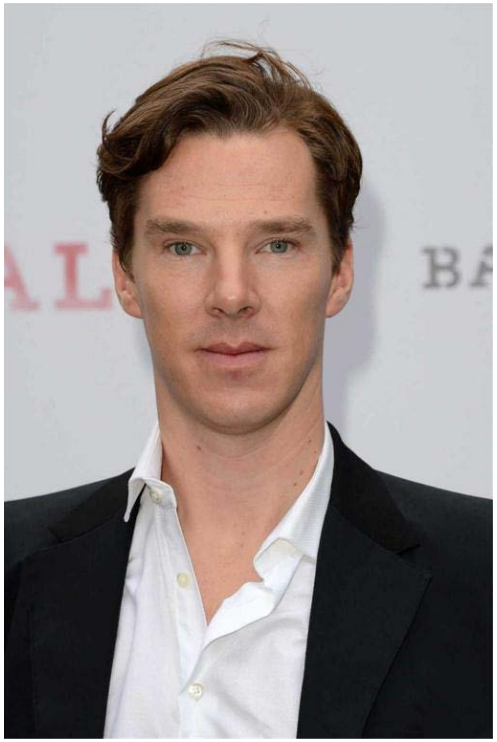
Face Replacement

Option 2

Aditya Gourav
Dhruva Kumar

Results

Input



Frontal pose detected

Replaced

Reference

Frontal pose detected

Time taken: 1.04 seconds

Results

Input

Frontal pose detected

Replaced

Reference

Frontal pose detected

Time taken: 0.96 seconds

Results

Input

Frontal pose detected

Replaced

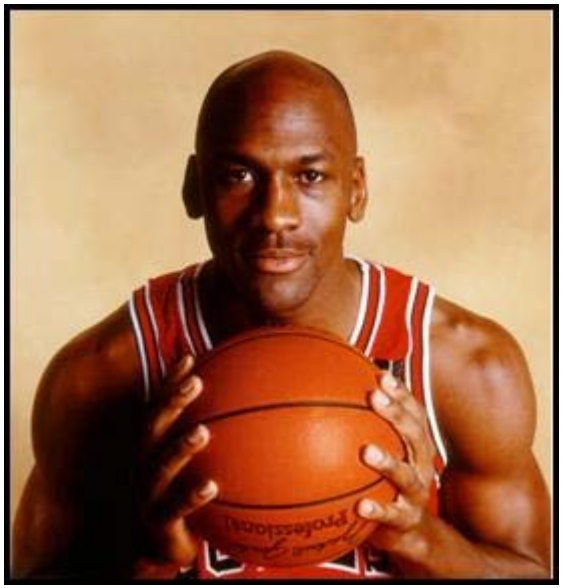
Reference

Frontal pose detected

Time taken: 0.92 seconds

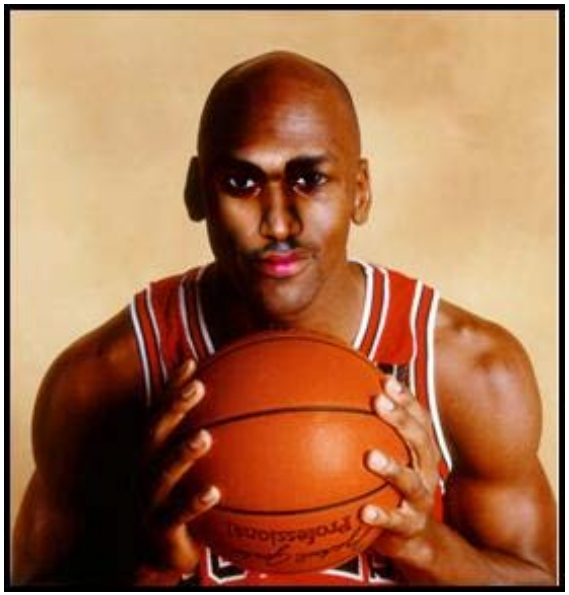
Results

Input



Frontal pose detected

Replaced



Reference

Frontal pose detected

Time taken: 0.8 seconds

