For more information about VSeeFace, please check out the [website](https://www.vseeface.icu).

Version 1.13.38c2:

\* Blacklisted 3tene virtual camera to avoid freezing at startup.

Version 1.13.38c:

\* Blacklisted virtual cameras that might cause issues when installed at certain versions from the camera selection menu. This should solve the NVIDIA driver issue in most cases.

\* Applied another fix to the virtual camera driver for better compatibility.

\* Separated out wrist bone reception from arm and shoulder reception for the VMC protocol receiver settings to allow better Mocopi with Leap Motion support.

\* No longer set realtime priority along with GPU background priority.

\* Reenabled GPU background priority adjustment on Windows 11. It shouldn't, but please tell me if it turns your screens black.

\* Updated/added translations for Indonesian, German, French and Vietnamese.

\* Added various FinalIK components to the VSeeFace SDK whitelist.

\* Added Magica Cloth AreaWind to the VSeeFace SDK whitelist.

\* Added Spout.InvertCamera to the VSeeFace SDK whitelist.

Version 1.13.38b3:

\* Changed virtual camera driver for better compatibility. If you keep encountering issues, try using "UninstallAll.bat" to uninstall the virtual camera or roll back your Nvidia driver to a version prior to 526.

Version 1.13.38b:

\* Improved reliability of the crash fix by detecting Windows 11 in multiple ways.

Version 1.13.38a:

\* Disabled priority adjustment on Windows 11/NVIDIA combinations to prevent crashes. Make sure to use the latest NVIDIA driver for best performance.

\* Fixed an issue where props could disappear when being attached.

\* Updated the Leap Motion LeapC.dll for better compatibility with the V5.7.2 Ultraleap software.

\* Added a VSF\_SpoutReceiverSettings component to the VSeeFace SDK, which allows converting from sRGB to Linear colorspace correctly.

\* Disabled gamepad input (hopefully) to prevent glitching menus.

\* Updated Magica Cloth to v1.12.10.

\* Updated Dynamic Bones to v1.3.2.

\* Actually disabled GPU priority adjustment on Linux/wine.

\* Added redistributable DLLs necessary for Spout2 support.

\* Updated translations.

Version 1.13.38:

\* Added support for loading models from VRoid Hub

\* Added [experimental support](https://www.vseeface.icu#vrchat) for sending VRChat OSC parameters

\* Added an option to send VMC protocol data before receiving VMC protocol data rather than at the end of the frame (may not send blendshapes)

\* Added new and updated translations

\* Updated UniVRM to v0.89.0

\* Disabled GPU priority setting when running under Linux/wine

\* Disabled realtime priority when disabling increased background priority

\* Reduced default neck stiffness

\* Fixed an issue where the "[OpenSeeFace tracking]" option would behave like toaster tracking quality if that tracking quality was previously selected

\* Fixed an issue where iPhone tracking could behave like toaster tracking quality if that quality level was selected for the web cam tracking (this setup can still lead to missing options, so it is not recommended)

\* Fixed an issue where the jaw would not be animated on models without assigned eye bones even when the jaw bone animation option was enabled

\* Fixed an issue where the option to show higher webcam frame rates did not actually work

\* Updated the VSeeFace SDK to v1.13.38

\* Updated Magica Cloth to v1.12.3

\* Added UnityEngine.ConstantForce to VSF SDK whitelist

\* Added setter methods to VSF\_Set\* components to allow them to be manipulated not only by animations but also through components like Button and VSF\_Trigger

\* Added source transform mode and late update setting to VSF\_SetTransform (this may allow emulation of constraints working in local space)

Version 1.13.37c:

\* Added a workaround to keep VSeeFace from lagging due to becoming resource starved while in the background with a game running (requires running as administrator to work)

\* Updated translations

\* Fixed VSF\_Toggle not correctly toggling objects other than the object it was added to

Version 1.13.37b:

\* Added prop settings window

\* Added Spout2 capture support which never shows menus and has lower overhead than the virtual camera, see: https://github.com/emilianavt/VSeeFaceManual/blob/master/spout.md

\* Whitelisted Spout4Unity's SpoutSender and SpoutReceiver for use in the VSF SDK

\* Adjusted default body stiffness upwards from 25 to 120

\* Fixed the very bold page numbers on the tutorial slides

Version 1.13.37a:

\* Fixed issues where attaching props to certain avatars didn't work

\* Fixed the halftone effect

\* Removed "Really nice" anti-aliasing option as it conflicted with the props feature (if you really need it, you can enable it by adding ForceSSAA=1 to the settings.ini, but you won't be able to remove props from your model)

\* Fixed VSF\_SetShaderParamFromTransform not being included in the whitelist

Version 1.13.37:

\* Added the new 2D props system developed by @Virtual\_Deat

\* Fixed the light intensity slider

\* Fixed short bursts of lag shortly after starting VSeeFace when no compatible Leap Motion software is installed

Version 1.13.36p:

\* Added blendshape translation for the iFacialMocap/FaceMotion3D/VTube Studio receiver that allows its use with models without perfect sync blendshapes

\* Added better IPv6 compatibility for ARKit tracking

\* Improved networking code

\* Added VSF\_SetShaderParamFromTransform component to the SDK (thanks Panthavma)

\* Fixed DokoDemoPainter support in the VSeeFace SDK

\* Updated the VSeeFace SDK readme to mention that DokoDemoPainter needs to be moved out of the Plugins folder to work correctly

\* Updated the model loading error message to show the correct Unity version

\* Fixed an issue where the face tracking would turn on and off repeatedly when starting VSeeFace

\* Fixed an issue where the VMC protocol receiver would fail to properly receive data upon restarting it or VSeeFace

\* Fixed an issue where blendshapes received over VMC protocol would not trigger VSF SDK animations

\* Added OnParticleCollision and OnParticleTrigger to VSF\_Trigger

Version 1.13.36o:

\* Added support for the new Leap Motion Gemini V5 software

\* Added an option to enable backwards compatibility with the Leap Motion V4 Orion software to the advanced settings

\* Fixed the Leap Motion model not disappearing when closing the settings window with the escape key

\* Fixed two windows sometimes being closed when using the escape key

\* Added a note that iFacialMocap/FaceMocap3D/VTube Studio tracking requires ARKit blendshapes

\* Added a Korean translation contributed by Pencunia

\* Prevented the frame rate cap speeding detection from spamming the Player.log file

Version 1.13.36n:

\* Added VTube Studio iPhone app integration (thanks to @DenchiSoft!)

