FLAWLESS

Refinement Steps

Four simple steps to great lip sync

To ensure you have the best possible lip sync in your vub, take these four simple steps:

STEP ONE

Assess Your Vub

Is there anything you want to change?

STEP TWO

Interpolation Pass

Only alter the frames that need changing

STEP THREE

Scale Pass

Tweak performance size and articulation

STEP FOUR

Mouth Shape Pass

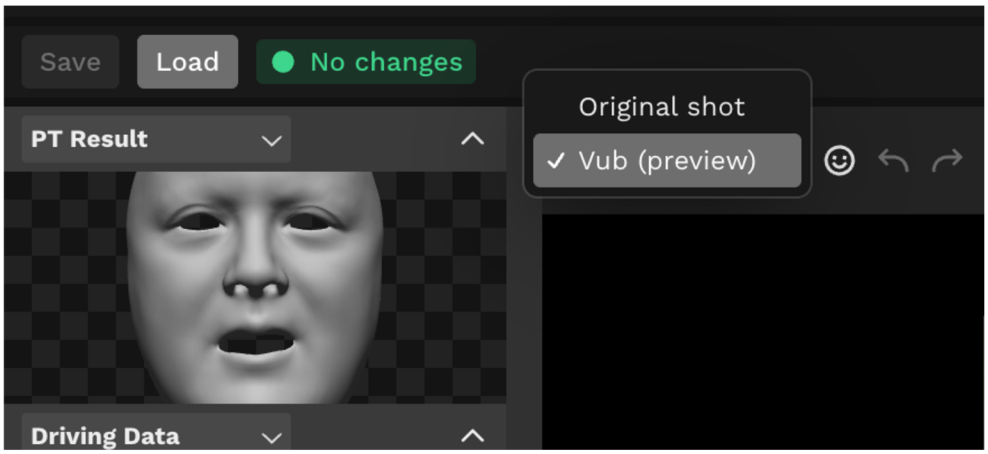
Refine mouth shapes where needed

STEP ONE

Assess Your Vub

Is there anything you want to change?

- Look at the vub – the Vub (preview):



- **Know the dialogue** that is meant to be spoken – if there's a transcript handy, check it first.

- Play the vub:
  - Did you **believe** that the character was saying the new dialogue?
  - Were there any specific moments that stood out or did something simply not **feel** right?
  - Trust your reaction from your **first viewing** – if something didn't feel right then it is likely something that can be improved. It can be harder to assess the vub honestly in subsequent viewings.
  - **Note the moments you want to improve** – you don't have to work out **what** is wrong at this stage, just that there are areas to focus on.

STEP ONE

Assess Your Vub (continued)

Is something not feeling right, but you can't quite identify the issue?

A useful technique is to start from the end of the shot and work backwards. Play the last word. If that feels OK, play the last two words. Keep working back into the vub until something doesn't feel right. Then you've found the word that isn't working.

Keep an eye on the jaw movement!

The jaw is the slowest-moving part of the mouth when talking, so sudden, sharp movements can feel unnatural. If these exist in your vub, you can use **Jaw - Open** in the **Advanced** lip sync controls to smooth them out.

STEP TWO

Interpolation Pass

Only alter the frames that need changing

The Interpolation slider allows you to define **how much** of the **new** performance (the Driving Data) is transferred to the shot. It works like this:

