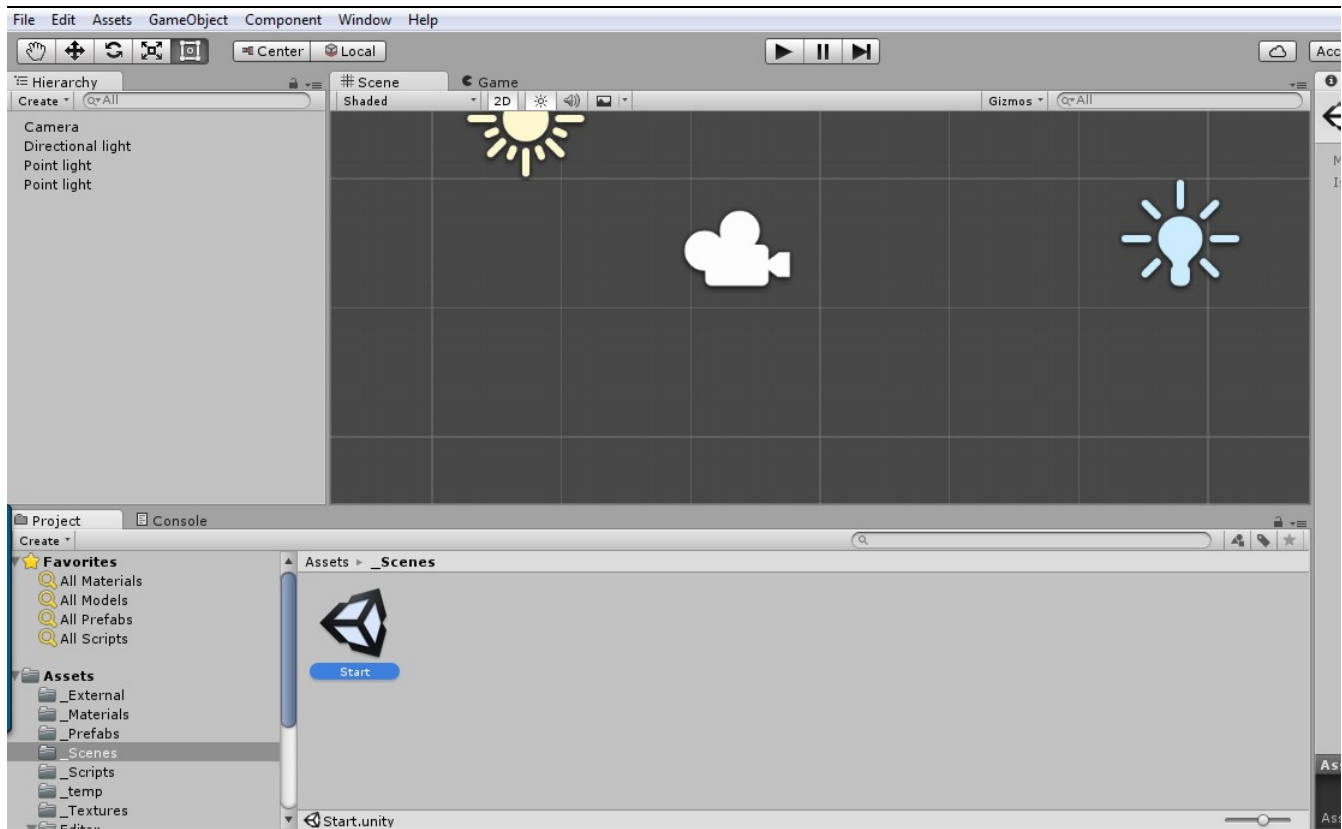# Introduction

NaturalFront™ 3D Animation Plugin is an innovative plugin that focuses on one of the most challenging tasks in 3D industry – 3D facial animation.

New to this version

Improvements:

- NaturalFront Free-version for .NET 4.x (default .NET version of Unity 2018.3) released.

