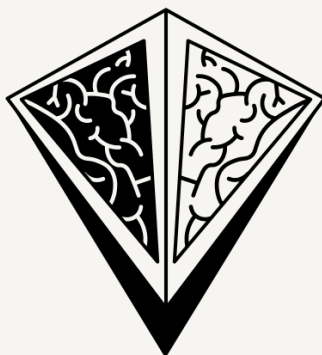


# The Concatenator: Manual

by DataMind Audio



DATAMIND  
AUDIO

## System Requirements

The Concatenator requires Windows 10 or later or macOS 10.15 or later. Both Intel and Apple Silicon processors are supported on macOS. Only x86\_64 CPUs are supported on Windows. A minimum screen resolution of 1280x720 is recommended.

The Concatenator can be installed either as a VST3 or an Audio Unit plug in. All major DAWs are supported (apart from Avid Pro Tools).

# Introduction

Welcome and congratulations on purchasing one of the most innovative machine learningbased audio tools available.

The Concatenator requires two things:

1. an input audio source from live mic, pre-recorded sound or synth.
2. a library (we'll call it a corpus from now on) of audio files. This can be a single sound file or potentially 100s of sounds.

Incoming audio signals get matched in real-time with fragments of sound from sound sources inside your library of audio files.

This is digital audio alchemy at its best, enjoy.

## Getting Started

Once the vst has been installed on your system, open up your DAW/Ableton/MaxMSP and drop the vst into an FX chain. Once loaded (and this may take a few seconds), click to get The Concatenator's interface up and the rest is self explanatory.

## DAW Settings

The Concatenator will function at any sample rate and any block size but for optimal performance you should set your DAW buffer size to 2048 samples. Performance of the plugin will decrease as the DAW buffer size gets smaller. Increasing the buffer size above 2048 samples has no benefit.

The optimal sample rates are either 44.1kHz or 48kHz. The plugin will also function at higher sample rates and increasing the sample rate will decrease the effective latency of the plugin. However, operating at higher sample rates will also decrease the spectral accuracy of the plugin i.e. pitches may not be tracked properly at higher sample rates.

We plan to address both of these issues in a future version of the plugin.

## Add audio files

Click Add Files and a menu will appear allowing you to search for a folder or individual sound files, you can also drag and drop files from your finder directly onto the plugin and these will load in and get added to the list.



If you choose to add a lot of sound files, be patient whilst they are loaded and analysed by DataMind's incredible analysis algorithm. It is also possible to drag and drop files onto The Concatenator, again a short wait is required whilst they are processed, but then, everything is back to real-time.



You may need to wait a few seconds whilst the corpus loads

## Mute sounds in your corpus

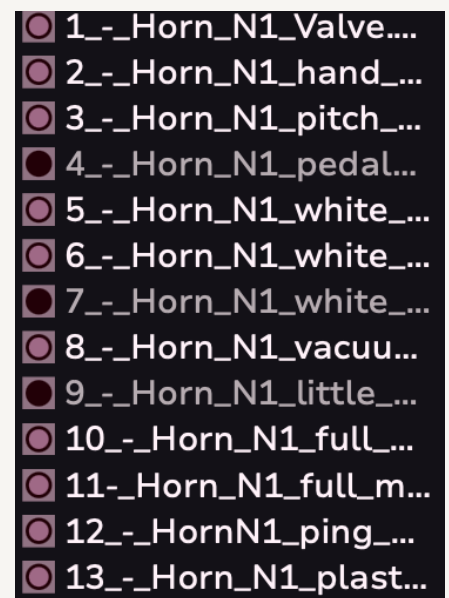
You can mute sounds in your corpus by clicking on the little button to the left of the file name.

Beware though, if you have a very large corpus of audio files, then each time you mute or unmute a sound, the library needs a quick rescan and this can take a few seconds whilst the corpus updates.

You can mute sounds in your corpus by clicking on the little button to the left of the file name.

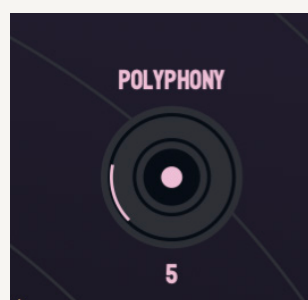
Beware though, if you have a very large corpus of audio files, then each time you mute or unmute a sound, the library needs a quick rescan and this can take a few seconds whilst the corpus updates.

Mute and unmute sounds in the corpus easily



## Parameters and settings

### Polyphony



This is the total number of “voices” (overlapping grains) that The Concatenator can play from the corpus at a time. Increasing polyphony will increase CPU usage, but will also allow more complex variations of layered grains to recreate an input signal.

Note: higher is not always better, increasing Polyphony too much can lead to a smudgy sound. Playing around with lower polyphony settings can give interesting results!

