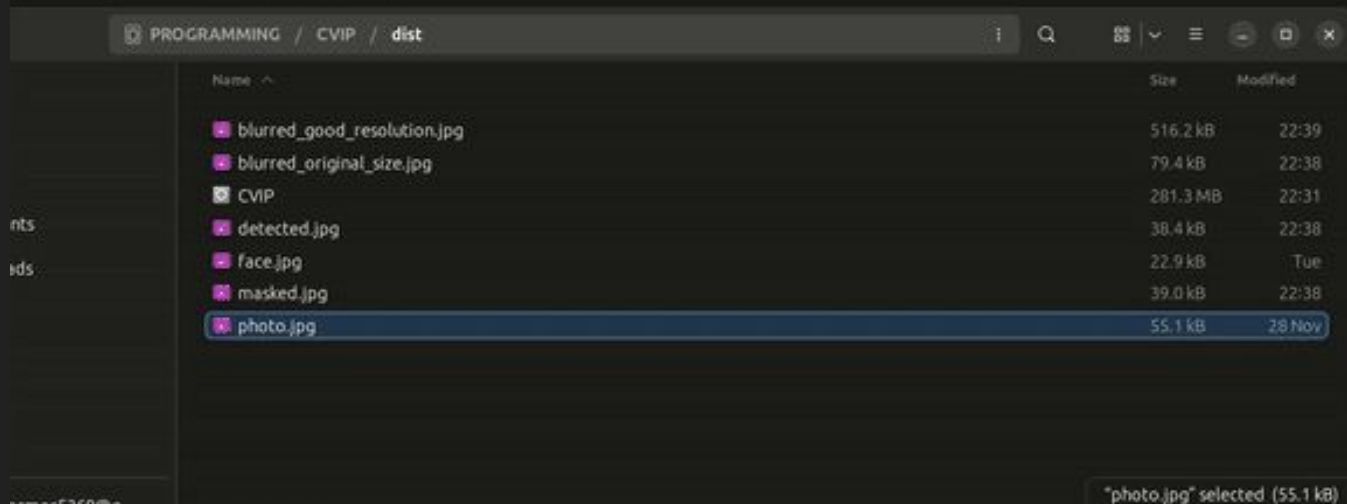
FACE DETECTION IN PROGRESS...

Time elapsed: 0.20304441452026367

CROP IN PROGRESS...

USING CACHE...

Time elapsed: 1.9550323486328125e-05



1), renderer: AMD Radeon Graphics (rembrand

TIME ELAPSED: 22.72114658355713

Let's look closer at the prompt example:

```
./CVIP [-i=input_image.jpg]crop:0:0:1000:500[cropped][cropped]face_detection[-o=detected][cropped]mask:mask_filename.png[-o=masked]  
[-i=input_image2.png]face_blur:5[-o=blurred_original_size][blurred_original_size]scale_to_resolution:1920:1080[-o=blurred_good_resolution]
```

