Face Cloning Manual

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1. Program information:

Program name: FaceClone_UofOttawaDay2005
Author: Dr. WonSook LEE
Installation: copy the folder to c:\
Require: Coin3D 2.3.0
Main program: run face.exe

2. Program user manual:

2.1 Preprocess:

Take two pictures of the subject. Take one picture for front view and save it as <name_FV.jpg>; take the other for side view and save it as <name_SV.jpg>.

Notice:

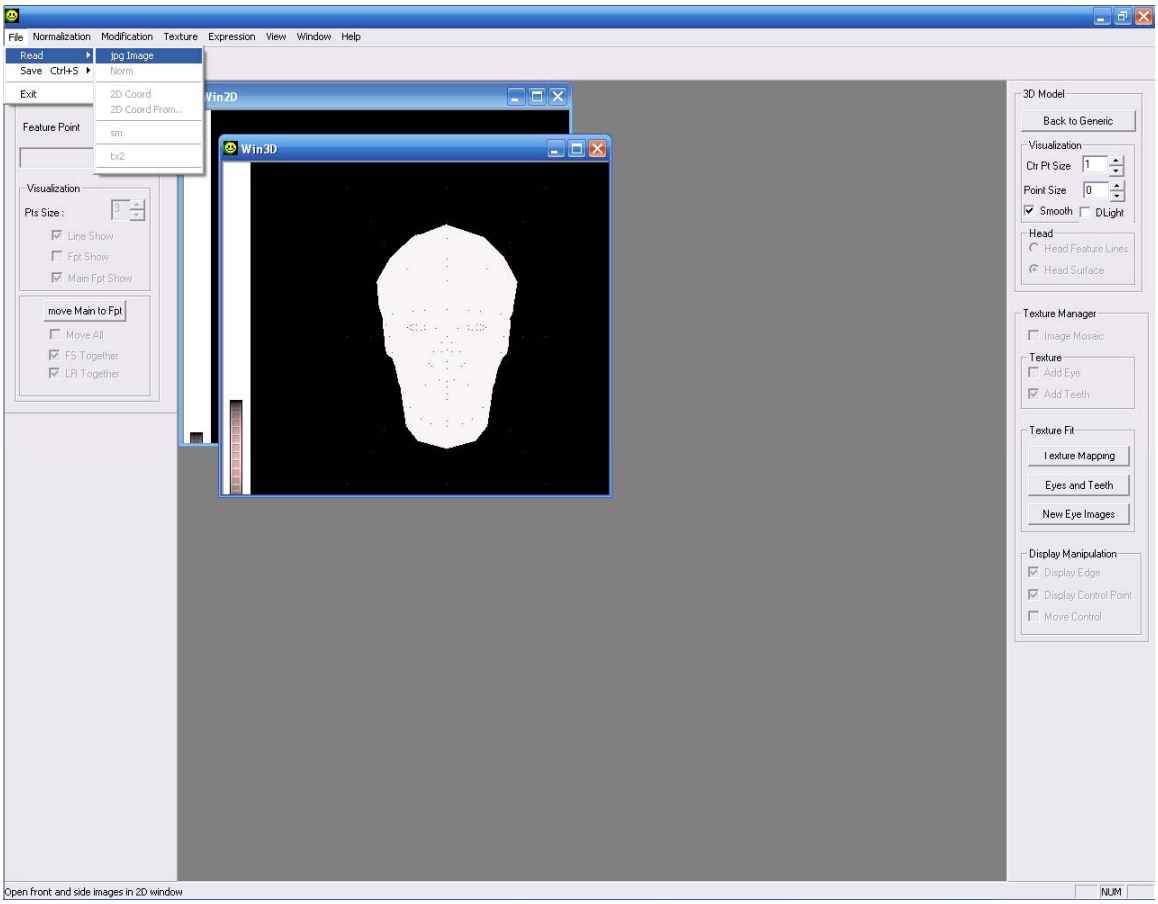
a) Better not to wear glasses

b) The model shall be close to the right edge of the photo when you are taking the picture of the front view. And the model shall be close to the left edge of the photo when you are taking the picture of the side view. That's to narrow the distance of the two subjects in the two views when you are processing both of them in a small window.

1) Copy the two pictures to pictureData.

2.2 Load images:

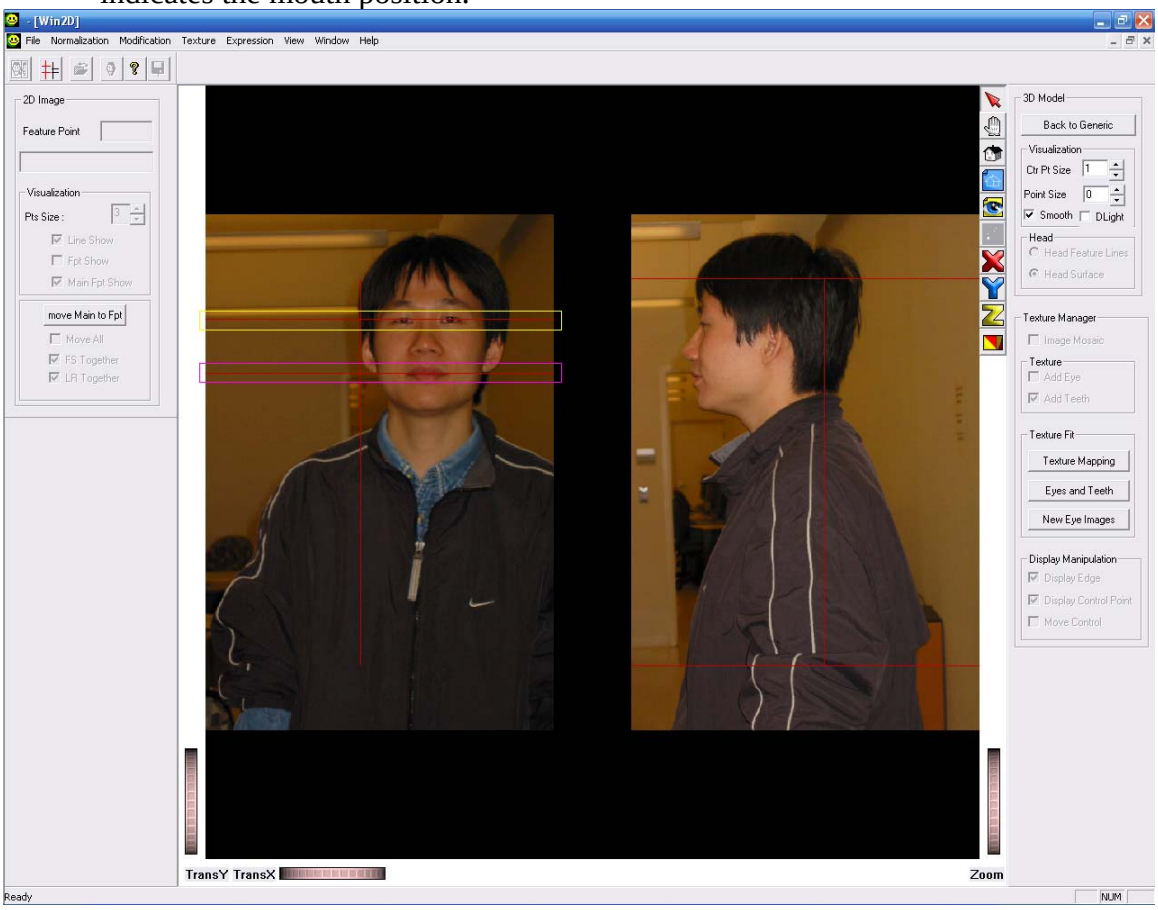
2) Run face.exe
3) Go to menu "File"->"read"->"jpg Image". And load one of the two images.