\* Fixed an issue with gaze direction being mirrored when using iFacialMocap with non-mirrored motion

\* Fixed the "Gaze strength" slider not affecting blendshape based eyes

\* Made the gaze strength setting for iFacialMocap/VTS separate from the regular gaze strength setting.

\* Fixed camera mouth tracking being applied on top of iFacialMocap tracking

\* Improved network reception code

\* Updated to Unity 2019.4.31f1 (applies to the SDK as well)

\* Updated Magica Cloth to v1.11.1 (might require re-exporting VSFAvatar files using it)

\* Renamed "[Network tracking]" to "[OpenSeeFace tracking]"

\* Renamed "iFacialMocap smoothing" to "iPhone blendshape smoothing"

\* Renamed "Smoothing" on the main screen to "Movement smoothing"

Version 1.13.36m:

\* Removed the requirement for all 52 ARKit blendshapes to be present to apply any of them at all with iFacialMocap tracking

\* Changed the Depth of Field shader to make the whole image opaque

\* Fixed a bug where smiling could make the model freeze

\* Updated simplified Chinese translation

\* Improved networking code

Version 1.13.36l:

\* Added direct iFacialMocap and FaceMotion3D integration

\* Added the ability to select the same camera in multiple instances of VSeeFace, the tracking data will be shared and only one facetracker.exe process will run

\* Added "Chest (Fixed)" position for the Leap Motion, which allows a forward facing Leap Motion device that does not move with the chest or head

\* Fixed further issues where certain bones would not affect or be affected by constraints

\* Updated to OpenSeeFace v1.20.4 to make gaze tracking single threaded, which might reduce CPU usage in some cases

\* Added common error causes to avatar load error message

\* Enabled expression application by default for the VMC protocol receiver

\* Improved handling of broken model files

\* Updated Russian translation

\* Fixed an issue with gaze blendshapes not triggering animations

\* Added an option to enable a preview mode to the VSF\_Animations component in the SDK, which allows triggering expressions including animations while the scene is playing

\* Added an option to disable the default reflection probe, which is based on the ambient light color, to the VSF\_Configuration component

\* Added light and reflection probe components to the SDK whitelist

\* Added an option to the VSF\_Trigger component, that will only cause it to trigger for collision or trigger events, when the other object has a specific name

\* Added VSF\_SetEffectDepthOfField to the SDK

\* Fixed a bug that could lead to the VSF\_Animations component appearing empty in Unity

\* Added a VSFAvatarInspector component to the SDK, which allows runtime loading vsfavatar files in the Unity editor while the scene is playing, to help with debugging various issues on already exported models

\* Fixed a bug in the VSF\_Animations editor, that allowed selecting the same blendshape multiple times

Version 1.13.36k:

\* Fixed an issue with animations linked to expressions not playing correctly while using the VMC protocol receiver

Version 1.13.36j:

\* Added `VSF\_Trigger`, `VSF\_Toggle` components to the VSeeFace SDK which allow executing functions and toggling objects on and off on certain conditions

\* Added various `VSF\_SetEffect...` components to the VSeeFace SDK which allow overriding the settings of post processing effects like bloom and ambient occlusion. The settings can be controlled through Unity animations. The easiest way to do so, is to create an Animator on the same object the `VSF\_SetEffect...` components are attached to and animating them that way.

\* Added a `VSF\_SetBlendShapeClip` component to the VSeeFace SDK which allows overriding VRM blend shape clip values, which can also trigger custom animations according to the VSF\_Animations component

\* Added a `VSF\_SetTransform` component to the VSeeFace SDK which allows setting a game object's position, rotation and scale

\* Added `VSF\_SetAnimatorBool`, `VSF\_SetAnimatorFloat`, `VSF\_SetAnimatorInteger` components to the VSeeFace SDK which allow controlling Animator parameters through Unity animations. Note that the avatar's main Animator cannot be customized, but custom Animators can be attached to child objects to animate parts of the model. These components allow animating the Animator

\* Updated simplified Chinese translation

Version 1.13.36i:

\* Added a landscape mode that rotates the camera by 90

\* Moved "Drift back to normal" into the "General settings" window

\* Attempted to fix issues with VSeeFace becoming laggy while in the background (can be disabled with the "Disable increased background priority" option)

\* Fixed a bug where hiding the model would stop the Leap Motion tracking from working

\* Made camera and light controls work with right the alt and ctrl keys

\* Added Obi Cloth support for VSF SDK (experimental)

\* Updated Magica Cloth to v1.10.2

\* Added various joint components to VSeeFace SDK whitelist

\* Increased the maximum of the bloom threshold slider's value from 2 to 5

\* Updated simplified Chinese translation

\* Updated Russian translation

\* Updated Indonesian translation

\* Allowed settings.ini to contain transition times of up to 20 seconds

\* Fixed global reset position hotkey not fully resetting pose

\* Unlinked color wheel materials

\* Fixed an issue where broken files could cause errors each time VSeeFace is started

\* Added the filename to the VRM loading failure error message

\* Updated Unity to 2019.4.29f1

\* Updated to OpenSeeFace 1.20.3 (fixed support for camera names with special characters and some other rare issues)

\* Reordered some options to keep more important options visible when opening the settings

Version 1.13.36h:

\* Fixed a bug with the gaze offset

Version 1.13.36g:

