

Faceware: Basic Workflow

By Sorya Sean Serei



Camera Setup:

Note:

- This is a homemade facial capture helmet.
- Any camera can be used when recording the Actor's face.
- The camera I am using is a Go Pro Hero 3 White Edition

Make sure the camera is properly align with the actors face so you have a clear viewing

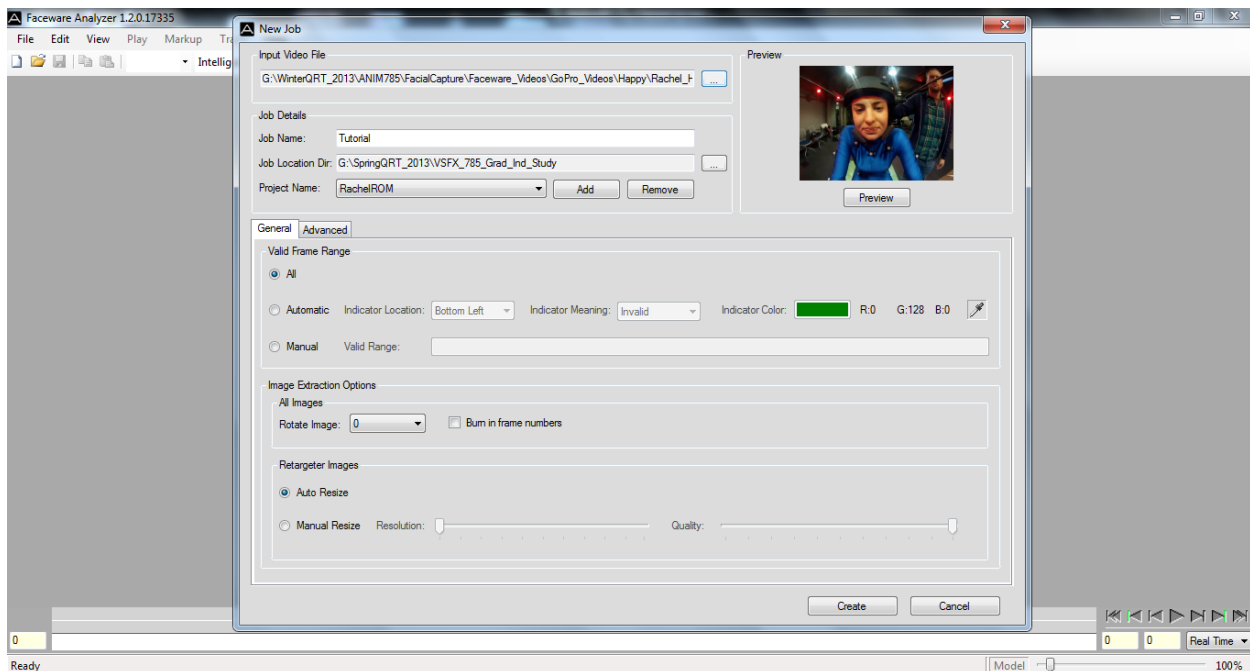


If you have a tablet or a smart phone that can pick up Wi-fi or Bluetooth, you can download the free app from the Go Pro website so that you can remotely control the camera from a distance and view the live streaming.

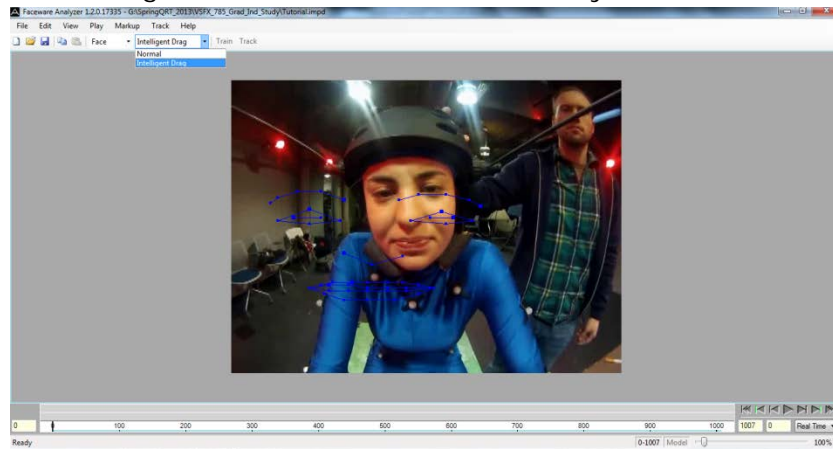
Faceware Analyzer:

“Analyzer allows you to feed in a video of an actor’s facial performance and produce an IMPD file for use in Retargeter. It accomplishes this through the combination of simple user input on the front end, and complex computer vision algorithms on the back end. The user “trains” Analyzer to learn about the actor’s specific appearance and performance, and the software uses that information to analyze every frame of the video. Once the shot is tracked, parameterizing the data will use computer vision technology to examine every pixel of facial data in the performance and create an IMPD.” – Faceware.com

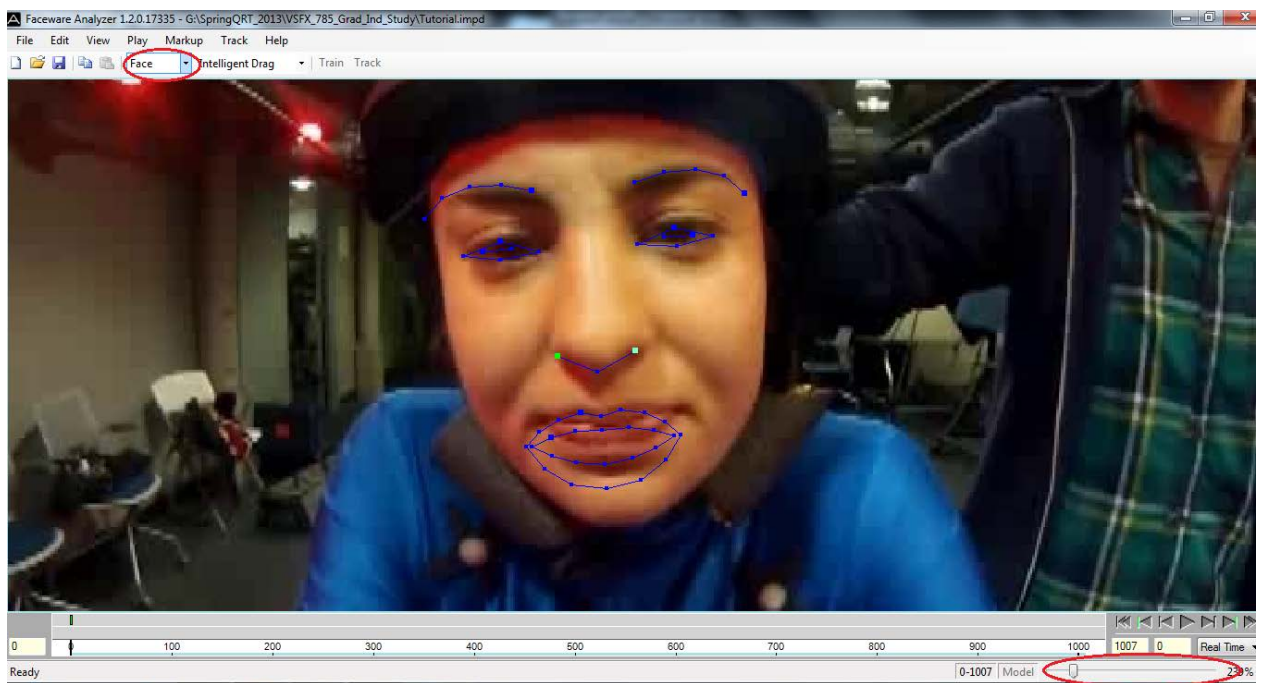
1. After Recording, open up Faceware Analyzer.
 - File → New
2. A “New Job” window will open up.
 - In the “Input Video File” : Locate your videos that you recorded
 - In “Job Name”: Name whatever your impd scene file will be
 - In “Job Location Dir”: Set your impd file project location
 - In “Project Name” → Add: Create project folder name
 - If your image is not right-side up, select “Rotate Image”
 - Click “Create”
 - It will create a new Job but the process depends how long your video is.