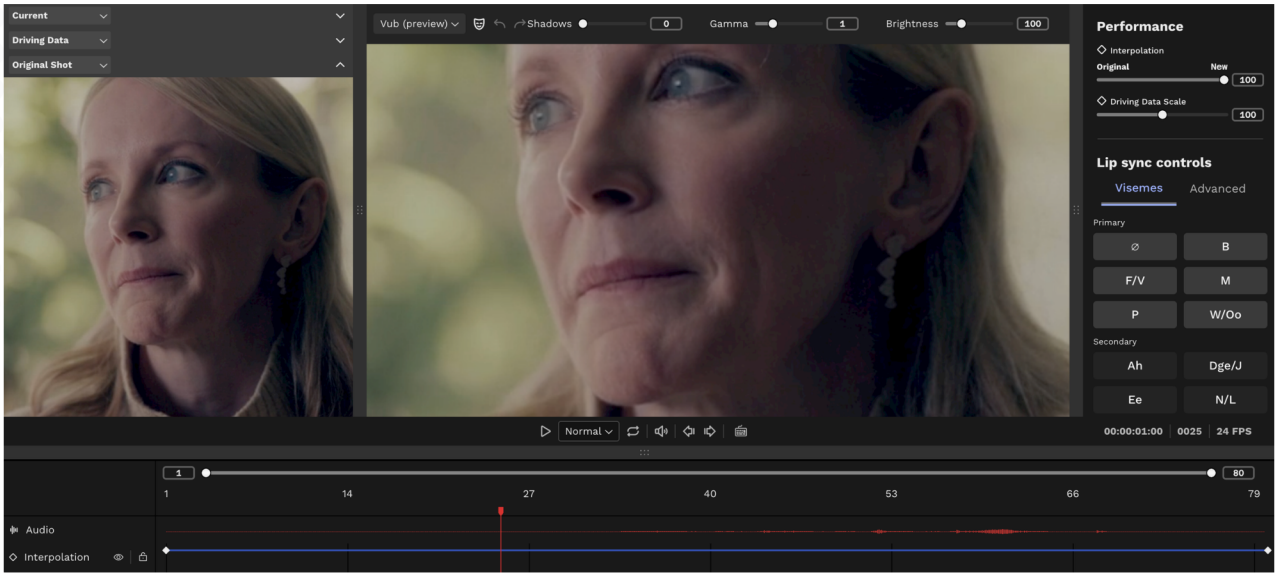
- **Interpolation = 0** gives the full **original** performance
- **Interpolation = 100** gives the full **new** performance

Only change the frames that need changing – retain as much of the original performance as possible – this could be when:

- There is dialogue that **hasn't changed**
- There are **gaps** before/after/between lines where the actor is **not talking**

Ramp in and out of the new performance using the interpolation slider. To do this:

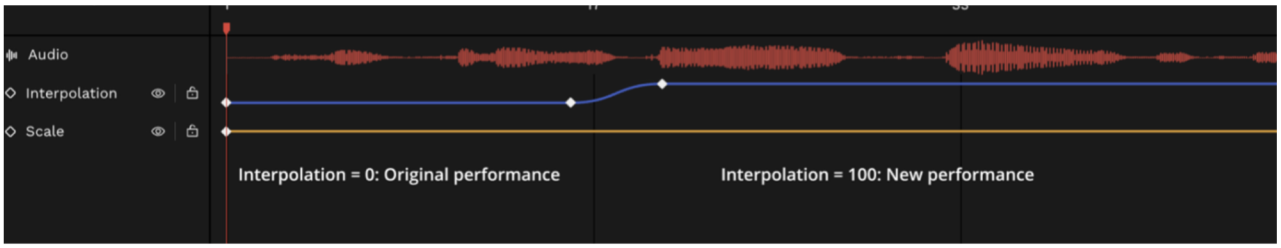
- Expand your **Original Shot** window so you can clearly see the original performance alongside your vub (minimize the 'Current' and 'Driving Data' gray face windows to help).



STEP TWO

Interpolation Pass (continued)

- Work your way through the shot and identify areas of the **original** performance you would like to use.
- Whenever you find these areas, add Interpolation ramps **down to 0** then go **back up to 100** when you want to return to the **new** performance.



- Ensure that the ramps are **long enough** to **transition smoothly**. Typically 4-6 frames produce good results.
- Once you've done your interpolation pass, **render** your shot and review your changes.

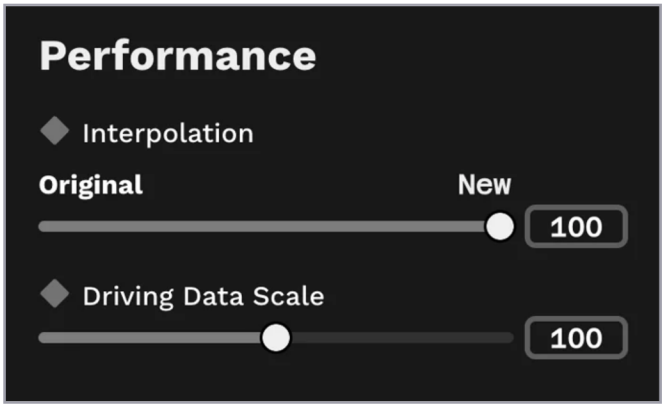
- **Note** that in the Refinement tool, frames with **zero** interpolation will show a **neural render** of the original performance.
- However, when you create an **Export**, the compositing step will transition to the **exact original frames** in these areas. This ensures the best image quality possible.