\* Updated Magica Cloth to 1.9.4

\* Added a surprised expression to the default model

\* Fixed screenshots a bit more

\* Improved emergency framerate limiter

\* Added a simplified Chinese translation thanks to @PrettyFireNOI7

\* Updated the traditional Chinese translation thanks to @Aile\_Rozy

\* Updated the Indonesian translation thanks to @KanekoHato

\* Updated the Russian translation thanks to @IriskovayaIRISK

\* Updated the French translation thanks to @Virtual\_Deat

\* Adjusted the drift speed slider's value display

\* Added red coloring to the Leap Motion scale slider for unusual values

\* Added option to hide avatar

\* Added joints to VSF SDK whitelist (CharacterJoint, HingeJoint, SpringJoint, FixedJoint, ConfigurableJoint)

Version 1.13.36f:

\* Fixed the screenshot function so it stops taking people's faces off

\* Added an option to normalize mouth blendshapes when they add up to a value greater than 1.0

\* Made it so that the VMC protocol receiver enable state is saved

\* Fixed an issue with one of the optimizations introduced in 1.13.36c that could cause VSFAvatar animations not to play

\* Changed order of camera settings and reset option (reset to defaults)

\* Added colors to warn about less optimal camera settings

\* Fixed an issue where very bright bloom could cause dancing dark pixels to appear

\* Added an option to the advanced options that prevents bright, transparent pixels from becoming desaturated, but can cause dancing dark pixels to appear

Version 1.13.36e:

\* Internal testing version

Version 1.13.36d:

\* Fixed broken twist relaxer (could cause candy wrapper wrists)

\* Updated Magica Cloth to v1.9.3 (VSFAvatar files using Magica Cloth may have to be re-exported)

\* Added an option to prevent vertical head movement to make things feel less floaty

\* Made it so the VMC protocol sender sends one bundled packet per frame by default

Version 1.13.36c:

\* Slightly optimized a few bits of code

\* Fixed an issue where IK would be running while receiving VMC protocol receiver data even though it shouldn't be

\* Fixed an issue where things could feel a bit laggy or stuttery

\* Fixed the smart wink option not being shown when using the network tracking function

\* Added version number and some basic info to the window title

Version 1.13.36b:

\* Made using constraints and particle systems in VSFAvatars easier (VSF\_IKFollower is no longer necessary)

\* Added a smart wink option while using wink capable model that unlinks blinks only when a wink is detected

\* Updated UniVRM to v0.66.0

\* Enabled pose reset on tracking loss by default

\* Changed JSON parsing method due to changes to UniJSON (affects webcam enumeration and localization)

\* Added an advanced option to switch to default additive blendshape accumulation rather than custom maximum based

\* Fixed one of the tutorial buttons not looking grayed out while counting down

\* Adjusted the range of the ambient light intensity slider to be more precise and useful

\* Fixed issues with color wheels at some resolutions

\* Fixed an issue where color wheels could show the wrong color at the start

\* Made it so that expressions, lip sync and auto blink are not affected by the pose reset on tracking loss function

\* Added a threshold slider for the smart wink option

\* Fixed a bug where the VMC protocol receiver could not set blendshapes due to the pose reset on tracking loss function

\* Made it so that starting screen dropdown menus turn red when a selection needs to be made

Version 1.13.36a:

\* Internal testing version

Version 1.13.36:

\* Added the new Unity asset bundle based vsfavatar model format

\* Added a new relaxed hand pose

\* Fixed the application of expressions while receiving VMC protocol blendshape data

\* Changed the default hand pose to be more relaxed

\* Updated French translation

\* Added partial German translation by @Heros\_Jani

\* Fixed reset position function so it also resets the body's rotation and position

\* Added support for the new ScreenTop position for the Leap Motion added in the Gemini V5 SDK software

\* Made some options easier to understand

\* Fixed an issue where the VMC receiver would get stuck after enabling it again after disabling it

\* Added an option to disable transparency enhancement to the advanced options (only use if you know you need it)

\* Added an option to disable the webcam FPS limit to the advanced options

Version 1.13.35:

\* Added a new tracking model "High quality (wink support)" quality level with better wink and blink tracking. Select it on the starting screen, disable linked eye blinks in the general settings and try winking!

\* Made the "link eye blinks" setting be able to have separate saved values for the wink model and other models and made it default to off for the new model

Version 1.13.34r:

\* Fixed the gravity issue in a different way, as the previous one caused issues with certain models

Version 1.13.34q:

\* Fixed gravity affecting VRM spring bones too much, which could also cause issues with colliders

\* Improved and completed Japanese translation thanks to @Kurogane\_8\_Gk's kind support

\* Removed usage notes as they were partially outdated and better information can be found on the website

\* Removed the option to automatically reset position after tracking loss as it mostly caused issues

Version 1.13.34p:

\* Fixed the ambient occlusion settings not working

Version 1.13.34o:

\* Fixed an issue with avatar size calculation

\* Due to the size calculation fix, it may be necessary to slightly adjust the Leap Motion scale and general motion range settings

\* Added CaptureCardBG option taking an HTML hex code that can be set in the settings.ini

\* Added an error message if the port is already in use when enabling the VMC protocol receiver

\* Added a LAN IP address display button to the VMC protocol receiver settings

\* Fixed ambient light default settings, which caused issues with metallic materials and made shadows invisible by default

\* Extended light intensity slider range to 0

Version 1.13.34n:

\* Fixed the arm angle only being apply when the slider is changed

\* Fixed an issue with low body stiffness values in combination with applying tracking while receiving VMC protocol data

\* Root position and rotation are no longer applied by the VMC receiver, when the lower body is set to be tracked by VSeeFace

\* Added an option to automatically reset position on full tracking loss if reset pose on tracking loss is enabled

\* Fixed an issue with double clicking the gaze strength to reset it to its default value

Version 1.13.34m:

\* Added five more custom camera positions for a total of ten

\* Readded a compressed translation credits list to the english language file

\* Made some sliders turn red when they are set to values outside the range likely to give good results

\* Added interpolation to VMC protocol receiver

\* Added smoothing options to VMC protocol receiver

\* Updated Unity to 2019.4.16f1

\* Fixed a bug where the "Track lower body" setting for the VMC receiver would no longer apply the hip position

\* Fixed an issue where the reset position button and non-global hotkeys could lead to incorrect default camera positions for avatars that don't have their feet at ground level