### Variation



This knob controls how long The Concatenator waits until choosing the same moment in the corpus for any of the voices. A larger value will wait longer until choosing the same moment in the corpus. A smaller window may choose the same moments in rapid succession, leading to a glitchy “stuttering” effect.

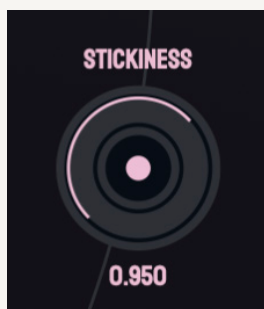
### Particles



This knob controls how much computational effort goes into finding grains that match the pitch and rhythm of the input audio. A higher value of this may lead to more accurate pitch and rhythm reproduction, at the cost of more computation and eventual CPU overload. A lower value will run very quickly, but will not find matching slices as accurately.

*Note: higher is not always better, there are some interesting sounds to be had at lower particle settings!*

## Stickiness



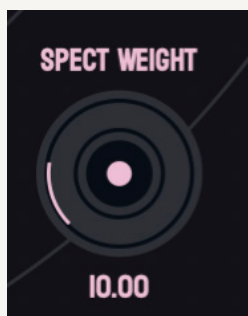
This controls the average lengths of the grains in each voice. Making this closer to 1 leads to longer grains, and making it close to 0 leads to shorter grains that jump around a lot.

## Amp weight



This controls how tame the amplitude of the output signal is. Making this closer to 1 leads to smoother overall variations in the amplitude, even if the result doesn't fit the target as well. Making this smaller will allow larger fluctuations in amplitude.

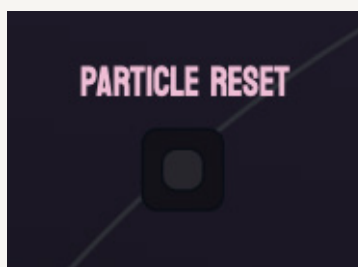
## Spect weight



Increasing this will prioritize how well the pitch and rhythm of the input signal are represented in the output at every moment, but it may also lead the grains to jump around a bit more.

*Note: Setting this to 0.0 will mean that the spectral fit of each grain is ignored entirely! Combined with a high stickiness setting close to 1.0, this can be a fun way to effectively 'freeze' the grains. However, do be aware that setting Spect Weight to 0.0 can cause unintuitive interactions with other functions, especially Particle Reset.*

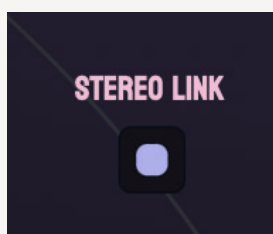
## Particle Reset



The particle reset button can be used to randomise the states of each active particle, which forces the plugin to choose new sounds. Experiment with this while using a high stickiness and a low spectral weight to hear the effect. You can trigger a particle reset by clicking the particle reset button, or by pressing 'R' on your keyboard while the plugin interface is focused.

Note: If Spect Weight is set to 0.0 when the particle reset button is pressed, you will experience 'grain splattering' where the algorithm is rapidly switching between random grains. To fix this, simply increase Spect Weight to a non-zero value.

## Stereo link



Toggles between stereo and dual mono processing mode. (Dual mono will double CPU load).

## Input



Input signal gain.

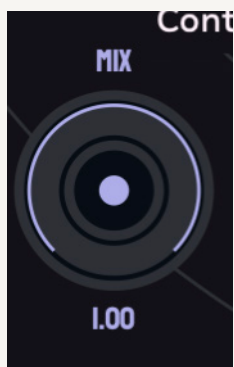
## Output



Output signal gain.



## Mix



Controls the mix of the output of The Concatenator and a pass-through of the input. A value at 1 means 100% output from The Concatenator.

## Presets

The Concatenator has a useful preset system for saving and loading the state of the plug-in. We have provided a starting bank of presets which can be explored by clicking the left and right arrows on the preset manager button.

To explore all available presets, click on the library icon next to the left arrow icon, and you will see a window with all available presets appear. Click on the preset for it to load.

You can easily restore the plug-in to a default state by clicking on the Default preset.

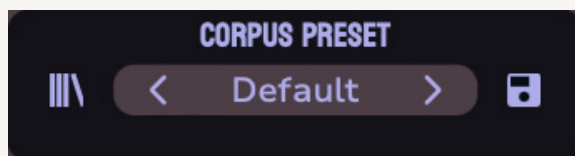
To save a new preset, click on the floppy disk icon to the right of the preset manager. A window will pop up with a prompt to save the current plug-in state. Give the preset a name and then click save or press enter.

To update/overwrite a preset, simply save a new preset with the same name.

A mechanism for deleting presets will be added in a future version.

Note: presets do not hold information about the currently loaded corpus, this functionality is described in the next section about Corpus Presets.