3. Make sure that "Intelligent Drag" is on.
 - Intelligent drag: move one marker and influences the others
 - Normal drag: moves each marker individually



4. You can zoom in by using the slider located at the bottom right hand corner.
 - You can also use the
5. Located next to the intelligent drag on the top tool bar, you can isolate what markers can be used during your tracking.
6. Let's start with the nose as it will be the main focus and origin for tracking the face.
 - Using intelligent drag, move the end markers to the tip of each nostrils
 - It will automatically keyframe in the time line
7. Best method is to start with the Brows, then Eyes and then the Mouth. Mouth will be the hardest to track.



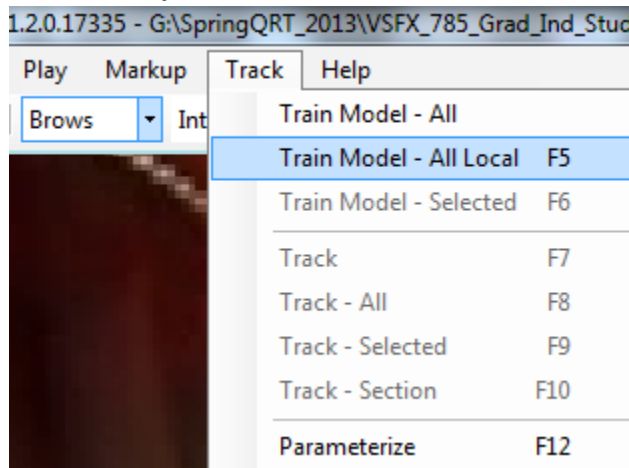
8. Find extreme movements as analyzer can calculate the ROM of the video.



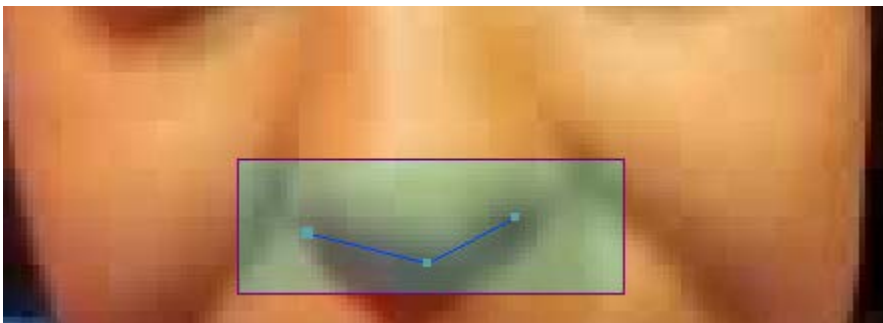
9. Using about 3 to 5 frames (up to you) , locate the track menu and select “Train Model –All(All Local)” Or just click F5.