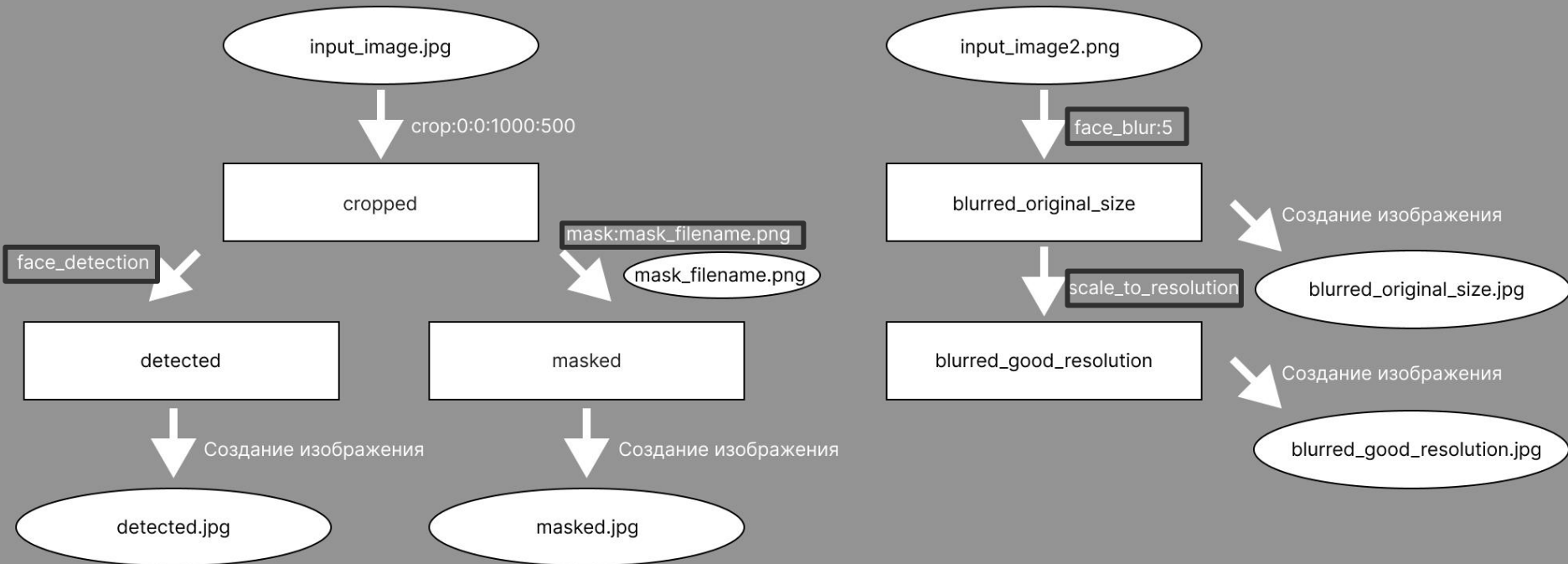
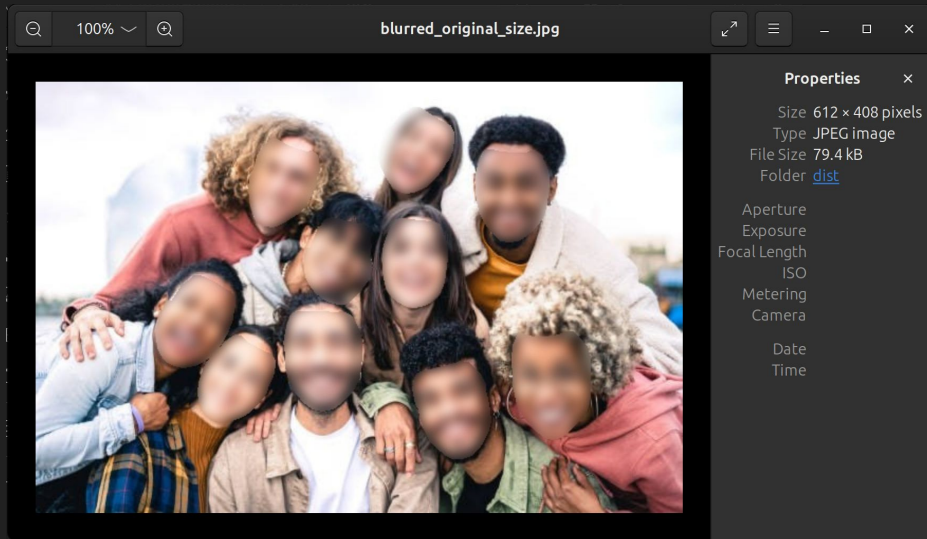
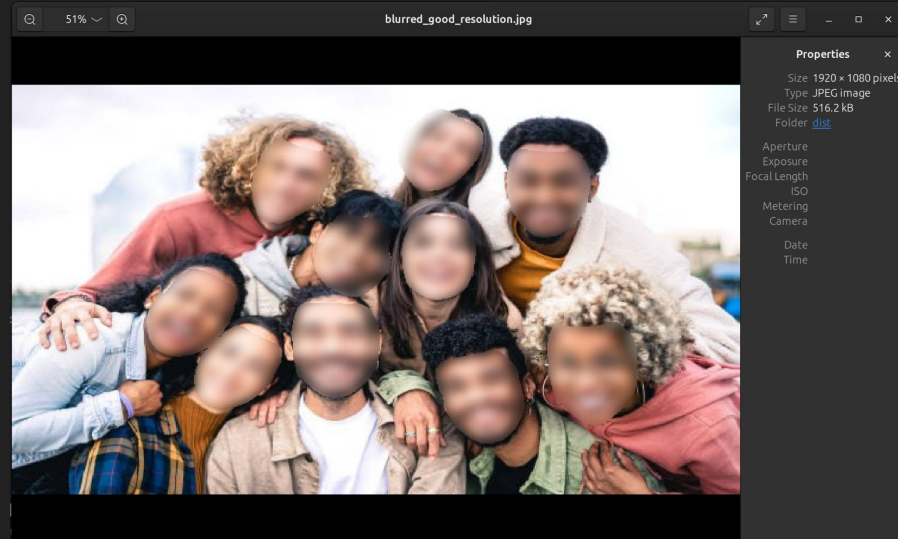