\* Reverted the mouth tracking related change from 1.13.34j to avoid head pose errors

Version 1.13.34l:

\* Fixed a crash when clicking the FPS selection dropdown (randomly added thanks to Unity)

Version 1.13.34k:

\* Fixed VMC protocol reception of blendshape data

\* Changed "Recommend settings" to recommend "Barely okay quality, but faster" instead of "Barely okay quality" and "Still better than toaster" rather than "Low quality"

\* Fixed the VMC protocol sending code in the preview Unity project to better handle models with many blendshapes

Version 1.13.34j:

\* Fixed the model facing backwards when receiving motion data from ThreeDPoseTracker

\* Improved the handling of model root and hips positions and rotations when sending or receiving VMC protocol data

\* Made it so that toggling the VMC receiver on and off resets its pose

\* Reduced the impact of eye blinks on head pose

\* Reduced the impact of opening the mouth of head pose

\* Added two new tracking quality levels

\* Fixed toaster mode

Version 1.13.34i:

\* Made it so that sliders get reset to their default values when double clicked

\* Added a numeric pop up display for slider values

\* Reset the gaze and eyebrow offset settings to default

\* Set the offset sliders to hidden unless enabled from the advanced settings

\* Split up the options to track gaze or jaw while receiving VMC protocol data

Version 1.13.34h:

\* Fixed translations turning random stuff into "ul"

\* Added an option to have the pose reset when losing tracking, and two sliders to control its behaviour

\* Added four additional custom camera settings for a total of five

\* Added the ability to assign global hotkeys for all possible default camera settings

\* Added the ability to unassign global hotkeys using shift+escape

\* Fixed some alpha transparency issues

\* Adjusted tracking space scaling calculation

Version 1.13.34g:

\* Fixed jaw animations

\* Updated OpenSeeFace to v1.20.0

Version 1.13.34f:

\* Note: An update of the Leap Motion software to version 4.1.0 was released in September. If you use a Leap Motion and haven update, it's strongly recommended as it can improve the tracking noticably.

\* Fixed a bug that made it much harder to touch finger tips together or precisely control your hands with Leap Motion tracking

\* Fixed an issue where the camera position could be behind the avatar for avatars with head bones below ground level

\* Fixed an issue where only tracking blendshapes or only gaze and jaw while reciving data over the VMC protocol would not work properly

\* Fixed an issue where part of track point display could turn white

Version 1.13.34e:

\* Fixed a crash when accessing the bloom effect settings

\* Fixed an issue where changing textures with VRM blend shape clips would not work correctly

\* Fixed root rotations received over the VMC protocol not being applied correctly

\* Fixed bone rotations and positions only being zeroed out after having been received once when the VMC receiver is enabled

\* Fixed the "Expression smoothing" slider not having text on it in the general settings

\* Fixed an issue with transparency rendering

\* Increased default bloom color intensity

Version 1.13.34d:

\* Added an option to allow the usage of expressions with hotkeys and expression detection while receiving face tracking data over VMC (expression detection uses the regular camera tracking)

\* Made it so that expression settings for disabling eyebrow, blink and mouth animations also affect blendshapes received over VMC, including perfect sync blendshapes and extended lip sync visemes

\* Added an option to render the MToon shade color the way old UniVRM versions and VRoid do it to fix hair with bright shade colors

\* Added instruction text that is shown while recording expression data

\* Added separate options for tracking blendshapes and eye (and jaw) bones while receiving VMC data

\* Moved VMC protocol related settings to a separate section in the general settings

\* Added a secondary VMC protocol receiver, allowing VMC input from two sources at the same time, affecting different parts of the avatar

\* Prevented extended lip sync and most perfect sync blendshapes from showing up in the expression settings

\* Fixed blendshape based gaze tracking not working

\* Increased default gaze tracking strength to make it the effect more obvious

\* Updated French translation

\* Updated to UniVRM 0.62.0

Version 1.13.34c:

\* Added the ability to mix and match VSeeFace tracking with VMC protocol/OSC receiving

\* Added a new French translation by @FrShuji

\* Made it so that the translation credits for each language are displayed when the language is selected as space was running out

\* Fixed root motion with VMC receiving and sending

Version 1.13.34b:

\* Added support for sending tracking data via the VMC protocol

\* Added the ability to receive motion data via the VMC protocol

\* Added a new Russian translation by @IriskovayaIRISK

\* Added additional error checking to dshowcapture

\* Made it so the camera selection menu in the general settings is hidden in wine mode on Linux

\* Fixed the wind effect not working correctly with the example avatar

\* Fixed an issue where VSeeFace could keep crashing at startup, it should now only crash once at most due to this issue

Version 1.13.34:

\* Added a wind effect to spring bones, thanks to: https://github.com/malaybaku/WindForVRM

\* Added support for full viseme sets using custom VRM blend shape clips

\* Fixed an issue where hand tracking wouldn't work on models with missing or no fingers

\* Fixed an issue where skinned mesh renderers with big positional offsets could cause the avatar scale to be calculated incorrectly

\* Fixed an issue where having objects other than bones in fingers could cause them to be bent in weird ways at while rest

\* Increased default blink sensitivity

\* Reduced the range of the eyebrow offset slider as extreme values could cause issues

\* Removed unnecessary width and height questions from run.bat

\* Fixed a bug where the tracking would break upon toggling synthetic gaze

\* Fixed a bug where an error message could get stuck on screen

\* Made it so that the camera dropdown in the general settings updates its device list after selecting a camera

Version 1.13.33i:

\* Added traditional Chinese translation thanks to @Aile\_Rozy

\* Fixed some font issues

\* Updated Indonesian translation

\* Reverted the change of shadow map resolution

\* Attempted to fix an issue where the mouth does not track correctly

\* Fixed an issue where the "[Network tracking]" option wouldn't be saved when using a translation

\* Fixed an issue where attaching the Leap Motion after starting VSeeFace and before pressing start could cause the wrong camera to get selected

