Digital Makeup Face Generation
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Introduction
Make up applications offer photoshop tools to get users’ inputs in generating a make up face. While this has been a well established area of development, automatic transfer of make-up from a reference to a target image presents more challenges.

This project applies the make up from a reference image to a target by performing four main steps (1) Facial landmarks recognition (2) Facial alignment (3) Layer Decomposition (4) Transfer of face details, highlights and colors through each layer.

Methodology

Facial Landmark Recognition
- Active Shape Model

Facial Alignment
- Thin Plate Spline Warping

Layer Decomposition
- RGB to CIE Lab space
- Weighted least square
- Large
- Detail
- Color a, b

Make up Transfer
- Poisson Laplace editing
- Weighted Transfer
- Alpha blending

Work flow of Make up Transfer Model

Facial extraction
Facial extraction
Facial extraction
Facial extraction

Lightness
Large Scale
Detail

Color a
Color b

Weighted Transfer
Alpha Blending
Gradient Editing

Target
Reference
Target
Reference
Target
Reference

Results and Limitations

- Face contours, not due to make up, were transferred.
- Distortion of the reference image when warping.
- Needs frontal views with no facial expression.

References