File Normalization Modification Texture Expression View Window Help
Read
Save Ctrl+S
Exit
jpg Image
Norm
2D Coord
2D Coord From..
sm
tx2
Win2D
Win3D
Feature Point
Visualization
Pts Size :
Line Show
Fpt Show
Main Fpt Show
move Main to Fpt
Move All
FS Together
LR Together
3D Model
Back to Generic
Visualization
Ctr Pt Size
Point Size
Smooth
DLight
Head
Head Feature Lines
Head Surface
Texture Manager
Image Mosaic
Texture
Add Eye
Add Teeth
Texture Fit
Texture Mapping
Eyes and Teeth
New Eye Images
Display Manipulation
Display Edge
Display Control Point
Move Control
Open front and side images in 2D window
NUM

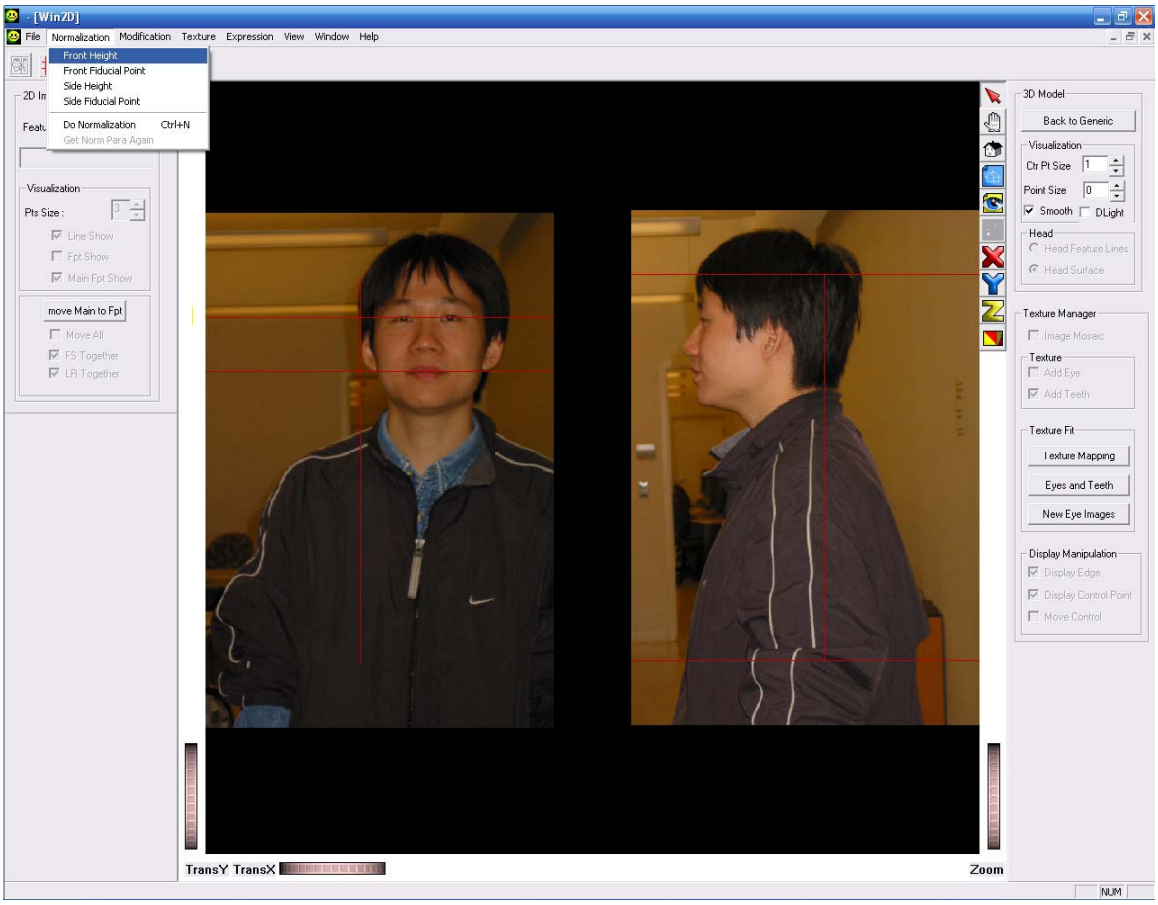
[Win2D]
File Normalization Modification Texture Expression View Window Help
2D Image
Feature Point
Visualization
Pts Size :
Line Show
Fpt Show
Main Fpt Show
move Main to Fpt
Move All
FS Together
LR Together
3D Model
Back to Generic
Visualization
Ctr Pt Size
Point Size
Smooth
DLight
Head
Head Feature Lines
Head Surface
Texture Manager
Image Mosaic
Texture
Add Eye
Add Teeth
Texture Fit
Texture Mapping
Eyes and Teeth
New Eye Images
Display Manipulation
Display Edge
Display Control Point
Move Control
TransY TransX
Zoom
Ready
NUM