\* Added additional error checking to the DirectShow frame reading code

\* Reverted video links

\* Added logo to start screen

\* Fixed an issue where an error message could be displayed on top of the avatar even if the UI is hidden using the ¦ button

Version 1.13.33h:

\* Fixed the ambient occlusion effect which was not working at all under most circumstances

\* Added more redistributable DLLs to fix weird issues when the MSVC++ 2015 runtime is not installed

\* Fixed an issue where certain cameras (DroidCam) could cause the camera list to appear empty

\* Removed unnecessary WinPixEventRuntime.dll which could cause crashes at start up on some systems somehow

Version 1.13.33g:

\* Fixed a bug that would let the facetracker.exe run with more than one thread (this should lower CPU load, but can also reduce TR and benchmark results)

\* Updated onnxruntime to 1.5.1

\* Removed the option for the face tracker to try harder at detecting faces as there were no situations where it was useful and it could cause tracking issues

\* Added an option to use jaw bone mouth flaps with lip sync and mouth tracking

\* Fixed half tone effect settings not affecting the effect

\* Moved "mirror image" to the advanced settings

\* Added a note that the advanced options are usually not necessary and can lead to undesirable results

\* Fixed an issue where "[Network tracking]" would appear in the camera list in the general settings

\* Made it possible to run multiple instances of VSeeFace at the same time

\* Updated links to point to new YouTube channel

\* Fixed an issue with the Leap Motion tracking base not moving along properly with chest or head bone

Version 1.13.33f:

\* Fixed "Recommend Settings" and made it finish faster

\* Split translations into multiple files in VSeeFace\_Data\StreamingAssets\Strings, but you can still submit translations in the old format as well for now

\* Increased shadow map resolution

\* Made sure that InvariantCulture is used for parsing floating point numbers from settings file

\* Added commandline flags only active while running in wine on Linux (`--background-color #00FF00` and `--disable-wine-mode`)

\* Fixed some more parts of the UI not being localized

\* Fixed VRM information disappearing when switching languages

Version 1.13.33e:

\* Reverted a change that caused a degradation in tracking quality

Version 1.13.33d:

\* Fixed an issue on older GPUs that could cause faces to disappear when blendshapes were triggered

\* Added camera selection back to general settings

\* Added an experimental option to keep the hips position somewhat fixed to the advanced options

\* Updated the virtual camera driver with a custom device path to reduce the likelihood of conflicts (this might require uninstalling and installing it again)

\* Added an option to the advanced settings to make the face tracker try harder at detecting faces, but this may lead to odd results

\* Made it possible to enable Blackmagic capture card support from the advanced settings and rebuilt the DLL without AVX

\* Updated to Unity 2019.4.12f1, which was released today

\* Added a new Brazilian Portuguese translation by @RafaelRiva0

Version 1.13.33c:

\* Reordered camera settings lines to prefer non-MJPEG settings as MJPEG decoding can increase CPU load noticably

\* Tweaked the face tracker performance settings

\* Fixed an issue with synthetic gaze

\* Fixed a bug where the version number display could be missing

Version 1.13.33b:

\* Fixed a bug that could lead to unreasonably high CPU usage

\* Fixed the upper arms twisting needlessly, which was most visible when putting the avatar into a T-pose using the arm angle sliders

\* Fixed an issue that could cause the webcam resolution on the stats display in the lower right corner to disappear

\* Reintegrated face landmark decoding directly into the onnx model

\* Made it so that adding Blackmagic=1 to settings.ini should re-enable experimental support for Blackmagic capture cards

Version 1.13.33a:

\* Disabled special Blackmagic capture card support by default.

Version 1.13.33:

\* Changed the webcam configuration to be dropdown menu based

\* Added an automatic performance tuning button

\* Added the ability to close settings windows, help, tutorial and avatar selection using the escape key

\* Added a partial Spanish translation by @ENiwatori

\* Added a partial Indonesian translation by @KanekoHato

\* Switched the settings and avatar selection buttons

\* Renamed some buttons

\* Reordered settings buttons

\* Added webcam resolution below FPS and tracking rate display

\* Fixed localization not affecting parts of the program

\* Attempted to fix broken arms that can occur if an avatar is loaded while the leap motion is active

\* Changed the way the avatar's default pose is set, hopefully avoiding arms crossing behind the avatar's back for models that were not properly normalized in a T-pose

\* Removed the ability to switch cameras from the general settings (will be reintroduced in a future update)

\* Added an option to increase process priority, which might help if VSeeFace starts lagging while in the background, but likely comes at the expense of other processes running smoothly

\* Increased the range of the look down threshold slider, allowing threshold to be set in such a way that it triggers when looking down slightly

\* Increased the range of the blink sensitivity slider

\* Fixed a bug that could cause certain model's arms to be stuck in the pose it is originally loaded in

\* Fixed small Leap Motion related bugs

\* Fixed gaze tracking not working on models with only a single eye bone

\* Added black and white halftone post processing effect

\* Reduced the default color intensity for the bloom effect

Version 1.13.32i:

\* Fixed jumpy tracking with jumpy or uneven tracking rates

\* Attempted to fix an issue with saving the Leap Motion settings

Version 1.13.32h:

\* Fixed one remaining motion interpolation issue that could lead to the head rotation jumping at low tracking rates

\* Added a slider to adjust the threshold at which you are considered to be looking down for eye blink adjustments

\* Reworked the interpolation of mouth, eyebrow, eye blink and gaze tracking to be smooth

\* Fixed the position of the update notification text

\* Made it so ThunderSVM models are loaded using LibSVM

Version 1.13.32g:

\* Updated UniVRM to 0.60.0

\* Reapplied fixes to blend shape accumulation and MToon

\* Fixed some sources of jitter on spring bones

\* Implemented smoother motion interpolation

\* Fixed the neutral blend shape not being active by default

\* Fixed an issue with the avatar selector letting you select no avatar, leading to a loading text being stuck on the screen

\* Added a button that opens the logs and settings folder to the advanced option section

\* Moved locomotion to the advanced option section as it can lead to weird poses

\* Fixed the issue where an error message would appear very shortly when closing the program

\* Moved the ¦ button and performance display upwards a little so it doesn't hide behind the task bar when the window is too big

\* Added an option to auto blink while looking down

\* Fixed an issue where hotkey assignment buttons wouldn't display the current hotkey

Version 1.13.32f:

\* Fixed camera issues with avatars with head bones with Y coordinates below 0

\* Fixed display issues with Japanese characters in VRM meta data

\* Fixed long VRM license URLs

\* Fixed models without fingers not moving

\* Further attempts to fix the stretchy arm bug (mainly appears while changing models with Leap Motion tracking?)