Benefits

- The animation will be successful the first time and every time, without any manual intervention from you. This is **drastically different from conventional trial-and-error** that is unavoidably caused by rigging and creating morph targets.
- The unique 1-Click Animation technology enables you to **instantly** get animation you want, **without any need for rigging, morphing, key-framing or motion capture**. All you need to do is one-mouse-click.
- Since the technology is patented and NaturalFront is currently the only patent assignee, the substantial benefits cannot be found in any other legal software.

This software allows professionals, freelancers, hobbyists and beginners to create high-quality 3D facial animation in a tiny fraction of time and cost that would be needed by using other software, since the plugin uses a highly innovative technology. By using the new technology, animation studios and freelancers can **substantially save the cost and shorten the time** for creating high-quality expressive 3D characters, and, by doing so, enjoy a substantial competitive edge.

System Requirements

- Unity 2018.3 or above
- Desktop Microsoft Windows 64-bit

Download Plugin

NaturalFront 3D Facial Animation Plugin should be found in Unity Store pending Unity approval.

Package Contents

NaturalFront 3D Facial Animation Plugin package is at:

Assets\NF3DFaceAnimFree50Win

This package contains the following contents:

Name	Date modified	Type	Size
_CfgDat	19/01/2016 5:22 AM	File folder	
_External	19/01/2016 5:22 AM	File folder	
_FitDat	19/01/2016 5:22 AM	File folder	
_Materials	19/01/2016 5:22 AM	File folder	
_Prefabs	19/01/2016 5:22 AM	File folder	
_Scenes	19/01/2016 5:22 AM	File folder	
_Scripts	19/01/2016 5:22 AM	File folder	
_temp	19/01/2016 5:22 AM	File folder	
_Textures	19/01/2016 5:22 AM	File folder	
documentation	19/01/2016 5:22 AM	File folder	
Editor	19/01/2016 5:22 AM	File folder	
PluginTools	19/01/2016 5:22 AM	File folder	
Resources	19/01/2016 5:22 AM	File folder	
SoundManager	19/01/2016 5:22 AM	File folder	
readme.txt	12/01/2016 11:45 AM	Text Document	1 KB

Installation

1. Sign In to Unity 3D software.
2. Under **File** menu, click **Open Project**.
3. Select **Open**.
4. Locate NaturalFront 3D Facial Animation Plugin folder on your computer.
5. Click **Select Folder**.

Projects   Getting started   NEW   OPEN

Unity Plugin
G:\Unity 3D
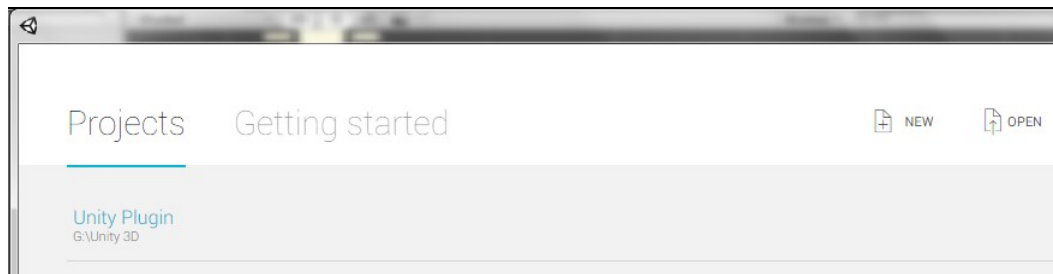
All package contents will be imported in your Unity 3D project and you're ready to start bringing a 3D face to life!

Features

Features available in the Free-version

- Realistic 3D heads that resemble whatever person on a photo, including both geometry and texture.
- Extremely fast and simple modeling and animation, without any need for rigging, morphing, key-framing or motion capture.
- Realistic and wide-range of facial expressions.
- Realistic and wide-range of mouth-shapes.
- Simple and intuitive user interface.

Instead of spending hundreds or even thousands of dollars on other software, and days or weeks to model and animate one single head, you can very easily get realistic custom-built 3D heads, as many as you want, in seconds, all within Unity.

More importantly, once a 3D-head is successfully created, you can **instantly get expressions and mouth-shapes you want**, and blend them together, all by a few simple mouse-clicks, **without any need for rigging, morphing, key-framing or motion capture**.

