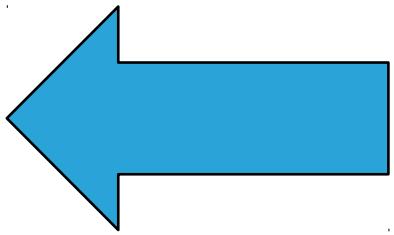
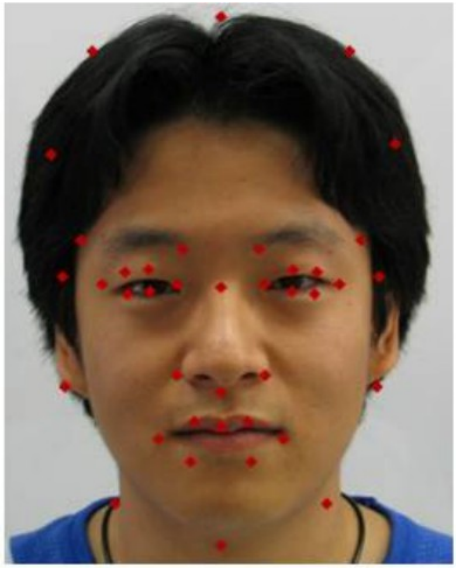
Face3D

Thomas Pinetz[1] and Harald Scheidl[2]