10. After the Training Process, now select “Track” or F7.

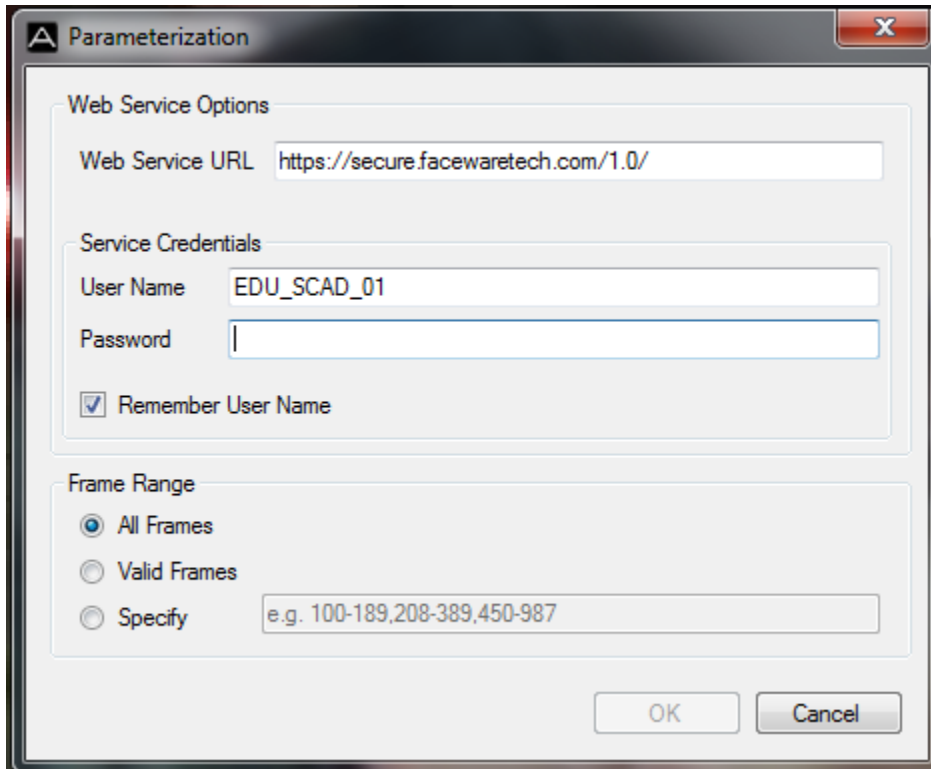
11. Now review your timeline and video to make sure that your tracks look good. If not, you can tweak and adjust the markers on the frame that doesn't look right and repeat step 9 & 10.



12. Now highlight the nose and press “Ctrl L” to lock the nose position. This will prevent the nose from moving when tracking the eyes and mouth. To unlock press “Ctrl L” again.



13. Repeat the steps for eyes and mouth.
14. Press F12 to "Parameterize" the impd. This will allow us to use the impd for the Retargeter software. (think of it as an export)
15. For education use, SCAD is allowed to use the software for free. If we didn't the school would be charged and billed for each capture.
 - SEE EITHER ME OR PROFESSOR FOWLER FOR PASSWORD



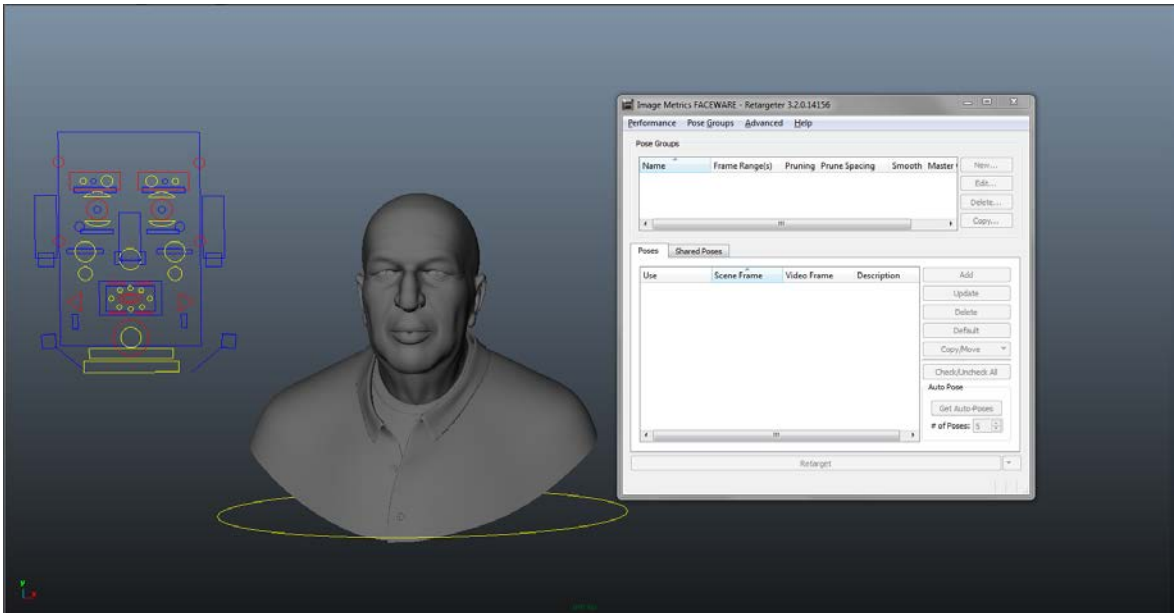
16. After you parameterization, go to file and click save.
 - Note: you cannot increment save. Remember save often