2.3 Save 2D coordinates of face features:

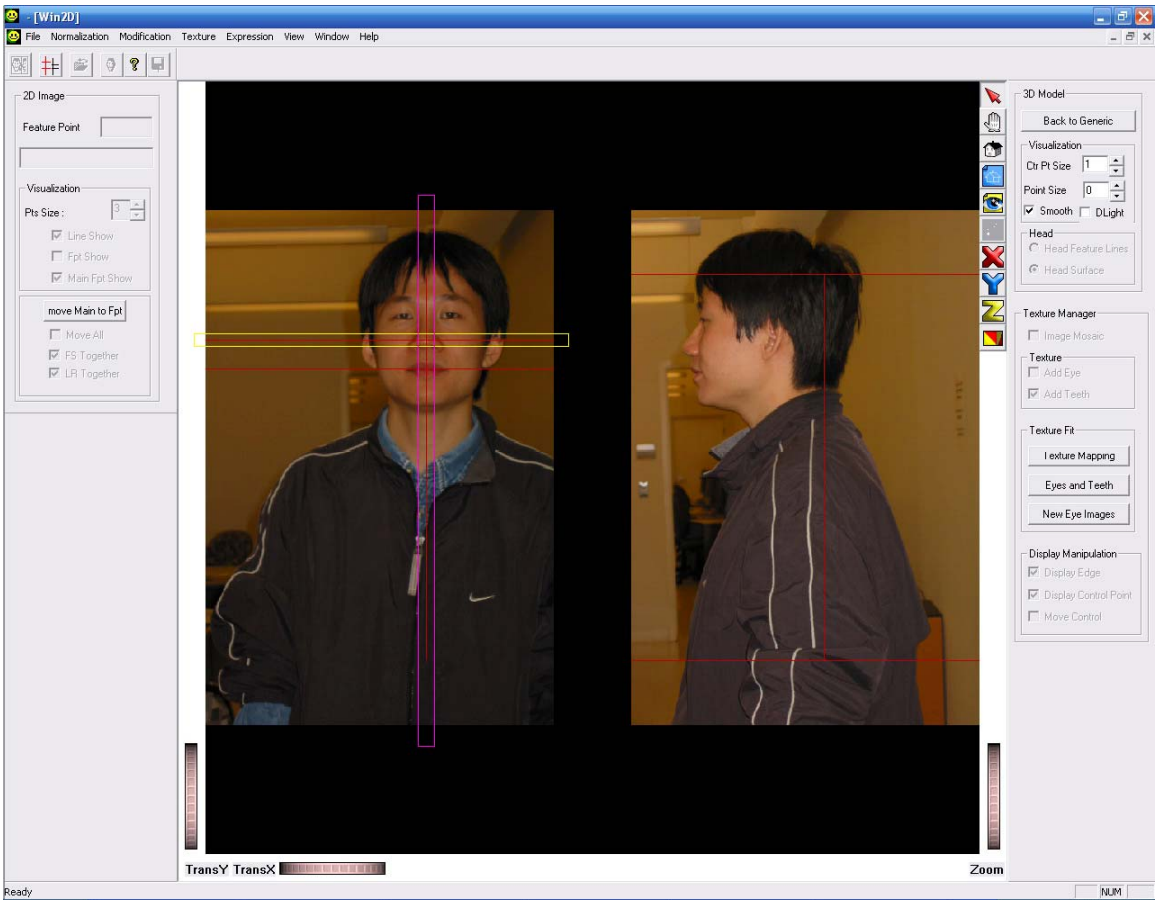
4) In front view: use the lines to indicate the eyes position and the mouth position. The upper line, in yellow, indicates the eyes position; the lower line, in purple, indicates the mouth position.



5) Go to menu “Normalization”->”Front Height”. Click “Front Height” to record the lines.



6) Use the lines in the front view to indicate the nose position. The upper line, in yellow, and the vertical line, in purple, indicates the nose position.



7) Go to menu “Normalization”->”Front Fiducial point”. Click “Front Fiducial point” to record the lines.

8) In side view: use the lines to indicate the eyes position and the mouth position. The upper line, in yellow, indicates the eyes position; the lower line, in purple, indicates the mouth position.

9) Go to menu “Normalization”->”Side Height”. Click “Side Height” to record the lines.

10) Use the lines in the front view to indicate the nose position. The upper line, in yellow, and the vertical line, in purple, indicates the nose position.

11) Go to menu “Normalization”->”Side Fiducial point”. Click “Side Fiducial point” to record the lines.

12) Go to menu “Normalization”->”Do normaliztion”. Click “Do normaliztion” to process the feature points.

14）After the process, we can have an initial feature points and lines which matches the face.

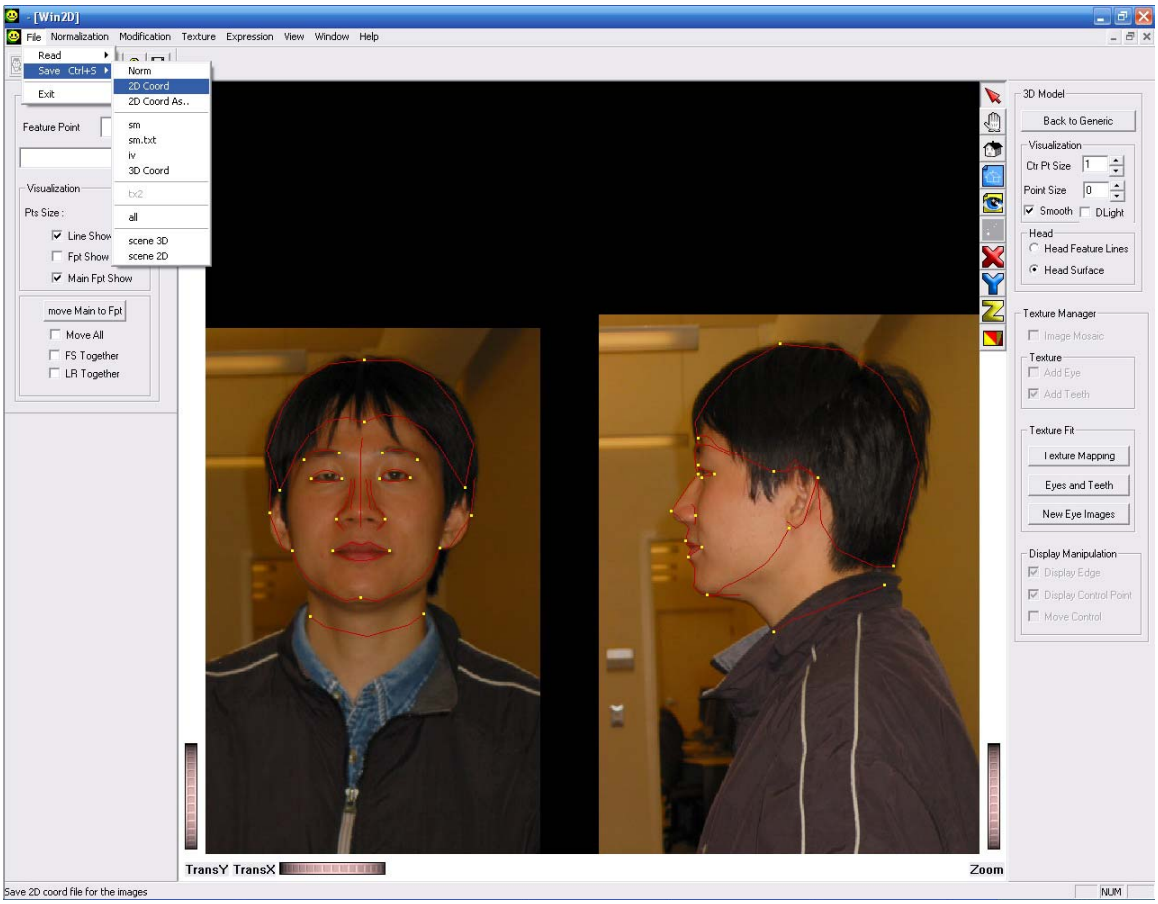
13) Manually adjust the point to the right place.