Image scaling

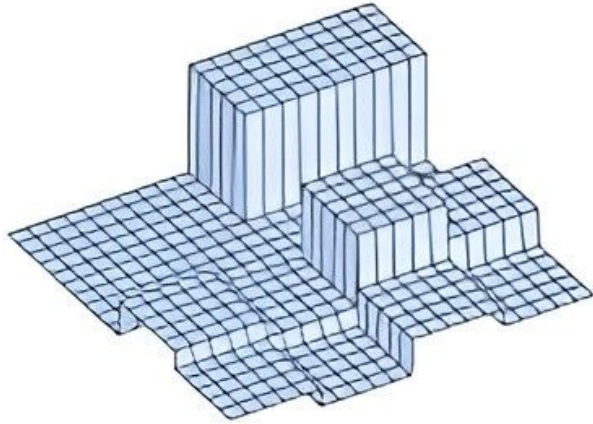


Original image

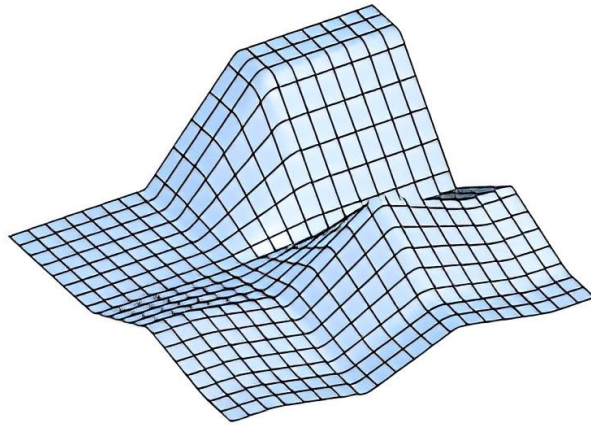


Resized image

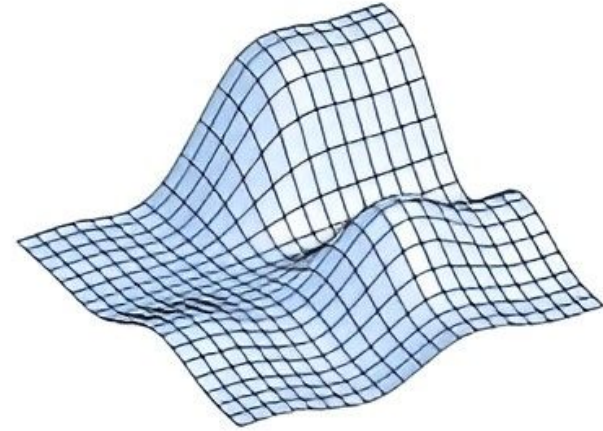
Interpolation



Nearest neighbors



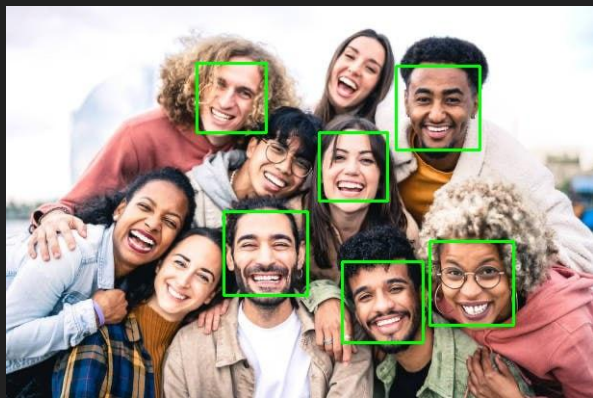
Bilinear interpolation



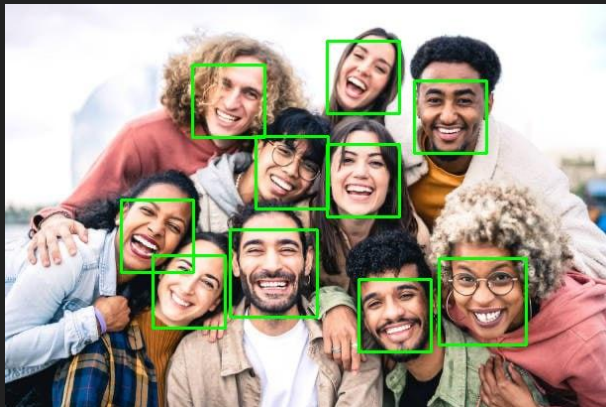
Bicubic interpolation



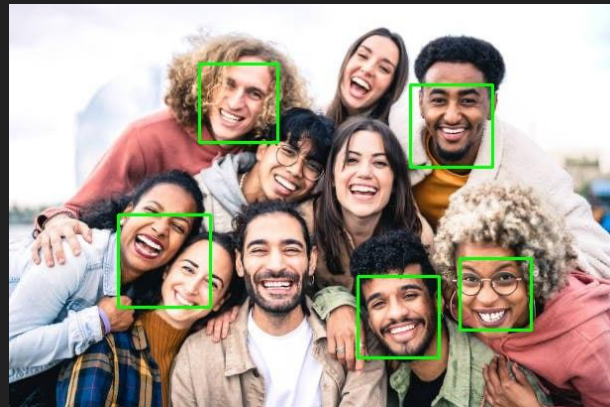