[Faceware Retargeter \(3.2.0\): \(4.0 soon to come \[April 2013\]\)](#)

"Faceware Retargeter utilizes the facial tracking data created in Analyzer and creates high-quality facial animation very quickly. By plugging into Autodesk Maya, 3DS Max, Motionbuilder, and Softimage, Retargeter combines the video performance of an actor and the artistic hand of an animator to set keyframes on *your* facial rig." – Faceware.com

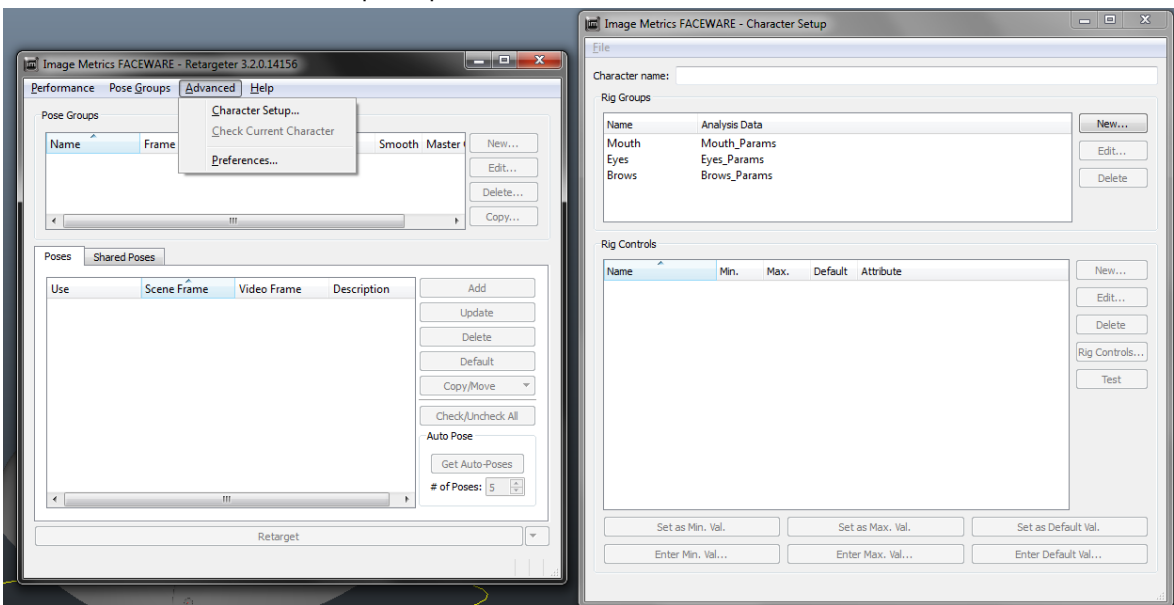
17. Install the retargeter plugin to any of the 3d packages (Maya, Motion Builder, Softimage, 3dsMax)
 - We will focus on Maya 2013
 - Go to you plugin manager and turn on ImRetargetMaya.mll
18. Open up the Image Metric tab located in Maya tab bar.
 - Retargeter will open up a window.