The process is so intuitive and simple that it is **no more difficult than getting your own face generate expressions and talk**.

Features only in NaturalFront Photo-to-3D Face Modeling SDK:

- SDK users are able to embed the Photo-to-3D feature into their own games.

Features only available in **Pro-version** of NaturalFront Unity plugin:

- Automatic animation between key-frames
- Synchronization between animation and audio
- Supporting lip-sync.
- Exporting high-quality customized 3D-heads AND unlimited realistic animation to FBX files.
- Realtime photo-to-3D modeling on Windows.

How It Works?

Start the plugin

1. Click the **Window** menu option in Unity.
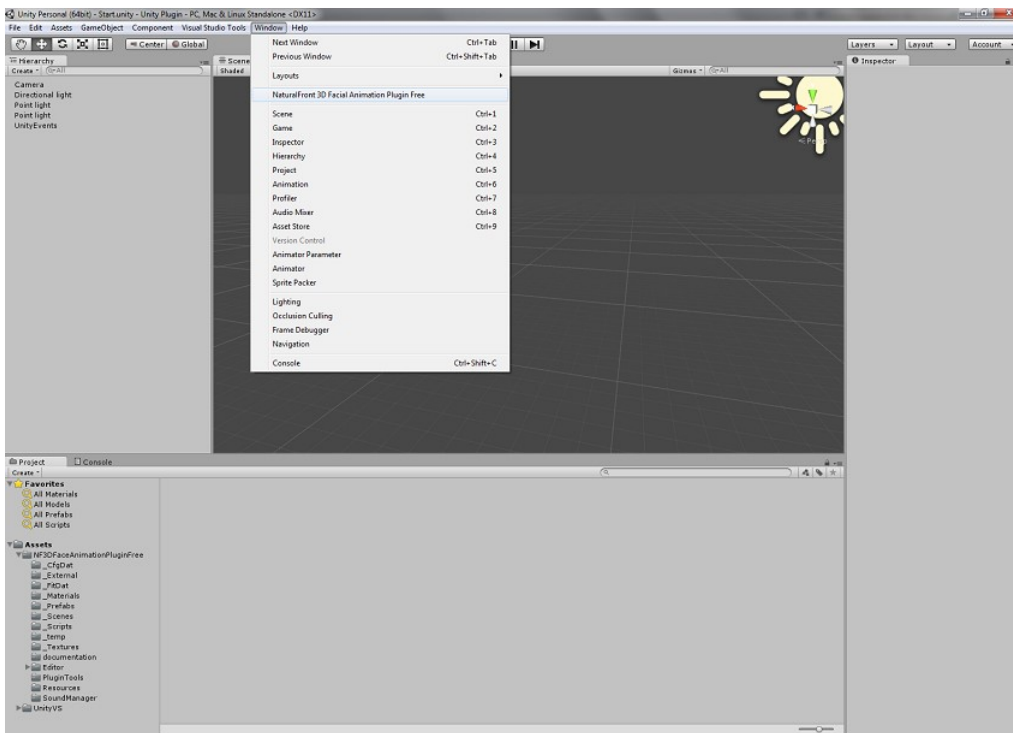2. Click **NaturalFront 3D Facial Animation Plugin Free**.

Photo-to-3D modeling

A 3D-face-model will be created, and the 3D-model will resemble the person on the photo, including both geometry and texture. The process should only take a few seconds on a reasonable 64-bit PC.

Once the 3D-face-model is created, the model will automatically have customized high-quality 3D-animation built-in.

Important Note:

- For quicker photo-to-3D, the size of the face-photo is an important factor, besides the computing power of your computer.
- Smaller sizes will lead to faster creation, but larger sizes can create more detailed textures, assuming the face takes the majority of a photo.
- The recommended size is around 1000 pixels * 1000 pixels.

