VOCAL DNA

User manual · v0.2.0

Vocal tuning laboratory with note analysis, target editing, formers, tonal reference, audio capture and export.



macOS 13+, Apple Silicon and Intel. AUv2 and independent application.

Scope of this version

Algorithmic analysis of YIN/FFT/chromagram, without a neuronal model. Editing and exporting are not equivalent to all the functions of Melodyne or Auto-Tune.

Capture the implemented editor; it's not a capture of Logic.

Operating guide

VOCAL DNA 0.2.0 - LAB of VOCAL AFINACTION Experimental edition is a functional edition for Logic Pro/Mac Universal

Universal Binary Compatibility: Apple Silicon (arm64) and Intel (x86_64), macOS 13.0 or later. Compiled on Mac M2 Pro with macOS Ventura 13.4.1. Tests run on arm64 and x86_64 using Rosetta 2. It hasn't been tested on a physical Intel Mac. Logic Pro installed on the computer: 10.7.9. Main format: Audio Unit v2 (.component), mono or stereo effect. A standalone application for exploring the interface is also included.

REAL STATE OF THIS INTRAGRACE It is a compiled audio plugin, with actual processing, editing and export. It's an early experimental version, not a complete commercial equivalent to Melodyne or Auto-Tune Pro. The analysis is algorithmic (YIN, FFT, chromogram), with no trained neuronal model. The name — intelligent — describes automation of analysis and correction; it does not imply an AI model that is not included.

Version 0.1.0 is up to date. The 0.2.0 is charged and tested directly as AUv2 in an isolated process, without installing it: AudioUnitRender, formats, restart, latency, buffers and recovery from the previous state. His records are in docs. The 0.2.0 auval is pending until installed with Logic closed. The interface of this compilation is rendered for revision. The actual voice listening test and use within a Logic session are still pending: the screen control service was not available.

Opening up in logic

1. It closes and reopens Logic Pro so that it can explore the new Audio Units.

2. On a mono or stereo voice track, open an Audio FX slot.

3. Search for Audio Units > Vocal DNA Lab > Vocal ADN.

4. If it doesn't appear, open Logic Pro > Settings > Plug-in Manager, search for Vocal DNA and use Reset & Rescan Selection. Do not delete the caches of other plugins.

Update 0.2.0 has not been installed. The installed copy is still 0.1.0. Before you run the .pkg save your projects and close Logic. The installer blocks the operation if Logic is open or cannot check it. The package allows for personal installation only, without an administrator, and saves the previous copy in ~/Library/Audio/Plug-Ins/VocalDNA Backups/. The component has a local ad hoc signature. The .pkg has no Developer ID signature or notarization. No macOS protections have been disabled.

First try: AUTOMATIC AFINACTION - Insert the effect into a single voice, with only one note at a time. - Select root and scale: Chromatic, Major, Minor or Custom. - Start with Natural Lead, Mix 100%, Formant 0 and Preserve Formants enabled. - Reproduce Logic. INPUT indicates the note detected; CORRECTION shows the change. - Small retune produces a faster correction; Humanize the smoothness higher. - Use BYPASS to listen to the original with the same latency. - Monitor the output meter when modifying Output.

Option A: Import an instrument with FILE reference. It's estimated to be a shade. Press Learn KEY to copy to the controls or activate FOLLOW REFERENCE. Option B: In the Side Chain menu of Logic, select the bus of your instrumental. Play multiple compasses and activate FOLLOW REFERENCE.

The confidence indicator is a relative measure, not a calibrated probability. Listen and confirm the pitch: Modulations, pass notes, and ambiguous chords can produce another reading. The plugin follows a greater/ lesser hue; it does not transcribe or copy the melody of a complete mix, nor separates its sources.

Manual edition

1. Play your voice in Logic and press TRANSFER; press STOP TRANSFERE when you're done. They capture up to 120 seconds per operation. You can also use IMPORT VOCAL with compatible WAV, AIFF, FLAC or MP3.