19. Have a facial rig with a GUI as we need to convert it to an XML format.



20. Go to the "Advance" and click "Character Setup"

- Another window will open up

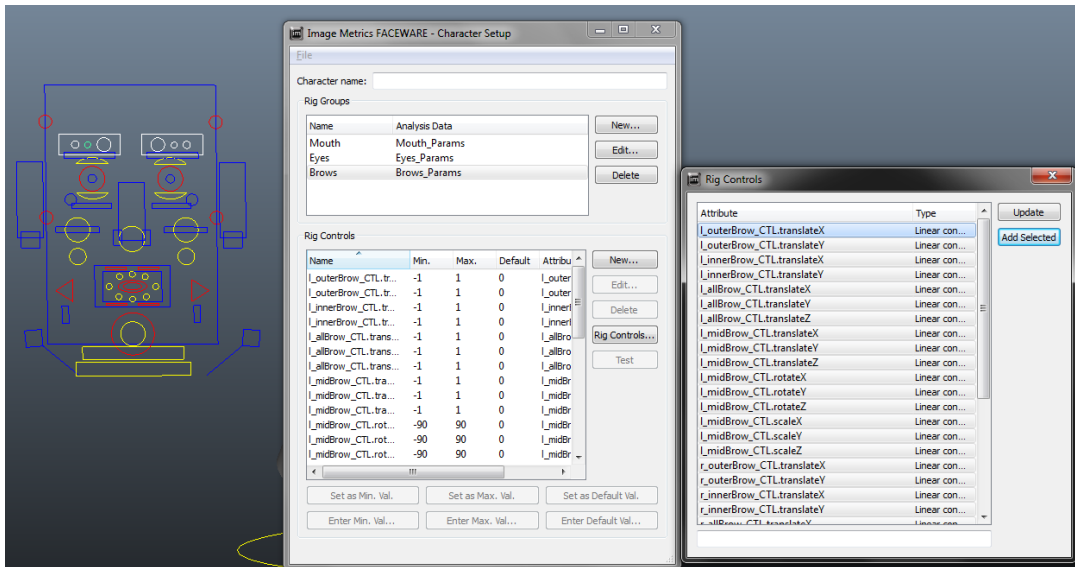


21. In the new window go to file and click New.

- Mouth Eyes and Brows should appear.
- In Character Name: name your mesh

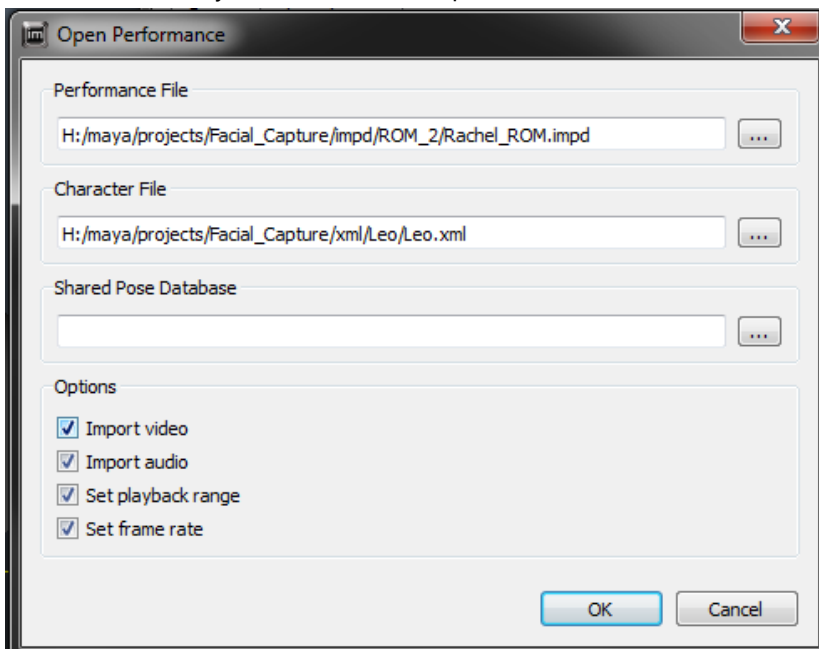
22. It's time to group your GUI.