First adjust the yellow points in the side view. Don't miss the points of the eyebrow and the nose;

Then uncheck the "FS Together" check box and adjust the yellow points in the front view. The modification will not influence the points in side view;

Then uncheck the "LR Together" check box and adjust the yellow points in the left side and right side in the front view properly.

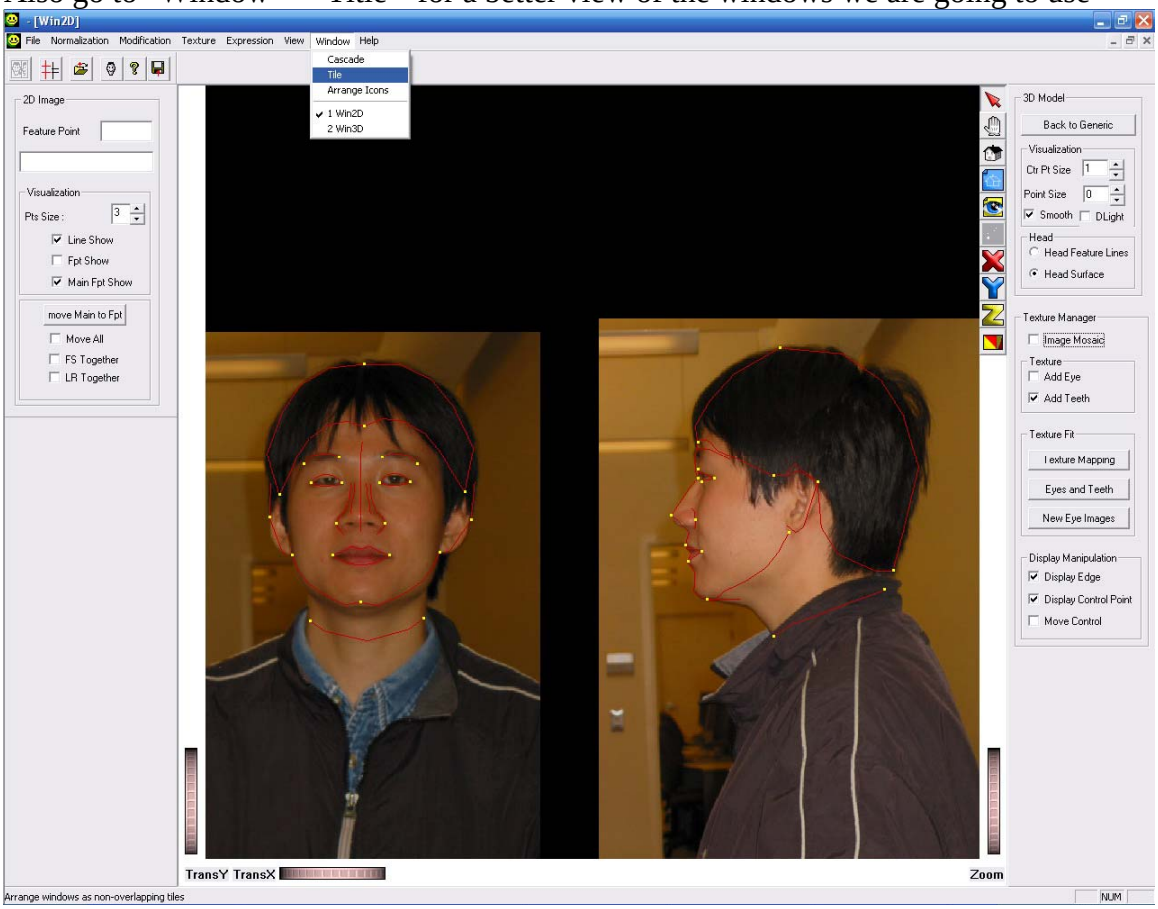
14) Then goto "Modification" -> "Feature Modification". Remember to save the coordinates of those points through “File” -> “save” -> “2D Coord”. The save step is optinal.