Results

Input

Frontal pose detected

Replaced

Reference

Frontal pose detected

Time taken: 0.90 seconds

Results

Input

Frontal pose detected

Replaced

Reference

Frontal pose detected

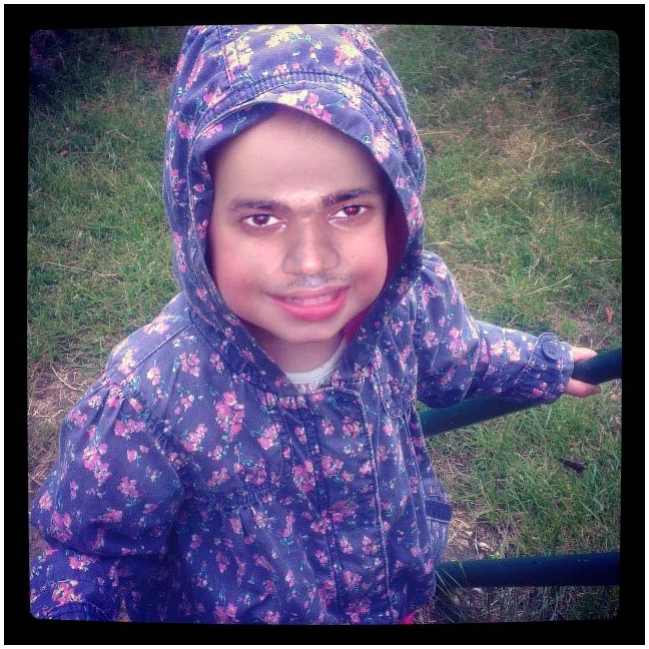
Time taken: 0.95 seconds

Results

Input

Frontal pose detected

Replaced



Reference

Frontal pose detected

Time taken: 0.86 seconds

Results

Input

Left pose detected

Replaced

Reference

Frontal pose detected

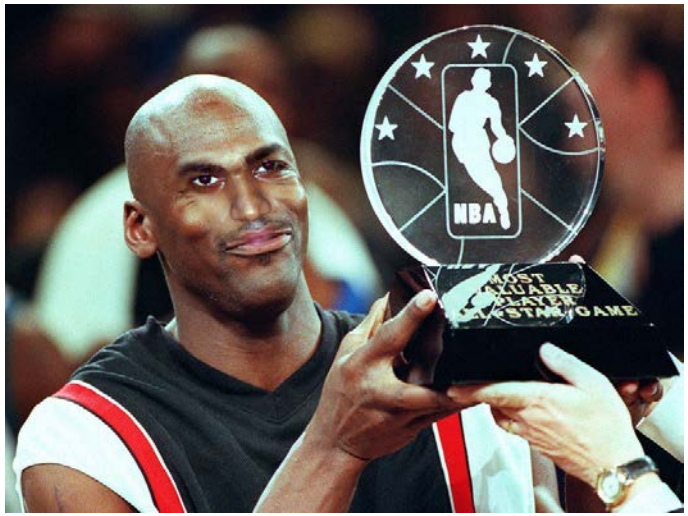
Time taken: 0.82 seconds

Results

Input

Right pose detected

Replaced



Reference

Frontal pose detected

Time taken: 0.93 seconds