Start modeling

Click **Generate 3D models from photo** to start a **simple process** that gets you realistic 3D heads with all the animation you want, with a few mouse-clicks, all within Unity.
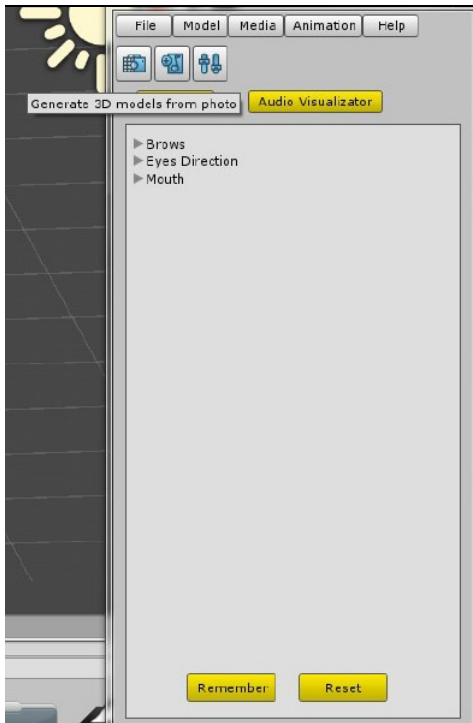
To get started you only need a good quality head-shot photo of a real-human. Click the *guidelines* or *common mistakes* links to view 2 YouTube videos that show you DOs and DO-NOTs in taking and preparing a suitable photo.
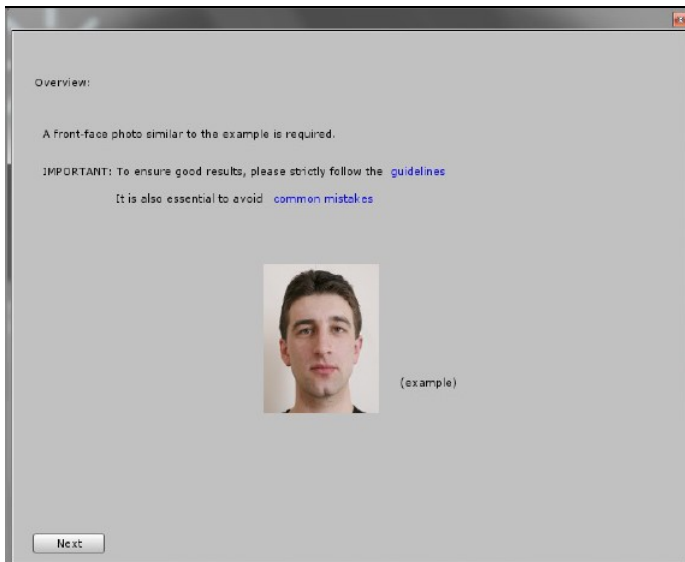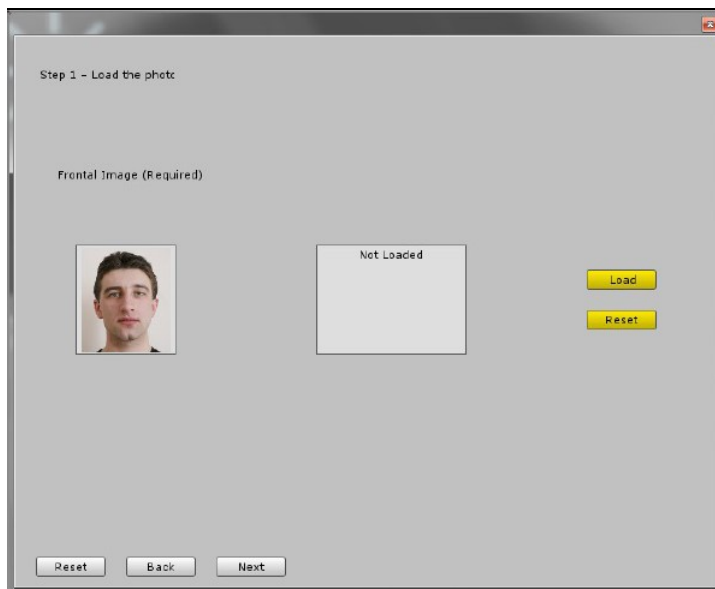

Click the **Next** button to start the process.

Load Photo

Click **Load** and select a suitable photo stored in your computer.