## Corpus Presets



You will quickly find that you want to save a collection of files so that you can easily come back to them later. You can make use of the Corpus Preset mechanism in the plugin to do this. Corpus Presets function in the exact same way as a regular preset except that they only store information about the currently loaded corpus. This means that you can mix and match different plugin presets with different corpus presets easily.

Initially, there will be only one available corpus preset: the default, blank, corpus. To save a new corpus preset, simply click the floppy disk icon to the right of the corpus preset manager. This functions in exactly the same way as saving a regular plugin preset.

When you save a corpus preset, you will be asked if you also want to save an accompanying plugin preset. If you select yes, a plugin preset with the same name as the corpus preset will be saved containing the current plugin state. Now whenever you load that corpus preset, the corresponding plugin preset will also be loaded.

Note: Corpus presets remember which files are loaded based on their file path. If you delete or relocate samples that you have saved in a preset, then that preset will no longer be able to load those samples.

In a future version, we plan to introduce a way to fully package/consolidate corpus presets so that they are not affected by samples being deleted or moved.

## Settings dialogue



You can access the plugin settings menu by clicking the gear icon in the top left of the plugin interface.

The settings menu includes settings for sizing the plugin user interface. You should only need to use these settings if for some reason the plugin interface is too large for your screen.

In the performance section, you will find the following options:

**Use Mel:** This toggles the use of the Mel spectrogram. Using Mel spectrograms drastically reduces CPU load so it is recommended to leave this setting on. In some extreme cases, disabling Mel spectrograms may improve the accuracy of the plugin output.