[Win2D]
File Normalization Modification Texture Expression View Window Help
Read
Save Ctrl+S
Exit
Norm
2D Coord
2D Coord As..
sm
sm.txt
iv
3D Coord
tx2
all
scene 3D
scene 2D
Feature Point
Visualization
Pts Size :
Line Show
Fpt Show
Main Fpt Show
move Main to Fpt
Move All
FS Together
LR Together
3D Model
Back to Generic
Visualization
Ctr Pt Size
Point Size
Smooth
DLight
Head
Head Feature Lines
Head Surface
Texture Manager
Image Mosaic
Texture
Add Eye
Add Teeth
Texture Fit
Texture Mapping
Eyes and Teeth
New Eye Images
Display Manipulation
Display Edge
Display Control Point
Move Control
TransY TransX
Zoom
Save 2D coord file for the images
NUM

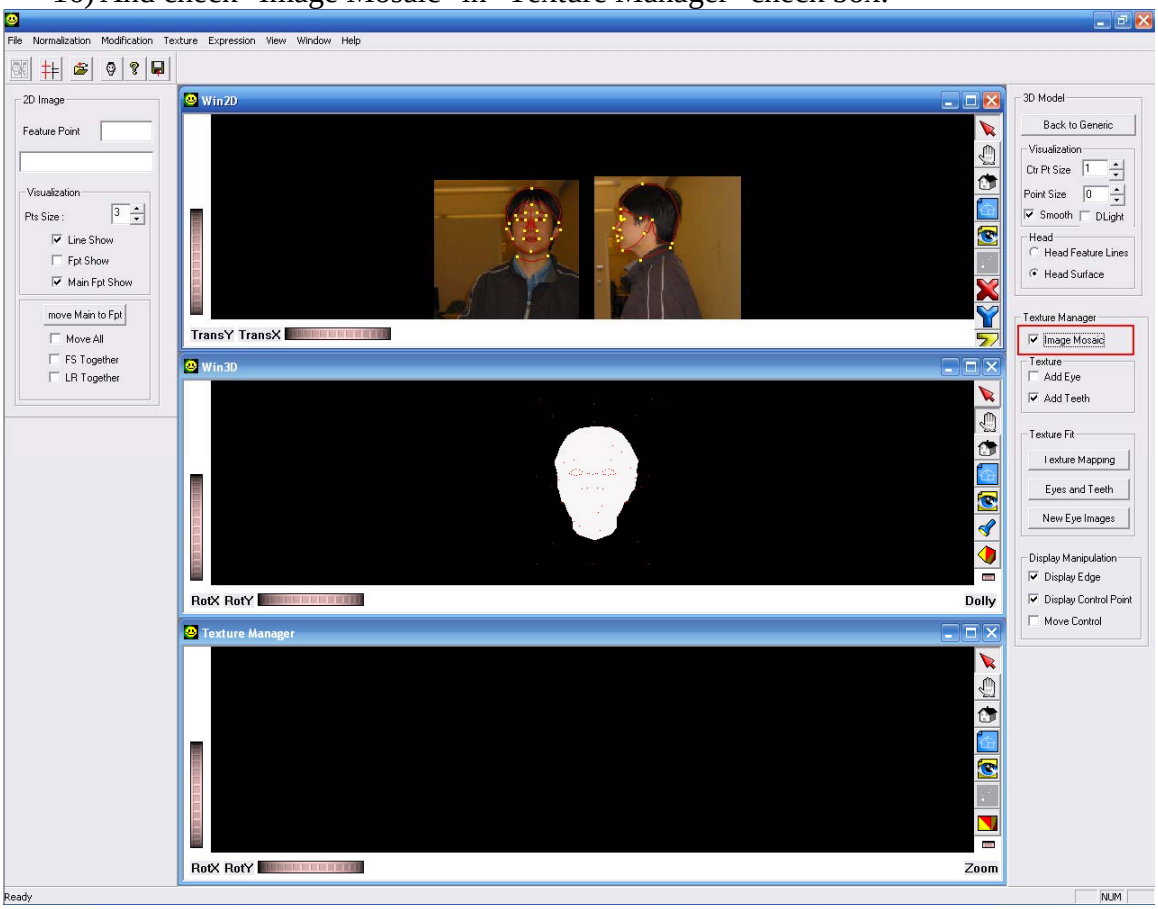
2.4 Build the 3D model

15) And do the "Texture" - >"Texture Fitting Window". The GUI elements on the side panel will be enabled.

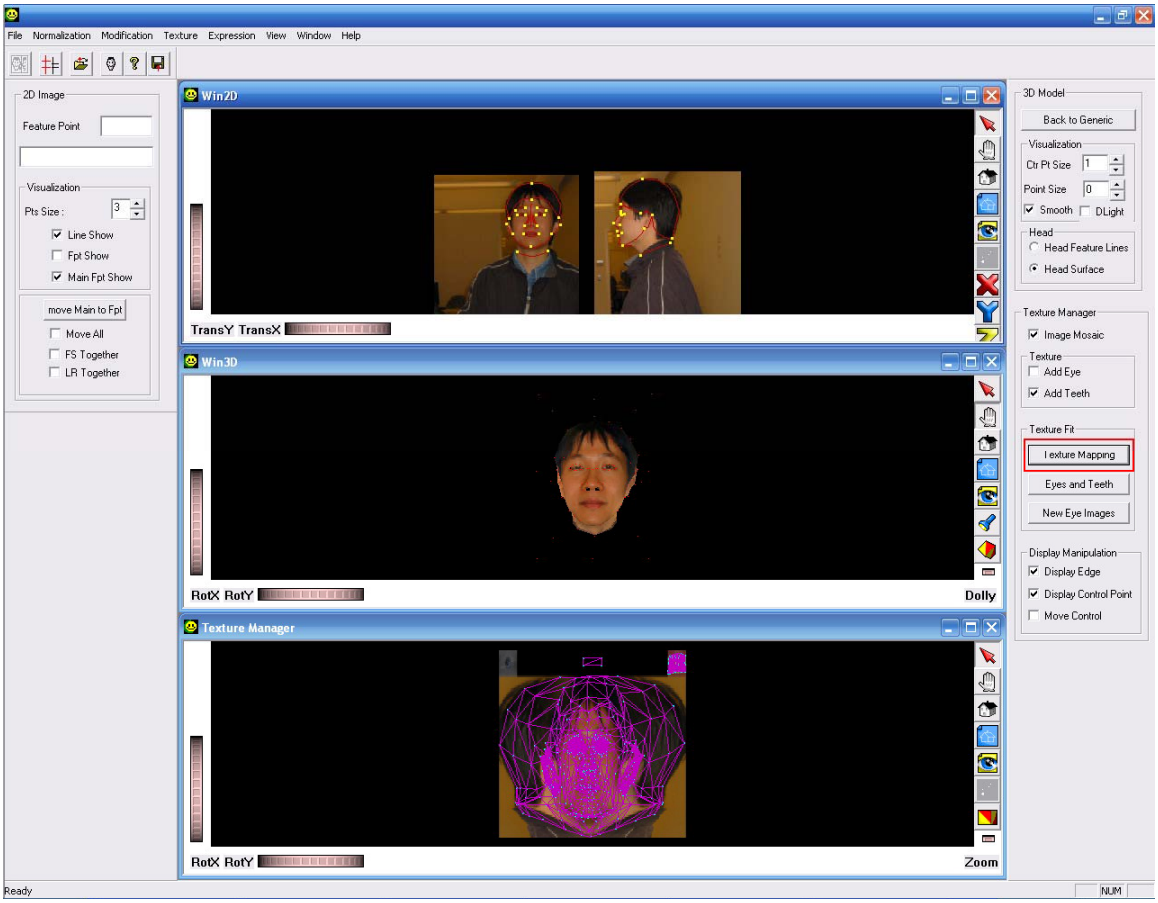
Also go to “Window”->”Title” for a better view of the windows we are going to use