Click **Next**.

Click the points

1. Following the example photo shown on the right hand side, left mouse click to place the corresponding points on your photo.

Make sure to place the points exactly in the order and precise location as shown on the example photo. Who can click more accurately than a professional like you?

Select **Undo** to remove previous clicks, one-by-one.

Alternatively, select **Delete Point** and click a point to delete it, in case you didn't place it exactly right.

2. Click **Next**.
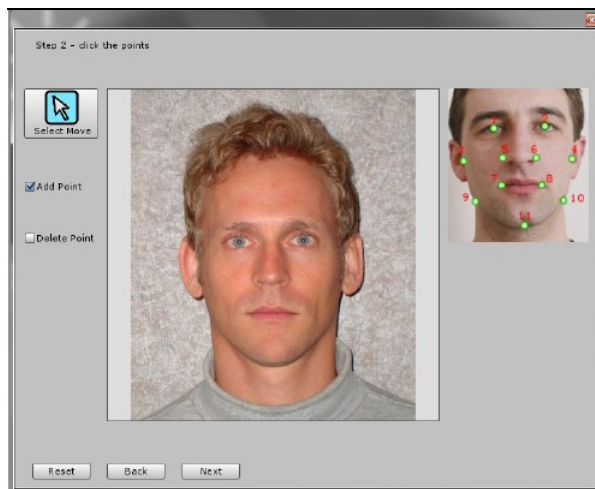
Animate 3D avatar

The created 3D head has on average a few thousand vertices. This density has proved to be good for all sorts of facial expressions and mouth shapes.

Add a primary expression

1. Select a primary expression for a 3D face: Neutral, Happiness, Sadness, Surprise, Fear, Anger or Disgust.
2. Set the strength of the primary expression using the slider.

Note: Moving the slider will automatically change the pose at the expression-level, without any low-level manual intervention from you, such as rigging or creating morph targets.

## Add a mouth-shape

1. Click **Mouth** to set up a mouth-shape.

2. Click High-Level.
3. Set **Lip narrow – Wide** value using the slider.
4. Set **Jaw Close – Open** value using the slider.

Note: Moving the slider will automatically change the mouth shape, without any low-level manual intervention from you, such as rigging or creating morph targets. If the model already has an expression set, the mouth shape will automatically try to blend with that expression.