\* Fixed the Leap Motion left/right position flipping when opening the Leap Motion settings

\* Added Japanese slide titles for tutorial

\* Added language chooser to tutorial for first start

\* Fixed the virtual camera's background image not auto loading correctly in all cases

\* Fixed an issue with alpha blending backgrounds for the virtual camera

\* Fixed the calculation of avatar height used for adjusting tracking space for avatars with parts noticably below ground level

\* Fixed a bug where experimental expression would still use ThunderSVM which can lead to high CPU (press calibrate once and save to go back to the old type)

\* Fixed a bug with lip sync from canned audio

\* Attempted to fix an issue with hybrid lip sync camera based mouth tracking

Version 1.13.32e:

\* Fixed color selection wheel glitches

\* Fixed an issue with partially transparent areas being too dark

Version 1.13.32d:

\* Switched to linear colorspace

\* Prevented FPS display from showing on top of the help screen

\* Added ctrl+right click for panning the view

\* Added a tutorial on showing the tutorial to the tutorial (go to: Show Help > Tutorial)

\* Added a simple custom icon

Version 1.13.32c:

\* Added a warning about non-normalized humanoid bones

\* Reverted back to LibSVM as ThunderSVM was causing performance issues on some systems. If you updated your expression calibration in the previous version and experienced high CPU usage afterwards, try pressing calibrate again and saving it. This should fix it.

\* Added messages noting why the start button is disabled

\* Modified the reset position function to be more thorough

\* Made it so that the hip bone's X and Z offsets are zeroed out at load time

\* Added an invisible floor plane

\* Improved the error message that appears when the tracker process disappears

Version 1.13.32b:

\* The version number was actually not changed. This fixes some issues where the tracker wouldn't start due to an incompatible version of DLLs being included. The issue only appears on systems without VC++ runtime files installed, so if 1.13.32 is working fine for you, there is no need to download again.

Version 1.13.32:

\* Added a rough and basic tutorial that is displayed at first start or accessed from the help screen (I'll try to make it look nicer in the future)

\* Added a new very fast toaster grade tracking quality mode (around four times faster) without blink, gaze and expression tracking for low spec PCs

\* Added a language choosing dropdown menu on the starting screen

\* Tried adding Japanese translations for parts of the UI

\* Switched to ThunderSVM, speeding up the expression detection calibration

\* Added string table file: VSeeFace\_Data\StreamingAssets\Strings.json

\* Adjusted the thresholds for less sensitive blink detection when looking down

\* Made VRM loading error messages more useful

\* Added a short description about how to trigger expressions with simple expression detection

\* Fixed a bug where loading an avatar could fail after loading a broken avatar failed

\* Fixed a bug where turning off improved anti-aliasing would hide buttons in the effects settings

\* Fixed a bug where the contents of the expression settings window would be tiny at higher resolutions

\* Fixed an issue where a set resolution would temporarily be reset when closing the program when the window is allowed to be resized

\* Fixed some text input boxes looking empty at certain window sizes

\* Added a slider to adjust eye blink smoothing

\* Added a slider to adjust neck stiffness, making head tilts without moving the whole body easier when set to a lower value

\* Made it so audio input is automatically reinitialized if no more audio data is received for three seconds after originally receiving audio input

\* Fixed gaze tracking issues introduced recently

\* Made further fixes the camera based part of hybrid lip sync, hopefully stopping it from randomly not working

\* Removed enable effects checkbox (handled automatically)

\* Moved option to enable SMAA to general settings

\* Fixed an issue with a grey silhouette of the original avatar appearing when both "Really nice" anti aliasing and the lens distortion effect are active

\* Made it so that a camera has to be actively selected at first start before the start button can be pressed

\* Added an option to the advanced options to keep the virtual camera enabled

\* Fixed a bug where the avatar selection was not affected by performing a factory reset

Version 1.13.31c:

\* Fixed a bug where calibrating the experimental expression detection would be impossible with certain models

Version 1.13.31b:

\* Fixed a bug with the smoothing and sensitivity default value for the new simple expression detection being incorrect

Version 1.13.31:

\* Added manual throttle to enforce frame rate cap if it somehow does not operate properly, which can significantly reduce CPU usage in rare situations

\* Changed Leap Motion rotation sliders to avoid gimbal lock

\* Renamed "Disable updates" to "Less mesh updates" to avoid potential confusion

\* Attempted to fix arms breaking if a new model is loaded while the Leap Motion is actively tracking hands

\* Added a frame rate and tracking rate display in the lower right corner

\* Added an option to the effect settings to enable post processing based smoother anti-aliasing (slightly increases GPU usage)

\* Disabled gaze tracking functionality in the face tracker when synthetic gaze is enabled so it uses less CPU

\* Added new simplified expression detection mode that doesn't require calibration (fun, angry, surprised only)

\* Added an option to make eye blink detection less sensitive when looking down

\* Added a surprised expression to the default avatar

\* Fixed an issue where the mouth wouldn't open through camera tracking with hybrid lipsync

Version 1.13.30:

\* Fixed bloom effect, allowing it to bleed outside the area covered by the avatar

\* Added an option to limit the bloom effect to the area covered by the avatar

\* Added an option to let the grain effect affect the whole image

\* Added a slider to influence how strongly the grain will affect transparent areas

\* Added a slider to influence the alpha values of bloom on transparent areas

\* Prevented effects from running during the starting UI

\* Fixed the ambient occlusion effect

\* Added tutorial link right next to the expression detection option

\* Prevented expressions getting stuck when expression detection is disabled or tracking is lost