- Click on Select Brows → click Rig control (new window) → Highlight your Rig that's design on influence that group → click "Update" → click Add Selected → Repeat for Eyes and Mouth
- You can actually make sub groups. i.e cheeks under the mouth group
 - i. Click "edit" → name your new group
- Go to File in the Character Setup Window and hit Save.

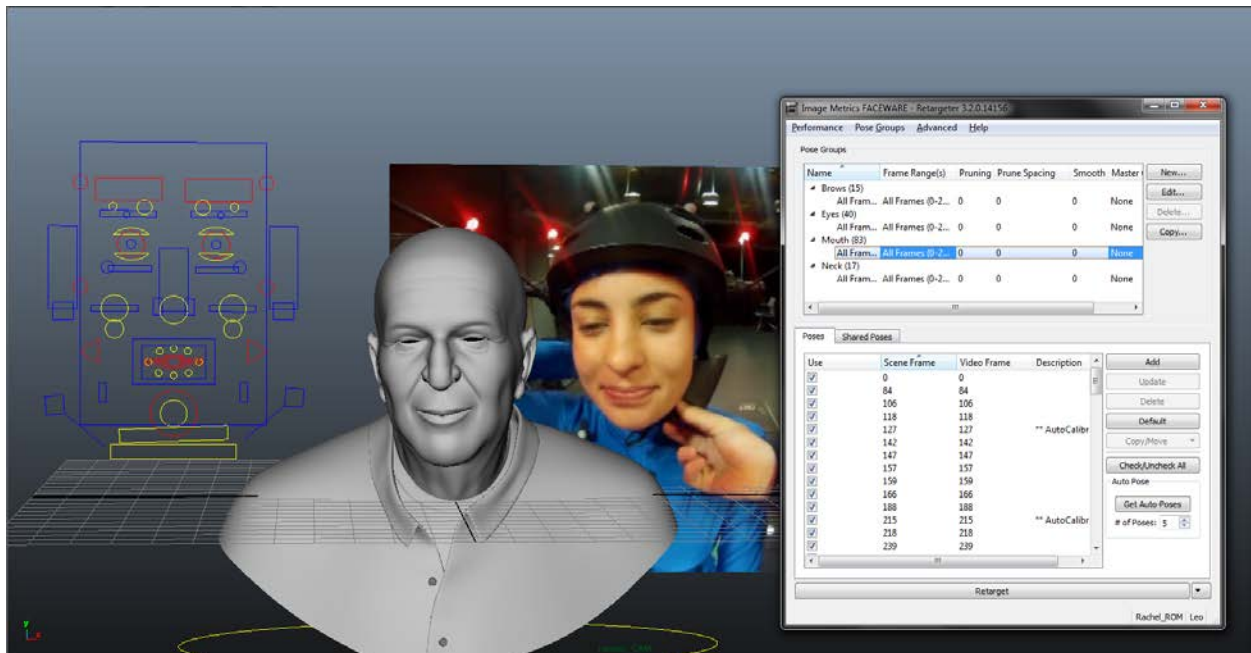


23. Go to the Original Window, click Performance and click Open

- Performance File: Locate your impd
- Character File: Locate your XML
- Check Import Video and if you have sound import Audio
- It will ask you for select share pose, click Cancel



24. Now the process will be similar to Analyzer but this time, it will be more tedious.
25. Scale up your reference Video to match the size of your mesh so that you can see the expression better
26. In the Image Metric Window, click any of the groups. Let's start with mouth.
 - Click Auto pose, it will give you 5 keyframes
 - Using those 5 keyframe you need to tell Retargeter the ROM of your mesh by manually matching those 5 different key frames to the picture by clicking Update for each frame.
 - Once that's done click Retarget. This will keyframe and track the entire timeline.
 - If the mouth doesn't look right, find the incorrect frame, manually match it to the image reference and click Update and Retarget again. (At this point you're kind of animating)
 - Once that's done repeat the steps for the other groups and subgroups.



For more information go to http://www.facewaretech.com/support/wiki/Main_Page