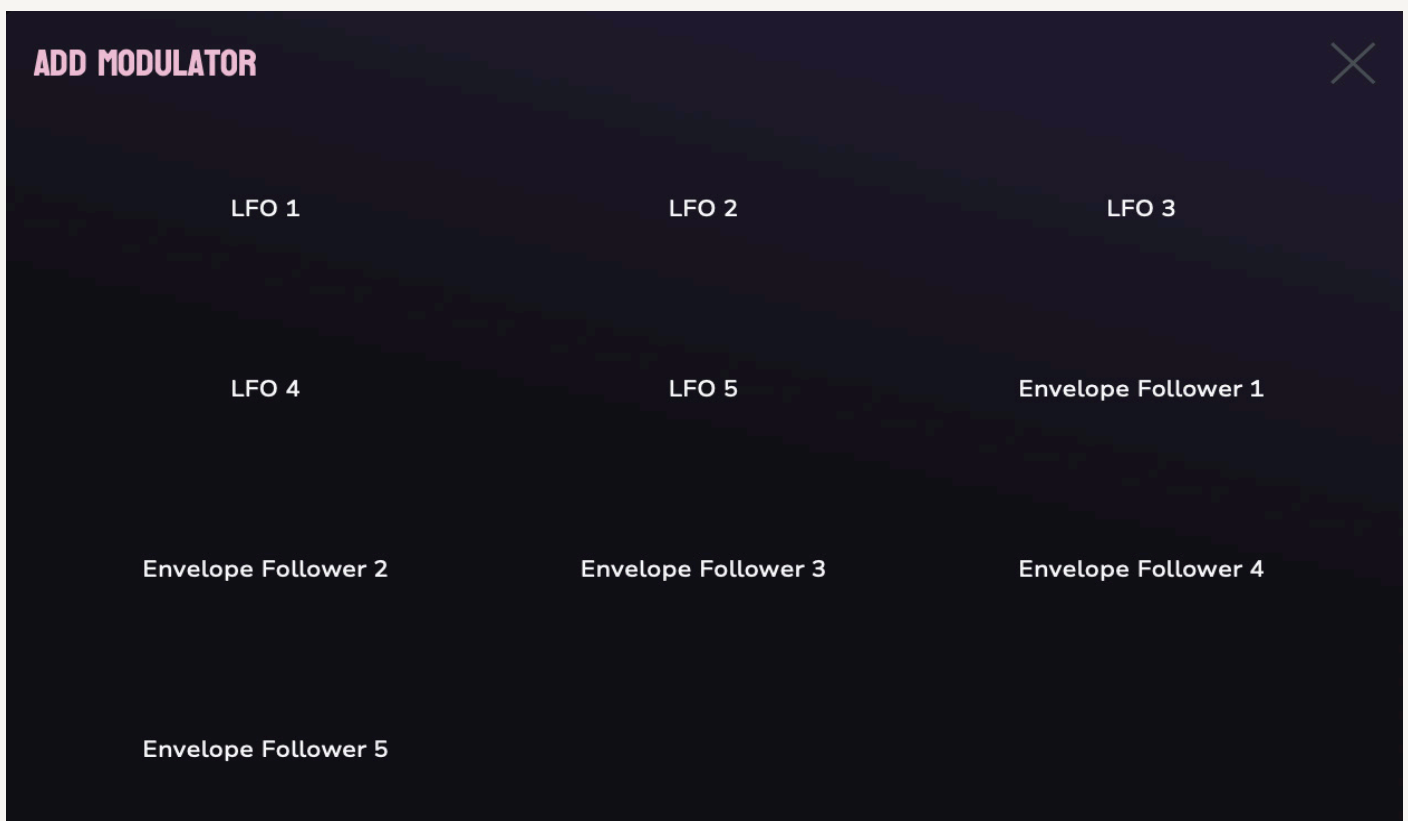


# Modulators

You have access to five LFOs and five envelope followers. These can be used to modulate parameters within the plugin.



Click on the + sign underneath the MODULATORS tab



This brings up a choice of up to five LFOs and five envelope followers.

Select an LFO, note there are five LFOs and five Envelope followers



Choose one and see it show up on the right hand side.

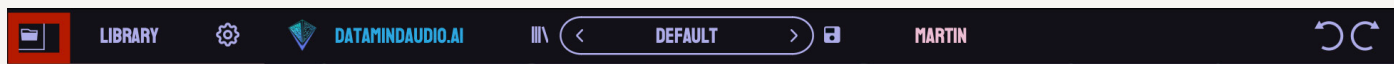
It's easy to map a modulator to a parameter

Apply the LFO by dragging a cable from the little dot on the top left of the modulator to the centre of the parameter you wish to modulate.

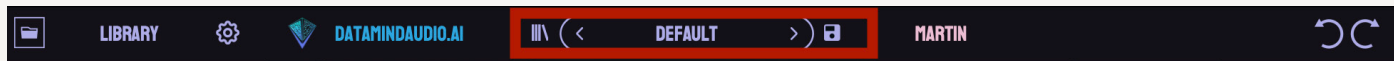
CAUTION if applying modulation to polyphony and to particles parameters as these are directly linked to CPU load.

## Anatomy of the top of the plugin

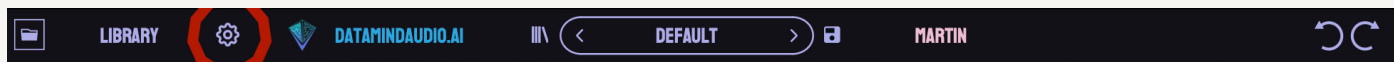
View the plugin data folder, presets and other materials are stored here



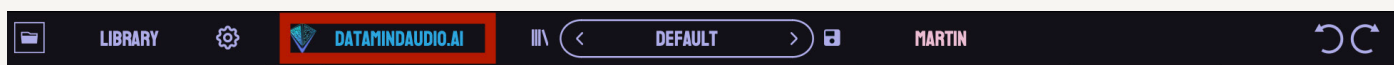
Save, recall and view presets



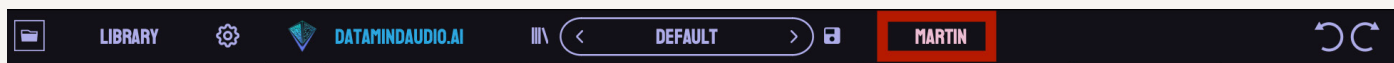
Open the settings pane



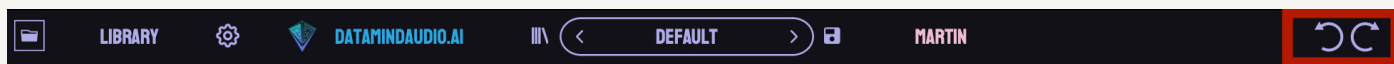
View plugin information and access log files



Username of currently logged-in license holder



Undo and redo plugin states



## Getting help

DataMind are here to help you. Join our discord to reach our team with queries. You can also email us, but by joining our Discord channel you have direct contact with the developers working on the plugin!


Discord: [discord.gg/x4AKrZZVmd](https://discord.gg/x4AKrZZVmd)

Email: [support@datamindaudio.com](mailto:support@datamindaudio.com)

P.S. Information about the plug-in build, directories used by the app and log files can be found by clicking on the `datamindaudio.ai` button in the top-left. If you encounter any issues and would like to file a bug report, please email us or post a message on our Discord bug-reports channel and attach the `Log.txt` file that can be found in the Logs folder. Thank you!

Note: The `Log.txt` file may contain the paths of files that have been added to the corpus. If you are working on something super secret and don't want to share the log file on a public channel, don't hesitate to email us or DM either Robin or Luca on the Discord.

**ABOUT** ✕



**DATAMIND  
AUDIO**

Plugin Version: v0.2.7  
Plugin Build Id: caa1803  
Plugin Type: Release  
Compiled: 19:22:53 Nov 27 2024

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