\* Fixed disappearing text in dropdown menus at some window sizes

\* Allowed settings windows to move in front of UI buttons

Version 1.13.29d:

\* Improved reliability by filtering out NaN values

Version 1.13.29c:

\* Included more runtime DLLs

\* Improved logging and reliability

Version 1.13.29b:

\* Made the face tracking reinitialize the camera if it is lost during tracking

Version 1.13.29:

\* Added an option to use old OVR lip sync mode (less accurate, but might be more sensitive)

\* Optimized face tracking performance

\* Fixed bug with anti-aliasing settings not being saved properly

Version 1.13.28fixed2:

\* Fixed error message at start on systems without audio recording devices

Version 1.13.28fixed:

\* Clarified error message about disappeared tracker process

\* Made lip sync use the default recording device if no mic is selected

\* Added support for different color spaces and improved format selection for webcams

\* This release should finally fix the webcam issues

Version 1.13.28e:

\* Added the old camera reading code back in and made it so all of the different libraries are tried as fall backs

Version 1.13.28d:

\* Made the camera reading code fall back to the camera's default settings in case of failure

\* Fixed an issue with the model's right hand in mirror mode with Leap Motion

Version 1.13.28c:

\* Updated the new camera reading code to be more fault tolerant

Version 1.13.28b:

\* Replaced the camera reading code with libdshowcapture, which should make it compatible with more cameras

\* Fixed disappearing avatars when selecting a different avatar in the avatar selection UI

\* Lowered hand jump detection threshold

\* Fixed hands not moving along with the body correctly in mirror mode when chest or head positions are used

Version 1.13.27b:

\* Fixed the custom camera position saving with zoom

\* Added a clear button to the custom camera position setting

\* Hid the ambient occlusion effect behind an "Enable broken effects" checkbox

Version 1.13.27:

\* Fixed screenshot hotkeys being active on the start screen

\* Fixed an issue where broken avatars could not be removed from the avatar selection UI

\* Fixed further bugs that occurred when using the screenshot function, which could lead to the screen being flipped

\* Fixed screenshots with "Really nice" anti-aliasing

\* Changed the background to be transparent even with the UI showing

\* Added post processing image effects (Bloom, ambient occlusion, lens distortion, chromatic aberration, color adjustment, grain). Only the image area covered by the avatar itself will show up as affected in OBS.

\* Leap Motion ghost busting progress: Added and enabled an option to limit the maximum distance of hands to the Leap Motion within which hand detections may occur

\* Leap Motion ghost busting progress: Changed "physics extrapolation" to off

\* Changed the virtual camera to show the avatar while the UI is showing (no UI is displayed on the camera)

Version 1.13.26:

\* Added an update checker that will display a message when a new version becomes available

\* Fixed a bug where the expression stabilizer setting actually affected eyebrow offset

\* Added a slider to set avatar arm angle

\* Modified IK not to rotate the body according to hand position while the Leap Motion is in the chest position

\* Optimized avatar loading to reduce avatar initialization time

\* Fixed settings windows being opened in the background

\* Added a note on how to restart the tracker process to the tracker process gone error message

Version 1.13.25d:

\* Improved MToon TransparentWithZWrite rendering when transparent layers overlap

Version 1.13.25c:

\* Reduced the incidence of ghost hands that appear due to Leap Motion false positives by filtering them out

\* Added an option to disable offscreen updates for skinned meshes. This can speed up rendering for models with high numbers of meshes (200+), but it can also lead to parts of the avatar randomly becoming invisible in certain circumstances.

Version 1.13.25b:

\* Fixed avatar height based scaling of tracking space for Leap Motion tracking with chest and head positions

Version 1.13.25:

\* Added a new avatar selection UI made by Deat

\* Loading avatars no longer freezes the program, so the "L" hotkey might actually be useful now, but it might still lag a bit

\* Attempted to fix further cases where the transparent view flips upside down

\* Added a transparent background image for use with the virtual camera's ARGB mode in VSeeFace\_Data\StreamingAssets\

\* Made the Leap Motion model visible while inside the avatar mesh

\* Changed the UI hiding button to also hide the Leap Motion model

\* Fixed a bug where the IK target's position could be off when reverting to the default model

\* Made it so that the tracking space scales with avatar height as determined by vertical position of the head bone to properly support very small and very big avatars

\* This means that the motion range and leap motion scale values need to be adjusted a bit

\* Added an option to make the synthetic gaze look at the camera

\* Added an option to set a custom default camera

\* Disabled automatic recalibration when the face seems to teleport and after 0.4 seconds, the new position is simply accepted

\* Fixed Leap Motion hands not correctly following chest, especially with mirror mode active

\* Enabled no-3d-adapt tracker option to stabilize expression detection and prevent people from randomly flying off after a while

\* Fixed a bug where the face tracking background process could be started by other options, even though it was stopped by the main option in the general settings

Version 1.13.24:

\* @Virtual\_Deat has joined in on working on VSeeFace, so I'm not the only one working on it anymore! He has started working on a revamp of the starting screen's UI.

\* Fixed alpha transparency issues with MToon cutout materials

\* Added shoulder stiffness slider

\* Added configurable hotkey to toggle audio lip sync

\* Renamed "Lip sync audio gain" to "Lip sync audio overdrive gain" and limited its scale (only use this for extremely quiet mics)

\* Added a body stiffness slider that controls how far the head needs to turn before the body will also turn

\* Added resolution options (resolutions below 960x540 are not saved)

\* Added support for more cameras through OpenCV/DirectShow

\* Added an option to apply lip sync animations without applying the weight output from OVR Lip Sync

\* Added sliders to control the durations of transitions for acquiring and losing Leap Motion tracking

\* Added configurable global reset position hotkey

Version 1.13.23:

\* Added a smooth transition for when the Leap Motion detects a hand

\* Renamed "Lip sync strength" to "Mouth size reduction" and inverted the scale to improve clarity

\* Fixed mouth size reduction being initialized to a non-zero value

\* Renamed "Lip sync gain" to "Lip sync audio gain"