Results

Input

Frontal pose detected

Reference

Frontal pose detected

Replaced

Time taken: 1.1 seconds

Results

Input

Reference

Frontal pose detected

Results

Replaced

Reference

Frontal pose detected

Time taken: 6.6 seconds

Results

Input

Reference

Frontal pose detected

Results

Input

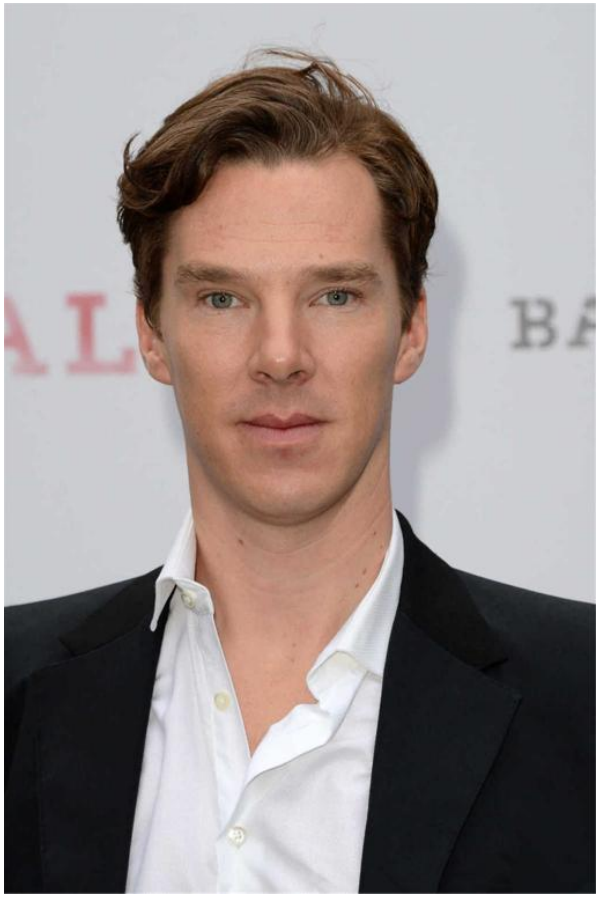
Reference

Frontal pose detected

Time taken: 8.7 seconds

Algorithm flow

Input

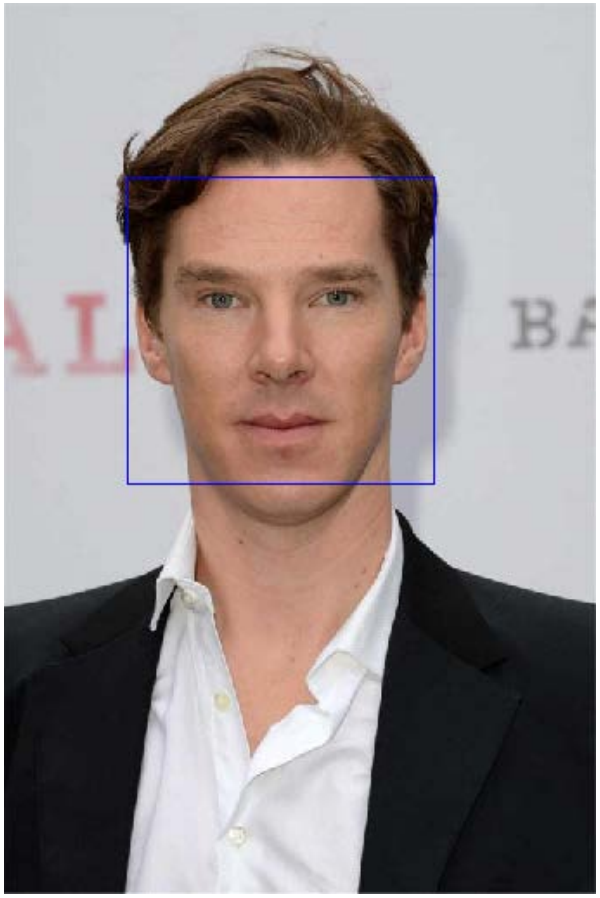


Reference

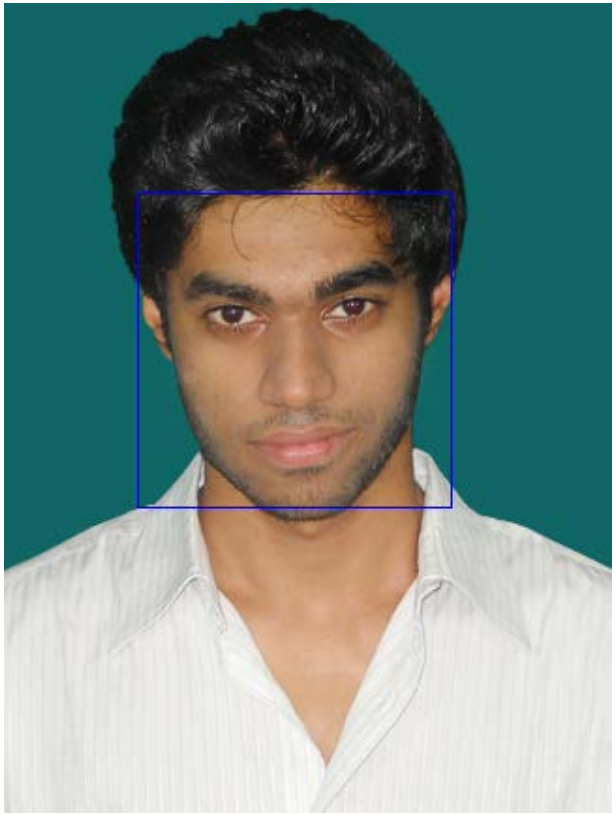
Read images

Algorithm flow

Input



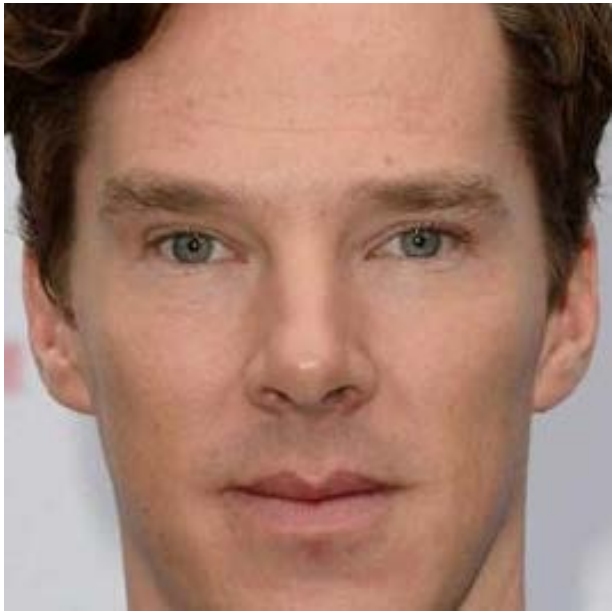
Reference