16) And check "Image Mosaic" in "Texture Manager" check box.

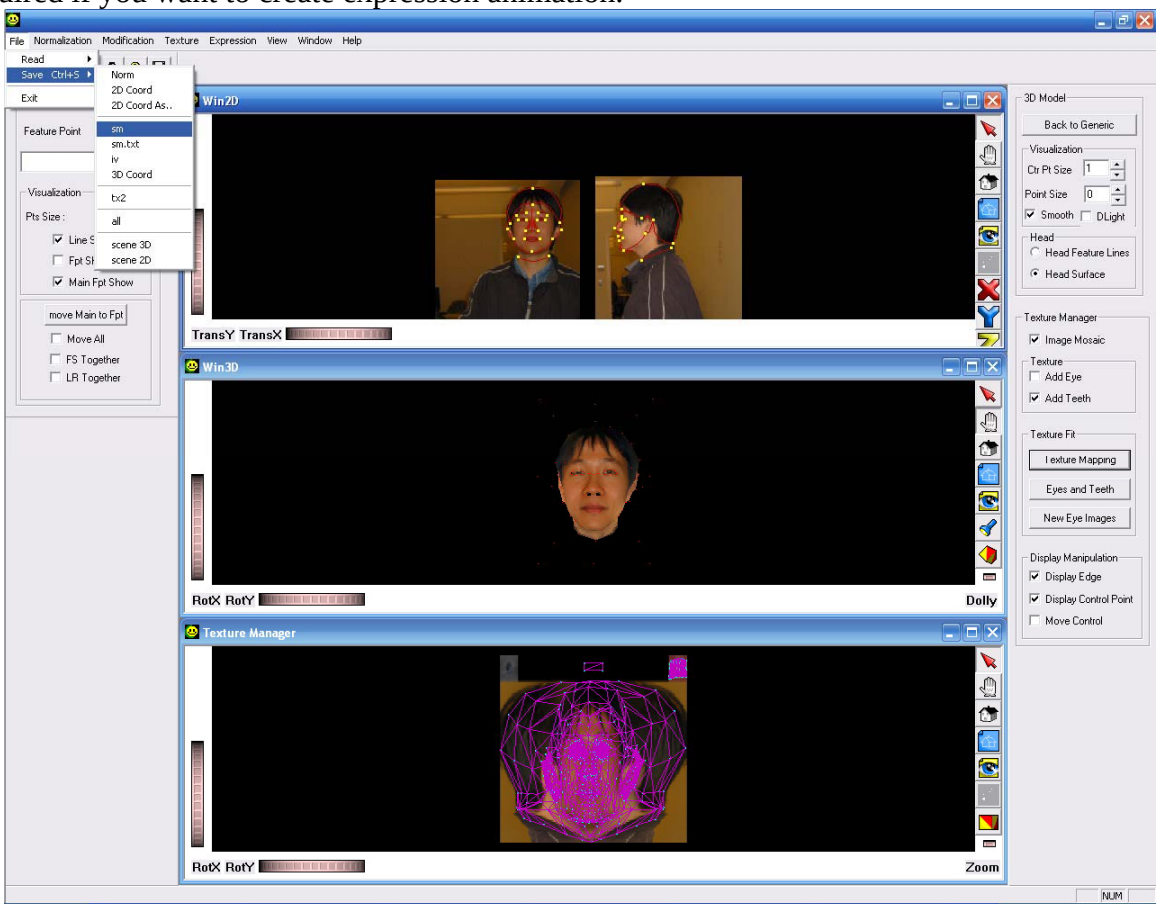


17) Click "Texture Mapping" in "Texture Fit".



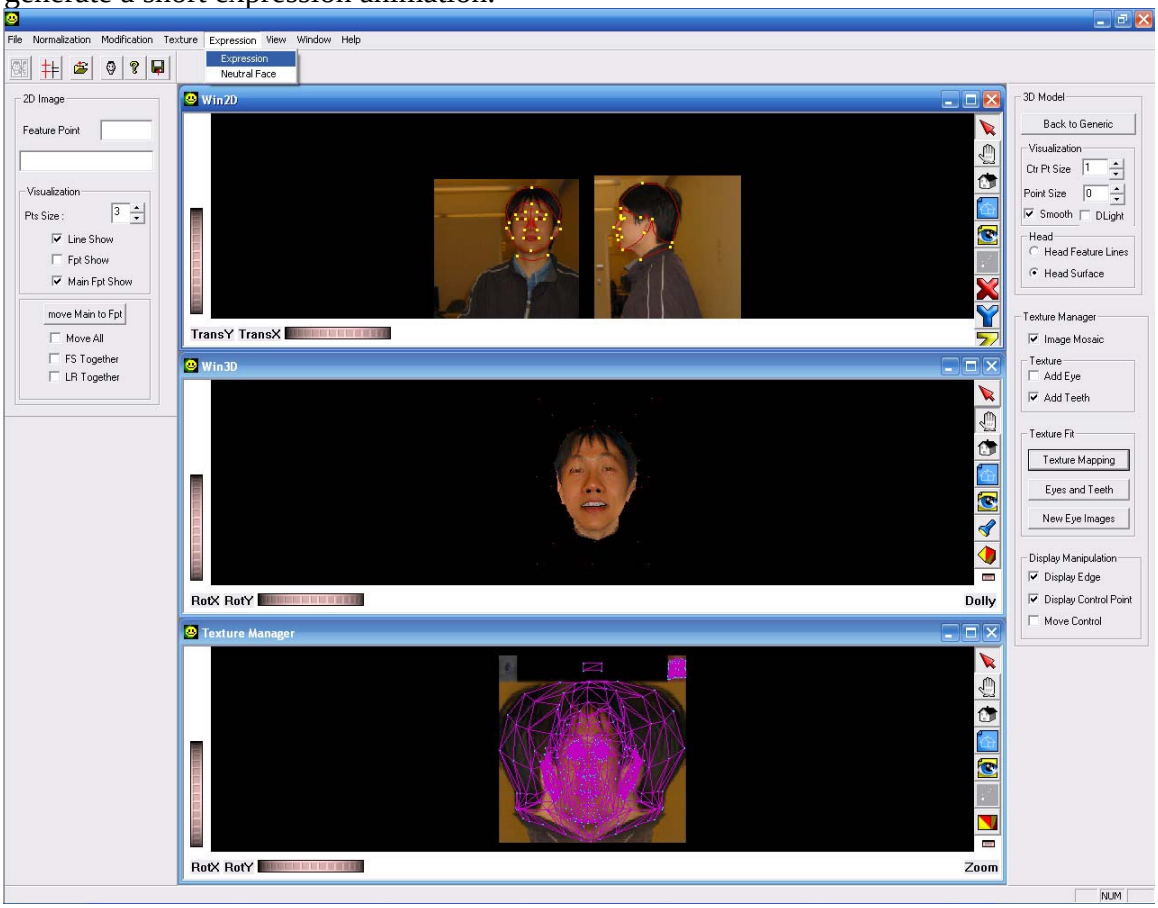
18) Then we can get a 3D model with texture.