\* Added a synthetic gaze option that moves the eyes according to head orientation

\* Updated to UniVRM 0.56

\* Fixed blendshape overdrive bug

Version 1.13.22:

\* Improved concurrent camera capture performance

\* Added low latency capture mode to virtual camera (may slightly impact performance)

\* Added slider to adjust drift speed when drifting back to the default position is enabled

\* Moved the notes into a separate window that can be shown in the main UI

\* Added a mirror image mode that mirrors the image while the UI is hidden

\* Reduced system load while the virtual camera is enabled and the UI is shown

\* Prevented camera image from disappearing

\* Made it so that any jaw bone that is assigned is kept in a closed position as most jaw bones in VRM models are set by accident

\* Added a note about Discord's webcam preview being mirrored, while it does show the camera correctly to other users

\* Made it so that the Leap Motion mode is now automatically set, depending on position

Version 1.13.21e:

\* Rewrote texture reading code to finally fix the virtual camera

Version 1.13.21d:

\* Actually increased stability of virtual camera

\* Disabled window resizing after the virtual camera is enabled

\* Made the window resizing allowed option actually enforce window sizes

Version 1.13.21c:

\* Fixed a bug where enabling the virtual camera would enable auto blinking

\* Fixed an issue with the GUID of the virtual camera filter

\* Please uninstall and reinstall the camera if you have issues!

Version 1.13.21b:

\* Increased stability of virtual camera

\* Made camera based blink tracking the default

\* Auto blinking and linked eye blinks now use the Blink blendshape instead of a combination of Blink\_L and Blink\_R, which fixes issues with some models

Version 1.13.21:

\* VSeeFace should now work when placed in paths containing unicode characters such as Russian or Japanese ones

\* Added an option to read out the camera through a different library that can be used if there are issues with a camera not turning on properly

\* Added a microphone switching option to the general settings that is shown if audio lipsync is enabled

\* Added a camera switching option to the general settings that will also automatically restart the tracker

\* Added a virtual webcam function that can be enabled for the current session from the general settings

Version 1.13.20b:

\* Fixed some models not loading correctly

Version 1.13.20:

\* Renamed viseme sliders to lip sync

\* Enabled hybrid lip sync/camera mouth tracking by default

\* The "play audio" button is now hidden when lip sync is disabled

\* Reduced time to lock back on faces after losing tracking

\* Detecting custom eyebrow up and down VRM blendshape clips is no longer case sensitive

\* Fixed an issue with settings for expressions with names containing spaces not being saved

\* Detected tracking anomalies no longer lead to jumpy automatic recalibration

\* The expression detection calibration buttons no longer shortly appear upon startup when the function is disabled

\* Made it possible to customize the Leap Motion tracking toggle hotkey

\* Added support for switching expressions between base and additive expressions, allowing for hotkey based expression mixing

\* Made the expressions Neutral, Fun, Angry, Joy, Sorrow and Surprise default to non-additive, all others to additive

\* Ensured that Neutral is always present and set to be non-additive

\* Updated the help section on expression configuration

Version 1.13.19b:

\* Fixed an issue with expression detection only working after disabling and reenabling it

Version 1.13.19:

\* Added save and reset light position buttons to light settings

\* Added a reflection probe updated with ambient light values to better handle metallic materials

\* Adjusted locomotion to work better

\* Fixed the hue being reset when selecting a desaturated color

\* Fixed tracking point display color being affected by light settings

\* Added support for non-default expression VRM blendshape clips

\* Moved expression options to "Expression settings" window

\* Added an option to switch between trigger and toggle mode for each expression

\* Made expression hotkeys customizable (keys used by other hotkeys cannot be used, some keys may not be recognized)

Version 1.13.18b:

\* Fixed factory reset being broken after the first time

\* Fixed models being dark initially

\* Fixed shadows

\* Shadows are now disabled by default, but can be enabled in the light settings

Version 1.13.18:

\* Fixed broken auto loading of expression detection calibration data

\* Added option to enable hybrid lip sync with camera based mouth tracking when no lip sync viseme is detected

\* Moved viseme and mouth sliders to general settings

\* Added gaze sensitivity slider

\* Added expression stabilizer slider (adds delay to expression changes)

\* Added ambient light setting tab to light settings

\* Added new Shift+R hotkey to help

\* Added release notes to release

Version 1.13.17:

\* Renamed the application to VSeeFace, so a bunch of filenames changed, so please delete the old folder and don't just unpack over it

\* Fixed an issue where facial feature tracking would get instable whenever tracking was lost

\* The general settings window now can scroll to fit more stuff, but it can now only be moved by dragging the title rather than anywhere in the window

\* The window is now resizable

\* Locomotion for the avatar can be enabled in the general settings in case anybody wants to try walking around

\* Eyebrow tracking sensitivity and offset sliders have been added to the general settings

Version 1.13.16:

\* Unreleased test build

Version 1.13.15:

\* Added a factory reset button to reset all settings

\* Camera based eye blinks can now be linked so both eyes blink at the same time

\* Added a blink sensitivity slider

\* Added sensitivity and smoothing sliders for camera based mouth tracking

\* If a jaw bone is set, it won't be accidentally set to some rotation value anymore

\* Settings windows can now be moved around

\* If custom VRM blendshape clips for the eyebrows exist, they will be correctly mixed with expressions rather than overriding them

Version 1.13.14:

\* Unreleased test build

Version 1.13.13:

\* Added focal length setting

\* New default camera position showing more of the body (the old one can still be chosen in the general settings)

\* New mouth sensitivity and smoothing settings for camera based mouth tracking when lipsync is turned off

\* IK should work better for legs (and maybe body) now

\* The help now contains information about eyebrow tracking and the expression detection section links to the video

Version 1.13.12:

\* Fixed disappearing meshes

\* Fixed improper blendshape mixing leading to disappearing fangs

\* Fixed the view with hidden UI being upside down on some systems

Version 1.13.11:

\* First released build on #tech-dev of @Virtual\_Deat's discord