STEP THREE

Scale Pass

Tweak performance size and articulation

The **Driving Data Scale** slider is found underneath the Interpolation slider.



The slider effectively acts as a ‘multiplier’ of the articulation from the Driving Data. There are two main actions:

- **Increase / decrease** the scale to exaggerate or soften the performance size / articulation:
  - Occasionally, you'll run into a situation where the performance size in a vub does not quite match the perceived performance size in the audio. Tweak the Scale to refine this.
- **Mute** the performance by setting the Scale to zero:
  - This will **remove the speech movements** while retaining the **average emotional expression** for the shot. This is an alternative method of removing the delivery of a word or words if you don’t want to edit the audio.

Tip

It is important that, if you decide to increase Scale, then you use it **minimally** as too much exaggeration can be detrimental to the result.

STEP FOUR

Mouth Shape Pass

Refine mouth shapes where needed

In the real world, not **every** sound is visibly articulated. It's easy to try to make every sound clearly defined, but this is not the way people talk. Concentrate on the **key sounds** with a focus on making sure the mouth shapes obey the ground rules for being **physically able** to form them.

1. Check and correct the **Primary** mouth shapes across the **whole shot** to make sure they are formed correctly. Render and review your shot.

2. Check any remaining problem areas for the **Secondary** mouth shapes to identify and refine outstanding issues.

PRIMARY Mouth Shapes

B / M / P
F / V
W / Oo

SECONDARY Mouth Shapes

S / Z / T / D
Th
Ch / Sh / Dge / J
R
N / L
Ah
Ee
Oh

B/M/P

(e.g. “tu**B**e”, “**M**at” , “ca**P**”)

TIMING AND SHAPES

- **B & P:**
  - The lips should be **pressed together** on the frame **before** the sound (and possibly the frame before that too, depending on the strength of the B or P).
  - The lips **must release** from each other when the B & P sounds start.
- **M**:
  - The **M** sound occurs **only while the lips are closed**.
  - The lips **release** when the **next** sound occurs.

VISEME CONTROLS

- Increasing the B/M/P strength between 0 and 100 (full **normal** strength) will bring the jaw to a fractionally open position and the top lip down slightly to press against the bottom lip.

- Increasing the B/M/P strength from 100 to 300 (full **strong** shape) will press the lips together more, widening slightly.

- Setting the B/M/P strength to a value **below** zero will do the opposite - opening up the lips and jaw to soften, or release from, an existing B/M/P.

- In the unlikely event that you are **completely** unhappy with the existing mouth shape and want to **remove** it before applying the viseme, then reduce the **Driving Data Scale** to zero.

F / V

(e.g. “**F**ate”, “tur**F**”, “**V**elcro”)

TIMING AND SHAPES

- **F & V** sounds only occur **while** the **bottom lip** is in contact with the **top teeth**.
- **No lower teeth** should be visible.

VISEME CONTROLS

- Increasing the F/V strength between 0 and 100 (full **normal** strength) will bring the jaw to a position where the bottom lip should make contact with the top teeth, while lifting the top lip enough to ensure the lips don't seal.

- Increasing the F/V strength from 100 to 300 (full **strong** shape) will press the bottom lip more firmly on the top teeth and lift the top lip a little more to 'snarl'.

- Setting the F/V strength to a value **below** zero will do the opposite - opening up the jaw and relaxing the top lip to soften, or release from, an existing F/V.

- In the unlikely event that you are **completely** unhappy with the existing mouth shape and want to **remove** it before applying the viseme, then reduce the **Driving Data Scale** to zero.

W/Oo

(e.g. “ho**W**ever”, “**W**hen”, “c**OO**l”, “m**O**ve”)

TIMING AND SHAPES

- W and Oo sounds occur with a rounding of the lips and a small lip opening.
- The Oo sound is heard **while** the mouth shape is held.
- The W mouth shape is strongest on the **frame before** the peak of the sound, which is generated as the lips releases into the next sound.