Motivation



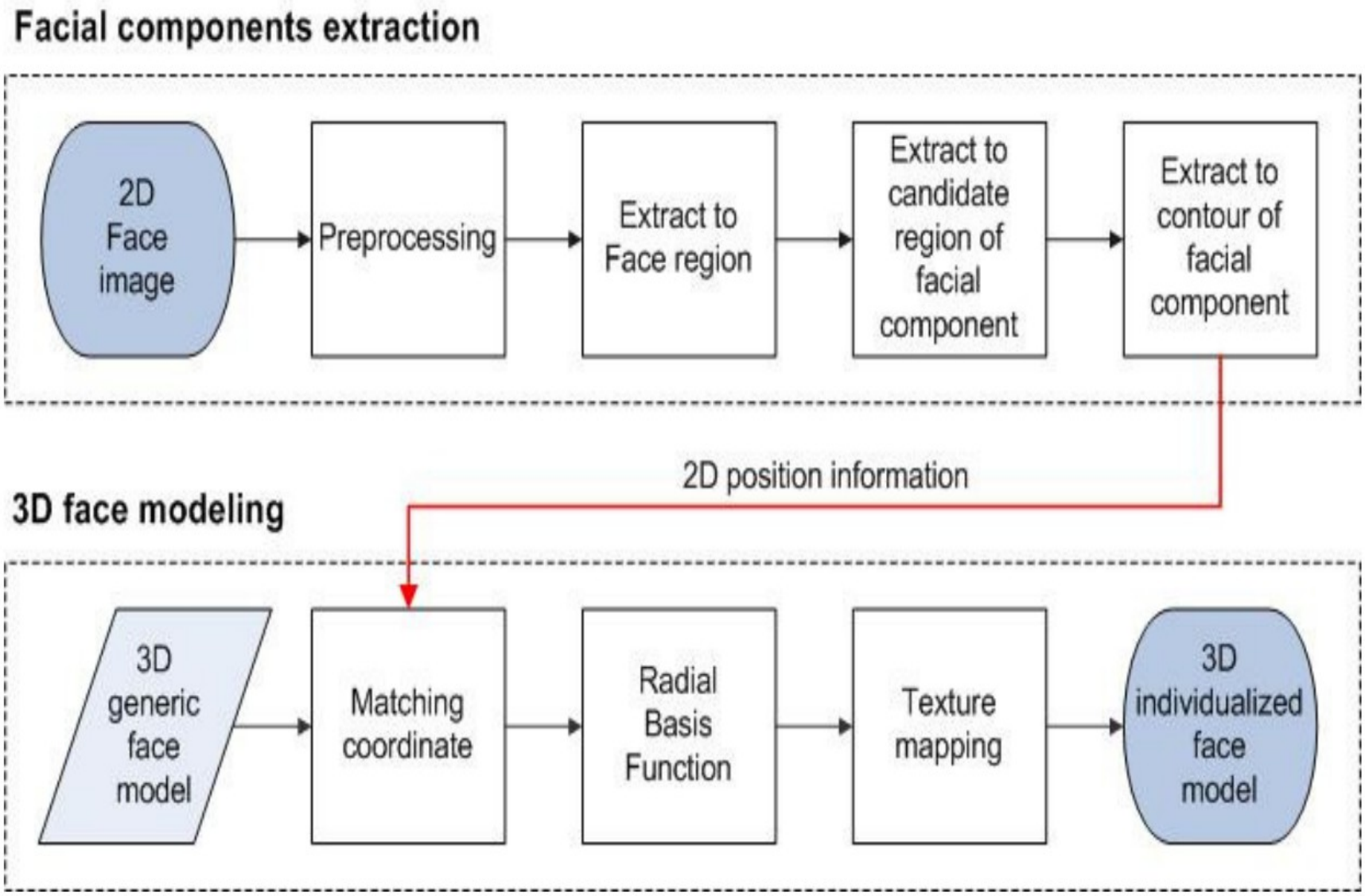


Introduction

- Used for plastic surgery or virtual Conference
- 3D Scanner
  - Expensive Equipment
  - No animation data.

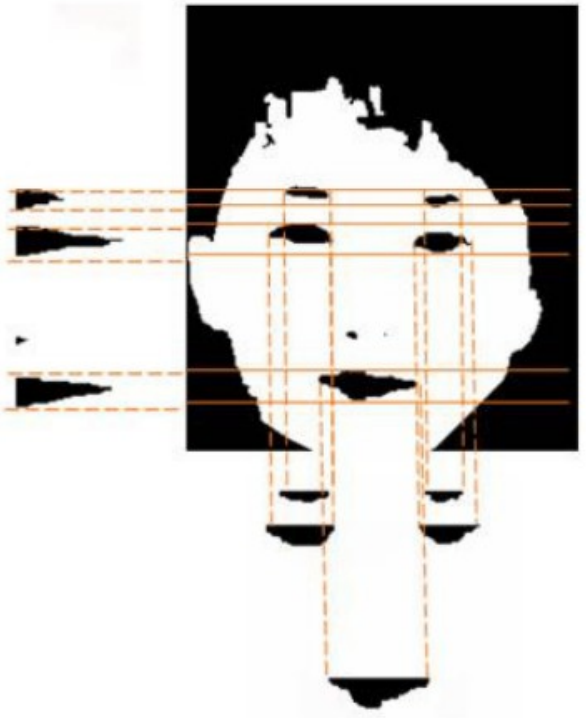
- Reconstruction from Stereo Images or videos
  - Non trivial.
  - No completely automatic way exists yet.

Pipeline


Facial components extraction
2D Face image
Preprocessing
Extract to Face region
Extract to candidate region of facial component
Extract to contour of facial component
2D position information
3D face modeling
3D generic face model
Matching coordinate
Radial Basis Function
Texture mapping
3D individualized face model

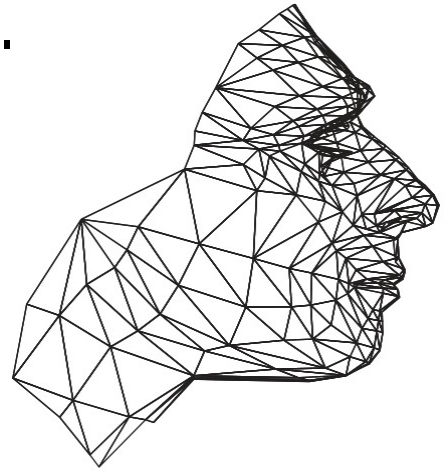
Facial components extraction

- Detection of skin according to colour
- Detection of countours and feature point detection
- Minimization of Error



3D face modelling

- Creation of generic Face Model
- Creation of Labels for Control Vertices
- Move Control Vertices to correct Position
- Texture Mapping of the Face Model.



Implementation

- Language: C++
- OpenCV for image processing
- OpenGL for rendering of the 3D face model
- MFC in case we need UI functionality
- Blender for generic 3D Model

Thank you for your Attention