Models we've used for detection with comparison



Viola-Jones algorithm
with haarcascade



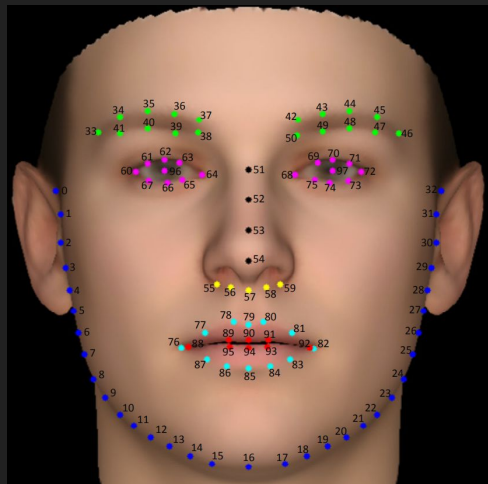
dlib



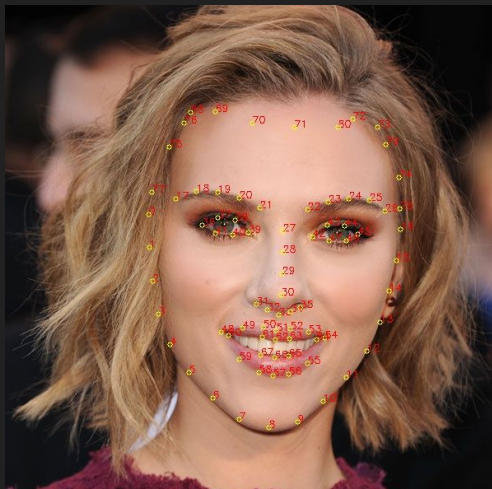
mediapipe
with blazeface



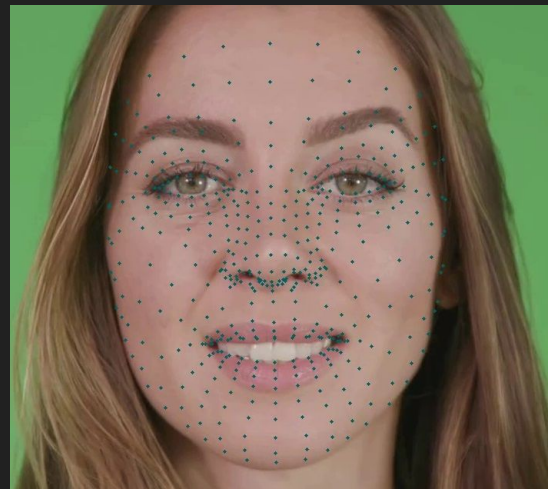
Face landmarks



dlib 68-points



dlib 81-points



blazeface 468-points



Face blur



Masking





Affine transformation