Remember to save the model through “File” -> “save” -> “sm”. This save step is required if you want to create expression animation.

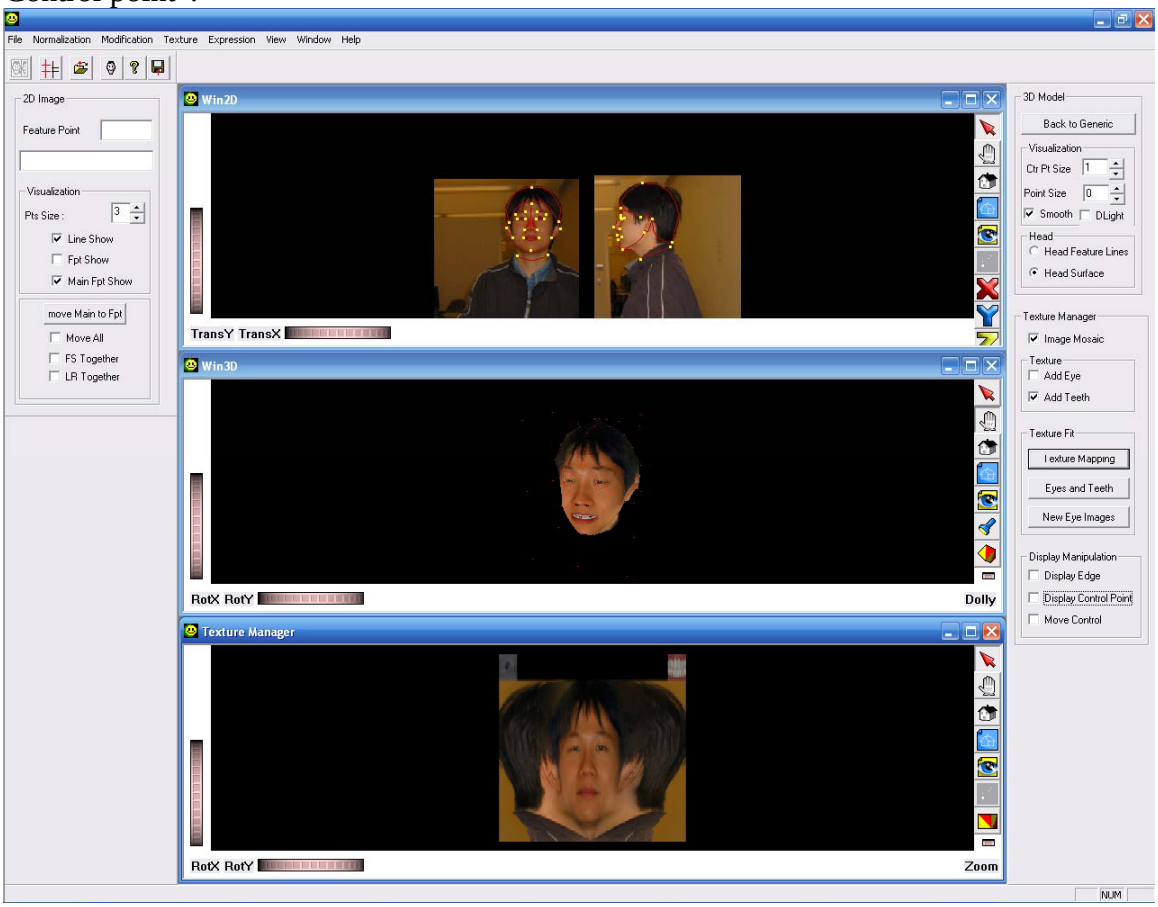


2.5 Expression animation

20) If you want to do the expression animation, click “Expression” -> “Expression” to generate a short expression animation.