VISEME CONTROLS

- Increasing the W/Oo strength between 0 and 100 (full **normal** strength) will set the jaw to a an open position while increasing pucker and lowering the top lip slightly.
- Increasing the W/Oo strength from 100 to 300 (full **strong** shape) will further strengthen the shape without opening the jaw further.
- Setting the W/Oo strength to a value **below** zero will do the opposite - closing up the jaw and widening the mouth to soften, or release from, an existing W/Oo.
- In the unlikely event that you are **completely** unhappy with the existing mouth shape and want to **remove** it before applying the viseme, then reduce the **Driving Data Scale** to zero.

S / Z / T / D

(e.g. "**S**au**s**age**s**", "ha**Z**y", "po**T**a**T**oes", "fa**D**es")

TIMING AND SHAPES

- Using Audio Scrubbing, find the frame or frames where you hear the 'hiss' of the S or Z sounds, or the **frame before** you hear the 'pop' of the T or D.
- Typically, the mouth shape for S/Z is made **while** the sound is heard.
- Typically the mouth shape for T/D is made the **frame before** the sound is heard.
- The lips must not be sealed.
- There should ideally be some visibility of the teeth with **no visible gap** between them.
- The jaw for T/D sounds can sometimes be **fractionally** more open than for S/Z sounds.

VISEME CONTROLS

- Increasing the S/Z/T/D strength between 0 and 100 (full **normal** strength) will set the jaw to a slightly open position.
- Increasing the S/Z/T/D strength from 100 to 300 (full **strong** shape) will widen and lift the mouth corners for emphasis.
- Setting the S/Z/T/D strength to a value **below** zero will do the opposite - moving the jaw in the reverse direction and lowering the mouth corners soften, or release from, an existing S/Z/T/D.
- In the unlikely event that you are **completely** unhappy with the existing mouth shape and want to **remove** it before applying the viseme, then reduce the **Driving Data Scale** to zero.

Th

(e.g. “**TH**ick”, “pa**TH**”)

TIMING AND SHAPES

- The Th sound only occurs while forming the Th mouth shape.
- The Th shape involves the tongue touching the underside of the top teeth, meaning that it can peek out between the teeth. DeepEditor does not currently control the tongue, so to make a Th shape work, ensure the jaw is open just enough to allow for a hypothetical tongue peeking out.

VISEME CONTROLS

- Increasing the Th strength between 0 and 100 (full **normal** strength) will set the jaw to a position open enough for the tongue to theoretically be between the teeth.
- Increasing the Th strength from 100 to 300 (full **strong** shape) will widen the mouth slightly for emphasis.
- Setting the Th strength to a value **below** zero will do the opposite - moving the jaw in the reverse direction and narrowing the mouth slightly to soften, or release from, an existing Th.
- In the unlikely event that you are **completely** unhappy with the existing mouth shape and want to **remove** it before applying the viseme, then reduce the **Driving Data Scale** to zero.

Ch/Sh/Dge/J

(e.g. “**CH**annel”, “cla**SH**”, “fu**DGE**”, “a**J**ar”)

TIMING AND SHAPES

- The lips should not be sealed.
- There should be little to no gap between the teeth.
- The lips often funnel outward.
- These sounds are typically heard as the mouth is starting to release from the position, except for elongated **Sh** sounds.

VISEME CONTROLS

- Increasing the Ch/Sh/Dge/J strength between 0 and 100 (full **normal** strength) will set the jaw to a slightly open position and start funnelling the lips.
- Increasing the Ch/Sh/Dge/J strength from 100 to 300 (full **strong** shape) will funnel the lips more for emphasis with very little further jaw adjustment.
- Setting the Ch/Sh/Dge/J strength to a value **below** zero will do the opposite - moving the jaw in the reverse direction and flattening the lips to soften, or release from, an existing Ch/Sh/Dge/J.
- In the unlikely event that you are **completely** unhappy with the existing mouth shape and want to **remove** it before applying the viseme, then reduce the **Driving Data Scale** to zero.

R

(e.g. “c**R**ash”, “e**R**ode”)

TIMING AND SHAPES

- The lips should curl slightly outwards.
- There should be a slight rounding of the lips.
- The opening between the lips should be small.
- The peak of a R mouth shape should be the frame before we hear the peak of the sound – which occurs as the shape is released.