2. The screen displays the audio, its detected notes and the original pitch curve.

3. Press SNAP NOTES to set the notes to the selected scale.

4. Drag a note vertically or use NOTE PITCH for semitone adjustments with a resolution of 0.01. Activate the use of NOTE EDITS to listen to the targets.

5. Alt + drag moves a note in time; Shift + drag changes its duration.

6. Right-click allows you to split a note, restore it or remove its correction.

7. NOTE GAIN changes the volume of the selected note on the exported WAV.

8. TIMING 1/16 adjusts position and duration to semicorches according to the Logic tempo.

9. UNDO/REDO recover up to 32 steps of note editing.

10. Play CLIP plays the transferred/imported audio through the effect. STOP stops this playback. Logic must keep track audio active.

Live insertion and PLAY CLIP apply the tone changes to the original voice positions. The changes in TIME, DURATION and GANCE per Note are heard in EXPORT WAV; they do not rewrite Logic regions automatically. The destructive edition of a region of Logic and ARA are not implemented. Import the exported WAV to a track to listen to all the changes together.

Double-click on a bead: write value. Shift + drag: fine adjustment. The fields accept units and decimal commas; they reject text, infinite values, and values outside the range, retaining the previous setting.

Wheel: move the piano recorder. Cmd + wheel: change the time zoom. Shift + wheel: shift the time view. VIEW: Seconds visible. Arrows up/down: move selected note. Delete: remove the correction from the note. Cmd+Z / Cmd+Shift+Z: undo/re-do. Custom's C...B buttons represent intervals relative to the root.

EXPORT WAV writes 24-bit PCM stereo to the frequency of the original file. It compensates for the 2048 latency samples and applies tuning, notes, time, volume, formants, transposition, mixing and output. First, write a temporary file. Extreme changes in duration or tone can produce artifacts.

Logic keeps parameters, time source, audio route and note edits. The transfers are also saved as WAV in: ~/Library/Application Support/VocalDNA/Captures/ The imported files are linked by their original route. Keep those files. The audio is not embedded within the Logic project file. To move a session to another Mac, save the original/transferred WAV and export it next to the project. If the source is missing, IMPORT VOCAL reattaches it and retains the restored notes. Make sure you pick the exact same original shot.

A/B compares parameters settings; does not create two versions of the note editing. The four presets adjust Retune, Humanize, Drift and Vibrate without changing the tone or the rest of your controls. Their values are automatable in Logic.

LATENCE AND LIMITES Delayed and measured: 2048 samples (42.67 ms at 48 kHz; 46.44 ms at 44.1 kHz). To record by monitoring the voice, this latency can be perceived. It is oriented to the editing and reproduction of already recorded voices. Monophonic detector: approximately 55-1100 Hz. Don't tune chords or polyphonic choirs on one track. Use a single voice acting. Total engine correction limited to ±12 semitones. Further objectives, added transposition or strong changes in duration can reach that limit.

Maximum 120 s per capture/import and 2048 notes per clip. Formants: approximate spectral compensation, not neuronal vocal reconstruction.

Source/: DSP engine, audio unit processor and interface. Tests/: frequency, latency, capture, editing, export, sidechain, native audio unit and installer protections. Fixtures contains an actual state of 0.1.0 to check that its 16 parameter IDs remain the same. Packaging/: .pkg sources and uninstallation/restoration utilities. third_party/: JUCE 8.0.12 and its licensing notices. Build.command: compiling AU and Universal application, and testing with CMake 3.22+ and Apple Command

Line Tools. The JUCE code is automatically extracted from the included file. docs/: functions, validation and captures of the actual interface.

With Logic closed, run the full package's Desinstalar Vocal DNA.command. Remove only this component to a recoverable folder; do not delete audio, projects, or captures. Installer's receipt can remain. Restore previous version.command restores the most recent backup, while also preserving the version it replaces. It doesn't run automatically.

License of this entry Code delivered under AGPLv3, with text at LICENSE.txt. JUCE also includes an alternative trading mode described at third_party/JUCE-LICENSE.md. This package contains the code for the compilation delivered.