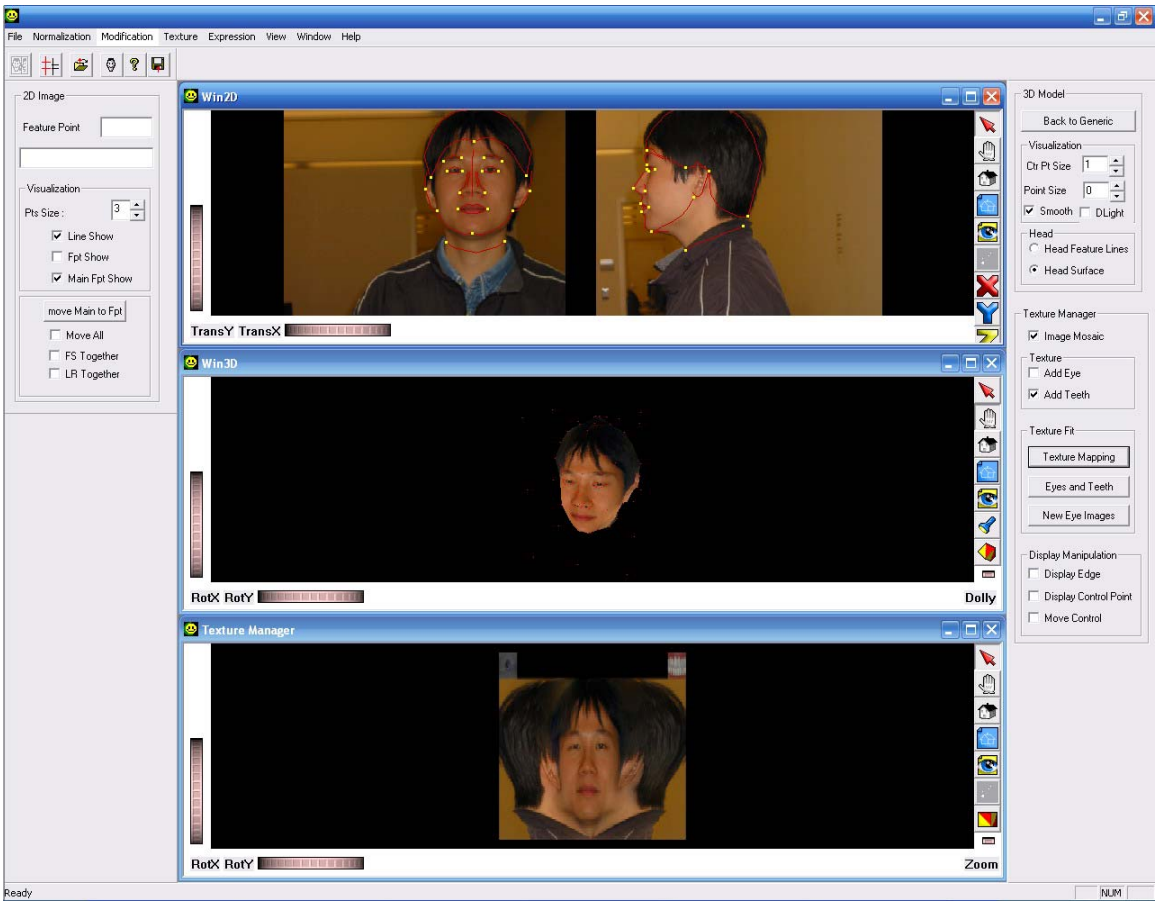
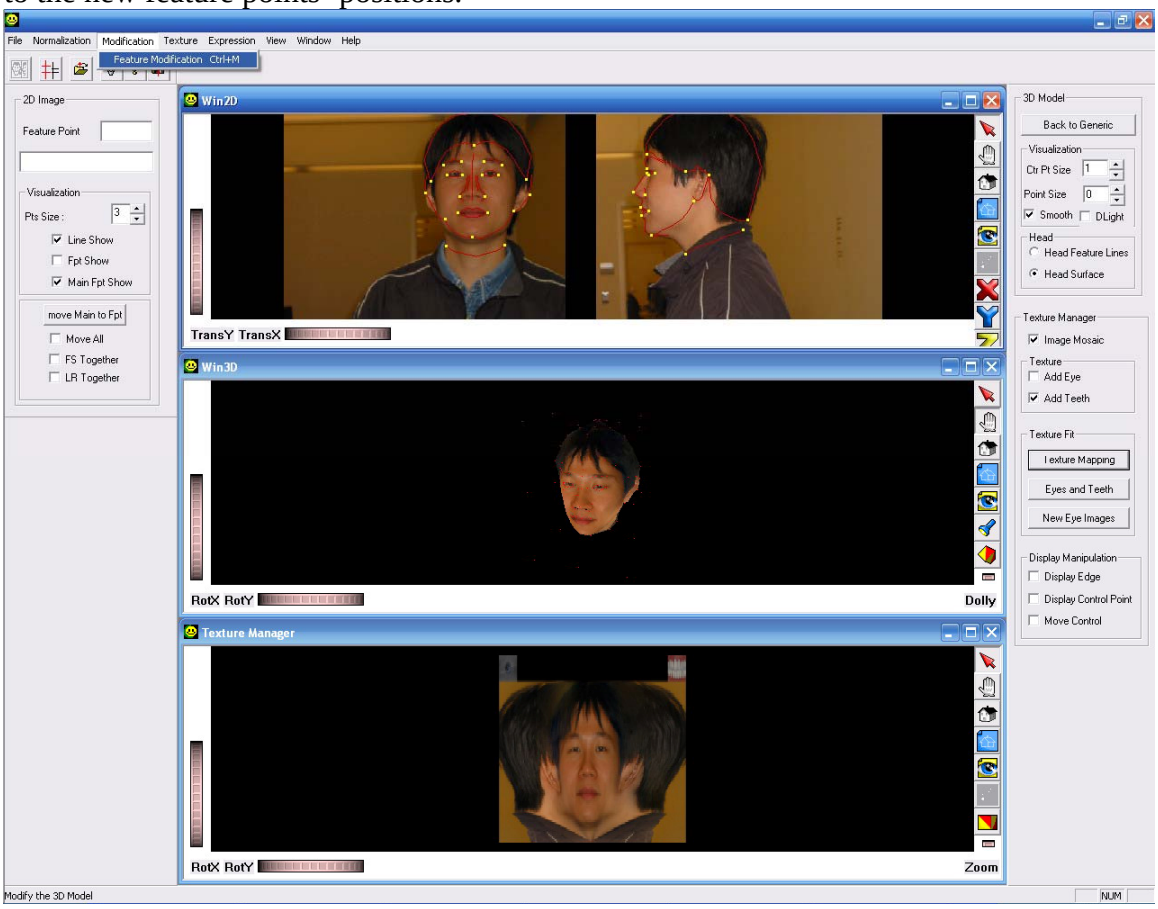


To view the texture map better, you can uncheck the “Display edge” and “Display Control point”.



2.6 Reshape 3D model

22) If the model needs to be improved, you can go to the pictures and adjust the points in “Win2D” window. Every time after you made adjustments, you need to click "Modification" -> "Feature Modification" to apply the changes. And also save “sm” again for animation.



After you adjusted the point(s) and clicked "Modification" -> "Feature Modification" to apply the changes, you can find the shape is properly changed according to the new feature points' positions.