Detect faces

Algorithm flow

Input

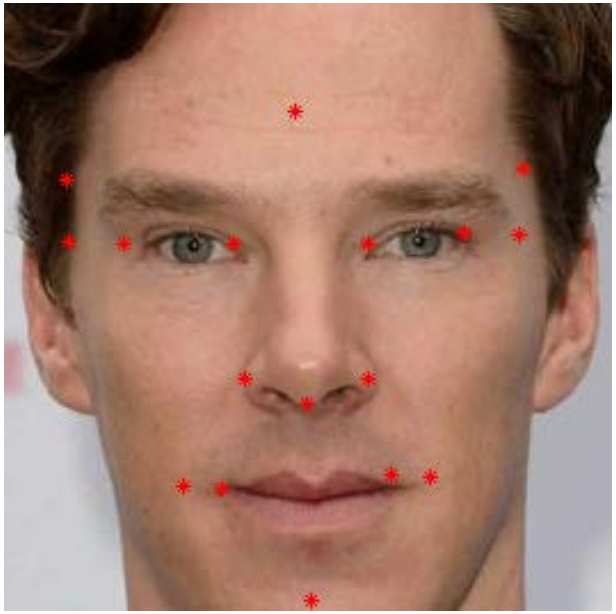


Reference

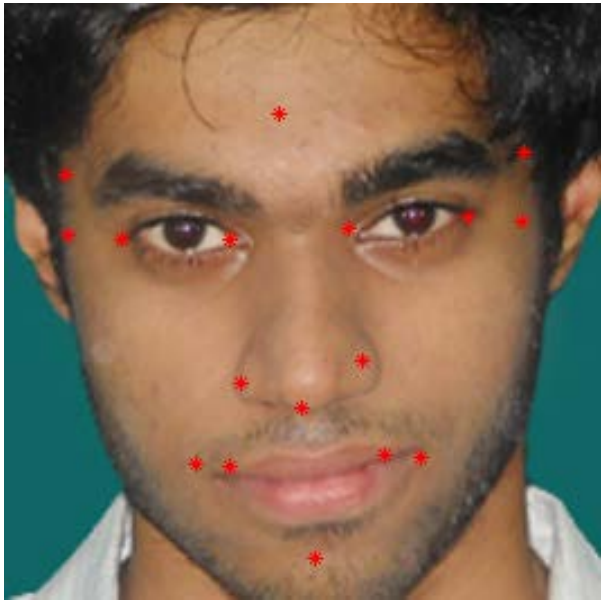
Crop face and resize

Algorithm flow

Input



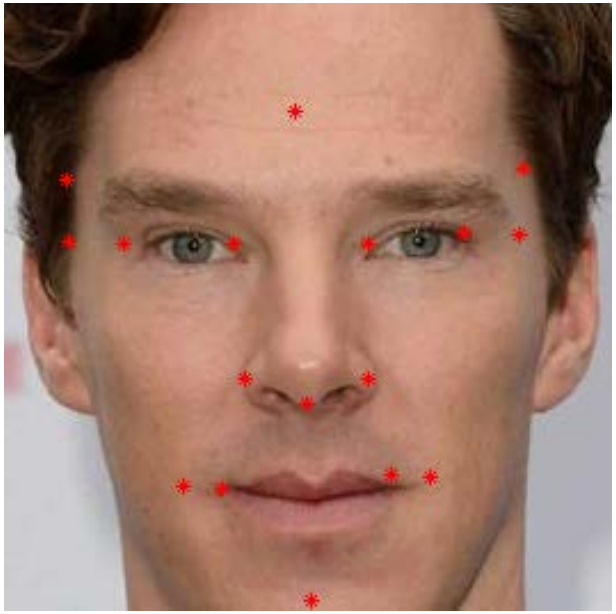
Reference



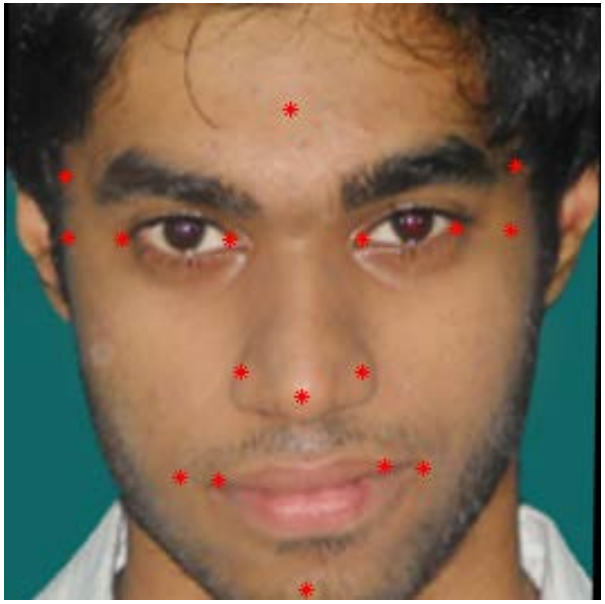
Detect facial features

Algorithm flow

Input



Reference



Affine transformation

Algorithm flow

Input

Reference

Convex hull

Algorithm flow

Input

Reference

Refinement - Recoloring

Algorithm flow

Input

Reference

Replace

Algorithm flow

Input

Reference

Refinement - blending

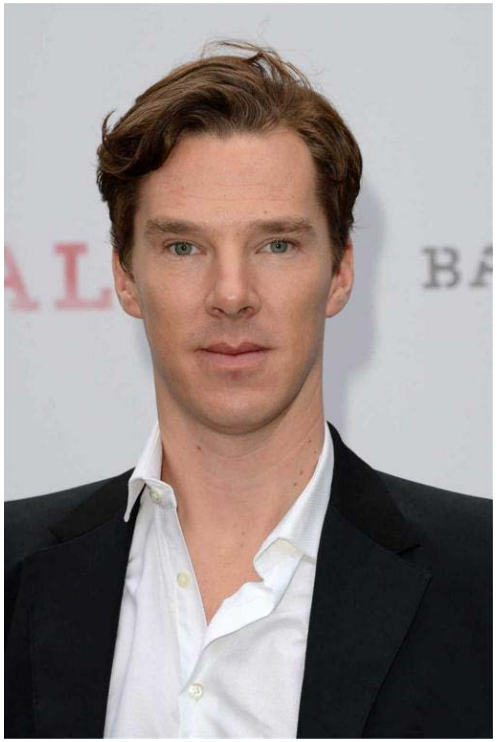
Algorithm flow

Replaced

Retain it in the original co-ordinate system

Algorithm flow

Input



Replaced

Reference

Time taken: 1.04 seconds

References

- Face detector - http://www.mathworks.com/matlabcentral/fileexchange/36855-face-parts-detection

- Facial feature localization - http://www.robots.ox.ac.uk/~vgg/research/nface/

- http://www1.cs.columbia.edu/~belhumeur/journal/siggraph08.pdf
- http://www.eecs.harvard.edu/~kalyans/research/facereplace/VideoFaceReplace_SIGA11.pdf
- http://research.microsoft.com/pubs/69972/tr-2002-111.pdf
- http://cseweb.ucsd.edu/~ravir/papers/envmap/envmap.pdf

The quest for eternal glory continues...