VISEME CONTROLS

- Increasing the R strength between 0 and 100 (full **normal** strength) will set the jaw to a fairly closed position and start slightly funnelling and puckering the lips.
- Increasing the R strength from 100 to 300 (full **strong** shape) will funnel the lips more for emphasis and close the jaw a little more.
- Setting the R strength to a value **below** zero will do the opposite - moving the jaw in the reverse direction and flattening the lips to soften, or release from, an existing R.
- In the unlikely event that you are **completely** unhappy with the existing mouth shape and want to **remove** it before applying the viseme, then reduce the **Driving Data Scale** to zero.

N/L

(e.g. “pa**N**ic”, “**N**ew”, “mi**L**k”, “ba**LL**ast”)

TIMING AND SHAPES

- The lips should not be sealed.
- There should be a small visible gap between the teeth. N/L is formed by the tongue touching the roof of the mouth, so we focus the jaw opening to make this physically possible.
- The N and L sounds are heard when the mouth releases from this position.

VISEME CONTROLS

- Increasing the N/L strength between 0 and 100 (full **normal** strength) will set the jaw to a slightly open position and start lifting the top lip slightly.
- Increasing the N/L strength from 100 to 300 (full **strong** shape) will open the jaw further without changing the top lip any further.
- Setting the N/L strength to a value **below** zero will do the opposite - moving the jaw in the reverse direction lowering the top lip a little to soften, or release from, an existing N/L.
- In the unlikely event that you are **completely** unhappy with the existing mouth shape and want to **remove** it before applying the viseme, then reduce the **Driving Data Scale** to zero.

Ah

(e.g. “m**A**t”, “fl**A**p”)

TIMING AND SHAPES

- The peak of the Ah sound should match the peak of the jaw opening.
- The lips and jaw must not be closed.
- The size of the jaw opening should match the performance size.

VISEME CONTROLS

- Increasing the Ah strength between 0 and 100 (full **normal** strength) will increasingly open the jaw and start lifting the top lip slightly.
- Increasing the Ah strength from 100 to 300 (full **strong** shape) will open the jaw further and start pulling back the mouth corners.
- Setting the Ah strength to a value **below** zero will do the opposite - closing the jaw and relaxing the mouth corners to soften, or release from, an existing Ah.
- In the unlikely event that you are **completely** unhappy with the existing mouth shape and want to **remove** it before applying the viseme, then reduce the **Driving Data Scale** to zero.

Ee

(e.g. “h**EE**d”, “happil**Y**”)

TIMING AND SHAPES

- There should be a light jaw opening, leaving a slight separation between the teeth.
- There should be an increased mouth width; it can look like a smile.
- The peak of the mouth shape should match the peak of the sound.

VISEME CONTROLS

- Increasing the Ee strength between 0 and 100 (full **normal** strength) will increasingly open the jaw.
- Increasing the Ee strength from 100 to 300 (full **strong** shape) will open the jaw further and start widening the mouth.
- Setting the Ee strength to a value **below** zero will do the opposite - closing the jaw and narrowing the mouth to soften, or release from, an existing Ee.
- In the unlikely event that you are **completely** unhappy with the existing mouth shape and want to **remove** it before applying the viseme, then reduce the **Driving Data Scale** to zero.

Oh

(e.g. “b**O**ne”, “m**OA**t”)

TIMING AND SHAPES

- The lips should be rounded and slightly open.
- The Oh sound can be heard as the mouth shape is forming, with the most definition coinciding with strongest part of the sound.

VISEME CONTROLS

- Increasing the Oh strength between 0 and 100 (full **normal** strength) will set the jaw to a slightly open position and increasingly narrow and pucker the lips.
- Increasing the Oh strength from 100 to 300 (full **strong** shape) will not round the mouth much more but increasingly open the jaw.
- Setting the Oh strength to a value **below** zero will do the opposite - moving the jaw in the reverse direction and widening the mouth to soften, or release from, an existing Oh.
- In the unlikely event that you are **completely** unhappy with the existing mouth shape and want to **remove** it before applying the viseme, then reduce the **Driving Data Scale** to zero.