Set abstraction levels

1. Click **Abstraction Level**
2. Selecting **Abstract level** enables you to quickly coordinate the animation of the whole face. Or,
3. Selecting **Fine-control level** enables you to separately animate the eye-area and the mouth-area, which gives you more freedom in what you want the 3D model to do.
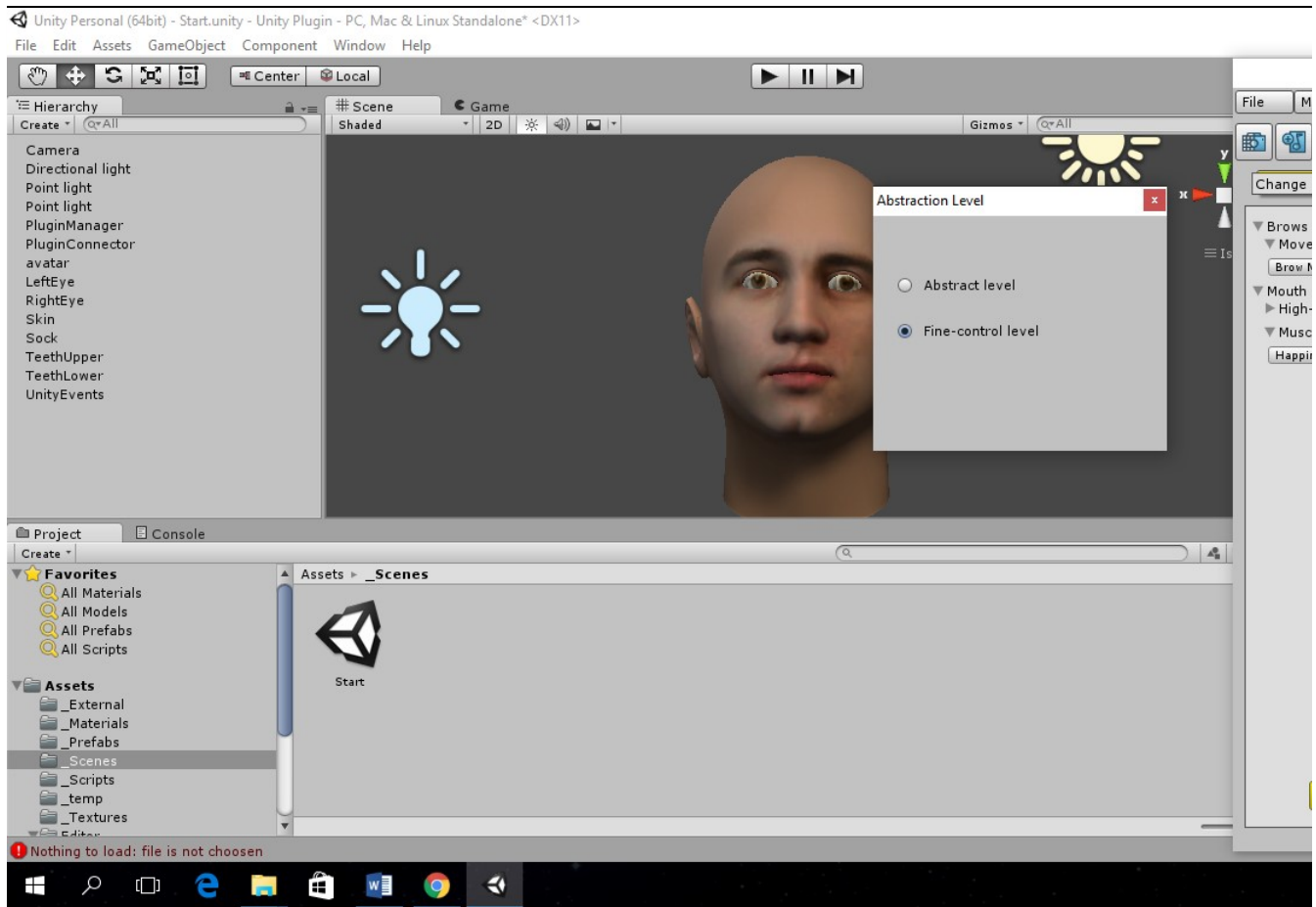
Fine-control level: Set Brows

1. Click **Brows**.
2. Click **Movements**.
3. Select a movement option: Brow Mid-Up, Brow Mid-Down and Brow Out Up.
4. Set the strength of the movement using the slider.

Note: Moving the slider will automatically animate the eye-area according to your desired effect, without any low-level manual intervention from you, such as rigging or creating morph targets.

Fine-control Level: Set Mouth

1. Click **Mouth**.
2. Click **Muscles**.
3. Select Neutral, Happiness, Sadness, Surprise, Fear, Anger or Disgust. **These are essentially all the muscles you have on your mouth area!**
4. Set the strength of the muscle movement using the slider

Note:

- Expressions are used to name the muscles, because some professionals prefer not use anatomical names that are more accurate but less user-friendly.
- Moving the slider will automatically animate the mouth-area according to your desired effect, without any low-level manual intervention from you, such as rigging or creating morph targets.

Synchronization of animation and audio (only available in <u>Pro-version</u>)

Load and play audio
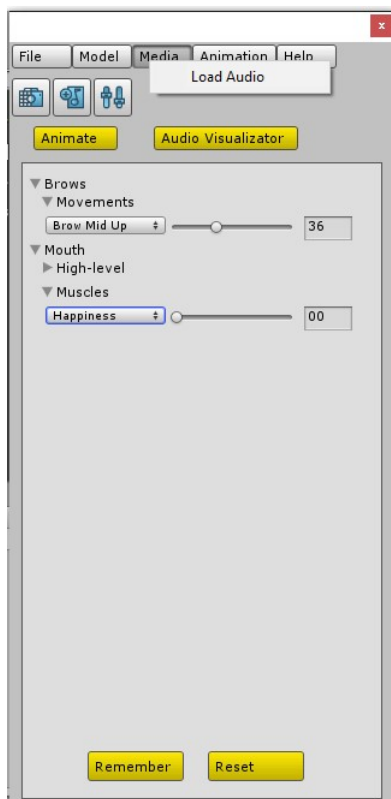
1. Click the second icon **Load audio**, or, Click **Media** in the plugin menu and select **Load audio**.
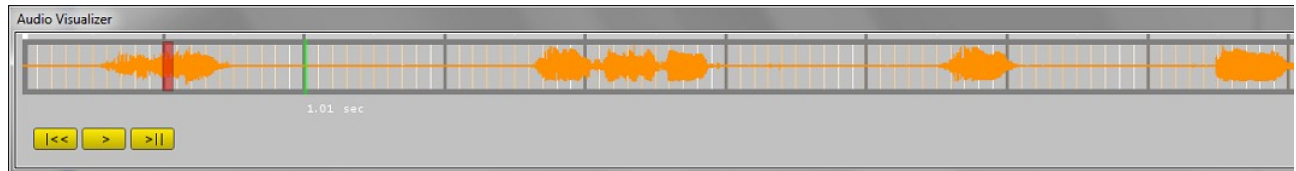2. Select a file from your computer and click **Open**.
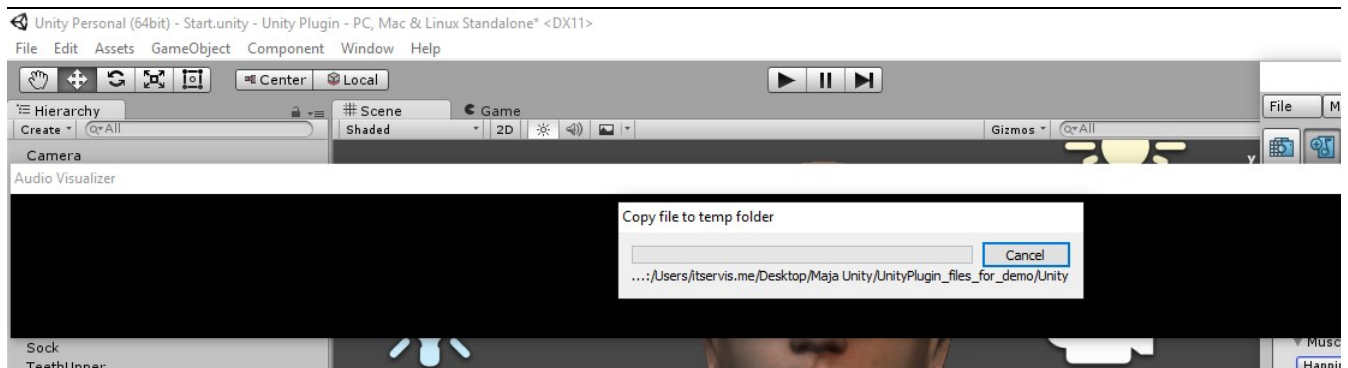
Add key & play sound

Click **Audio Visualizer** button to focus on the audio window, if this window is not your current focus.

1. Left-click to select a time in the audio track. You can then click **">" button** to play the sound at that time.

2. Click **Add Key** to make the selected time **a key**.

Save the key

1. <u>Set the model to a desired pose</u> at this key-position.
2. Once you are satisfied with the pose, click **Save Key** to save the pose into this key.

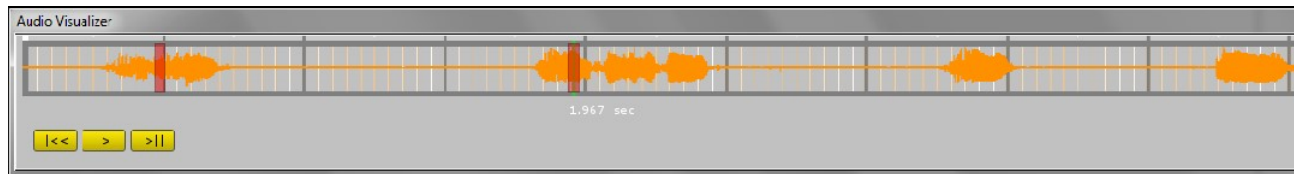**Note: A pose will only appear in the final animation if it is saved into a key.**

Delete a saved key

You can right click any saved key, and choose "Delete selected key", to delete the pose saved at this keyframe.

1-Click Animation

1. Save multiple poses into corresponding keys.

2. Click the **"Animate"** button at the top-left, to **instantly get the animation and synchronization, without any low-level manual intervention from you**, such as rigging, creating morph targets or manually key-framing.
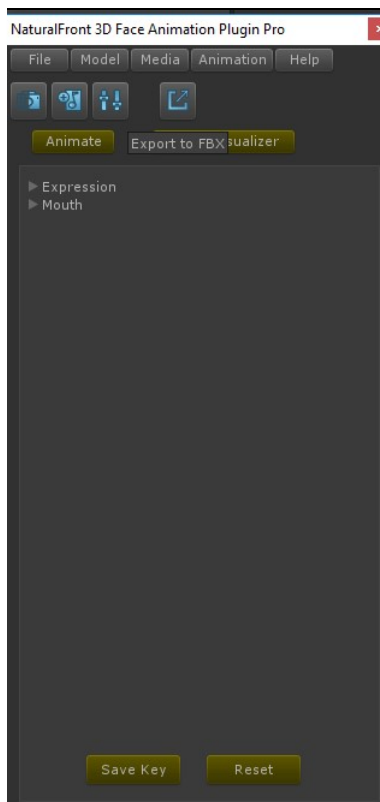

Note: Poses at deleted keys will not be shown up when "Animate" button is clicked.

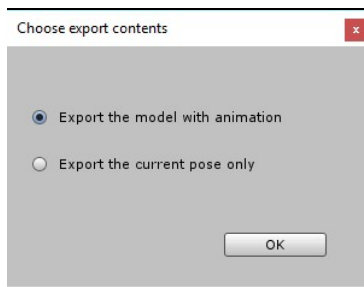# Export (only available in Pro-version)

Here users can export customized high-quality 3D-heads AND unlimited realistic animation to FBX files:

- Click the fourth icon **Export to FBX**, or,
- Click **File** in the plugin menu and select **Export**.

You can choose whether

- to export the model with its customized high-quality animation, or
- to export only the current pose.

Note:

- Both the 3D-head and its animation can be exported in a single FBX file.
- The exported animation will be the same as that when the "Animate" button is clicked.
- The exported 3D model and animation can immediately be imported in other 3D apps or other scenes of Unity.

Exit plugin

To exit plugin:

1. Click **File**.
2. Select **Exit**.

Pros & Cons

NaturalFront's unique philosophy is to make as simple as possible the task of notoriously time-consuming and costly 3D-face-animation, and at the same time, the animation will be professional-quality.

These are the key benefits of using NaturalFront 3D Facial Animation plugin:

- Super-fast modeling and animation

- Substantial time-saver

- Substantially cost-effective

Since a user can achieve high-quality 3D modeling and animation without any low-level tasks such as rigging or creating morph targets, the saving of time and cost will be truly **substantial**, in contrast to *marginal saving* that a user might get used to and/or expected, prior to trying the plugin.

Limitations of the current version:

- This is a Windows-only version; for Mac and Linux, please download other versions of NaturalFront software.
- only models and animates 3D heads, instead of complete 3D characters;
- only models and animates realistic human 3D heads, i.e. animals and unrealistic/fancy characters are not included;
- the current version focus on 3D modeling and animation, i.e. 2D is not currently supported;

However, we believe that, the benefits far outweigh the limitations.

Resources

To find out more about the NaturalFront™ 3D Facial Animation plugin, please visit the following YouTube tutorial video:

https://www.youtube.com/watch?v=lvuV3A09_5g

About reverse-engineering

If this software is being reverse-engineered, its behavior will be un-defined, and NaturalFront is not responsible for any consequences thereof.