



Librarian

User Manual - Version 1.4

December 2024

Acknowledgements

Developers/Contributors:

- Mike Moger (meanmedianmoge)
- John Breton (Ellipses22)
- Srandерley
- Jonathan H. (djigneo/apparent1)
- Rob S. (smithrobs)
- Matthew A. (mtallen)
- Alex M. (qckpckt)
- Marc L. (marcuslupinus)

Special thanks to our beta testers and those who submitted bugs or feature requests ahead of this release.

And lastly, a huge appreciation to the entire Empress Effects team for the support and assistance in developing this application!

EULA

This software is distributed under GNU General Public License 3.0. Please familiarize yourself with the Terms & Conditions of copyleft licenses like GPL (and others) here: <https://www.gnu.org/licenses/gpl-3.0.en.html>. ZOIA and its patch binary format are a trademark of Empress Effects, Inc and are used with permission. Neither the developers nor Empress Effects, Inc. are liable for any issues caused or raised by the use or modification of this application. By installing the application you agree to these terms. All source code, documentation, issue reports, and release candidates are hosted via Github: https://github.com/meanmedianmoge/zoia_lib.

Table of Contents

Acknowledgements **1**

EULA **1**

Table of Contents **2**

Welcome **3**

 Loading the App Tabs

PatchStorage tab **4**

 Patch Metadata

 Searching Downloads

 Refresh Patch List

Local Storage tab **6**

 Check for Updates

 Export and Delete

 Version Histories

 Editing Patch Metadata

 Uploading Patches

 Updating Patches

 Patch Visualizer

 Patch Expander

SD Card tab **13**

 Selecting the SD Location

 Managing SD Directories

 Moving Patches

 Import Functions

 Setting the Export Dir

Folders tab **16**

 Local Storage table

 Moving Patches to a Folder

 Folder Operations

Additional Features **18**

 File Menu

 Sort Menu

 Options Menu

 Help Menu

 Documentation

Local Backend **20**

Changelog **21**

 New Features

 Bug Fixes

Future Plans **21**

Welcome!

Welcome to the ZOIA Librarian! The Librarian aims to make using ZOIA much easier. Whether you are a major patch creator or a general ZOIA user, the ZOIA Librarian has features that can help anyone organize and manage their patches.

After you have downloaded and installed the ZOIA Librarian, the application can be launched from an executable on Windows or application file on OSX. Double-clicking on ZOIALibrarian.1.4.exe or ZOIALibrarian.1.4.app file will start the app. You will be greeted with a brief splash screen as the application loads.

If this is your first time launching the application, the start-up process will take longer than usual, as all patch information is retrieved from PatchStorage. Subsequent start-ups will not need to retrieve as much information, significantly improving the loading time.

The application is split into 4 main tabs.


PatchStorage	Local Storage	SD Card	Folders
--------------	---------------	---------	---------

These tabs allow you to navigate between different features of the Librarian. The following sections of this manual will focus on each tab and explain the features specific to that tab:

- **PatchStorage** is where you quickly browse and search through all ZOIA patches that are currently hosted on PatchStorage. All patch notes and meta-data from the site are included, giving you a convenient way to explore and download interesting patches along the way.
- **Local Storage** is where you can view and edit all of the patches in your local library. Update the tag information for patches, explore groups of patches that were saved together as Version Histories, and see the details of each patch as if you were using your ZOIA with the Patch Visualizer and Patch Expander.
- **SD Card** is where you manage the folders and patches on your SD card. Reorder the patches within each SD card folder without hassle and import multiple patches at once for simplicity.
- **Folders** is where you can easily create folders of patches, ready to be exported to the SD card. Drag-and-drop multiple patches at once from your local library, move them around, and save for a dynamic way to handle multiple SD folders.

PatchStorage

The PatchStorage tab is where you quickly browse and search through all ZOIA patches currently hosted on PatchStorage. On the left side of the screen, you will find a table containing information about every patch currently available on Patchstorage, including the title, user tags, categories, and the date the patch was uploaded or last updated.

Title	Tags	Categories	Date Modified	Download
 JohannLooper V2--a granular looper/arpeggiator	Arpeggiator, granular, looper, still hard to explain, and time shifter	Effect and Sound	2019-11-08	Download patch

When you select a patch by clicking on the circle beside the patch title, the right side of the screen will populate with additional information about the patch. This displays the author and license, the like, view, and download counts, and can even include a clickable preview link (if the author has included one).

JohannLooper V2--a granular looper/arpeggiator
Author: Christopher H. M. Jacques
Likes: 46
Downloads: 2477
Views: 6251
License: None provided
Preview: [Click here](#)

Patch Notes:
Using a series of cascading loops, the Johann Looper warps time, making sound seem to coalesce out of nothing, arpeggiate of its own accord, and change its nature from moment to moment. At its default settings, it sounds rather like an orchestra that accompanie your melody.

Johann Looper 1.1 revision notes

The revision mostly fixes what firmware 1.02 broke. In the new firmware, you can't save the forward/reverse state of a looper. If you heard Johann before 1.02, this is the same patch, sonically.

But I also used it as an opportunity to redesign the front page. Now, it has a pretty light show that tracks the loops, and some of the controls are more accessible, and others have better representation.

Front page:
.....[M1][M3]
....[Mix]....[Pad mix].....[M2][M4]
.....

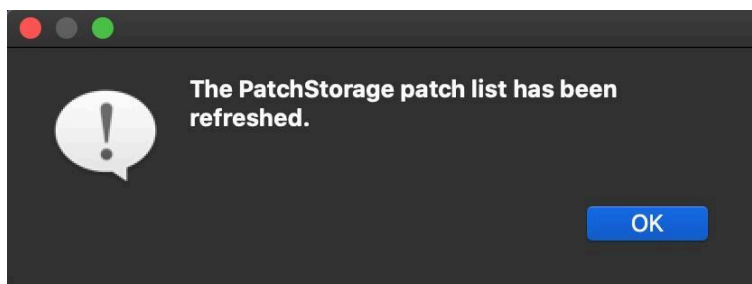
Above the table on the left, there is a search bar. You can search for patches by author, title, tag, category, and date in the PatchStorage tab. To initiate a search, enter the query you want to search for and hit Enter/Return.



Downloading patches is as easy as hitting the download button to the right of the patch you want to download. Once the download is complete, this button will disappear so that you do not accidentally download the same patch twice. Even on subsequent launches of the application, if you have previously downloaded a patch and it still exists within a Librarian, the button will not appear.

Title	Tags	Categories	Date Modified	Download
JohannLooper V2--a granular looper/arpeggiator	Arpeggiator, granular, looper, still hard to explain, and time shifter	Effect and Sound	2019-11-08	Downloaded

To the right of the search bar, there is a “Refresh Patches” button that will allow you to refresh the patch list to reflect the patches currently available on Patchstorage. The app also updates this list each time it is opened. If you refresh the list, a pop-up will let you know when it has finished.



Above the search bar is the “Download All Patches” button, which will download all currently hosted patches from PatchStorage. Note that this download process is very time-consuming.

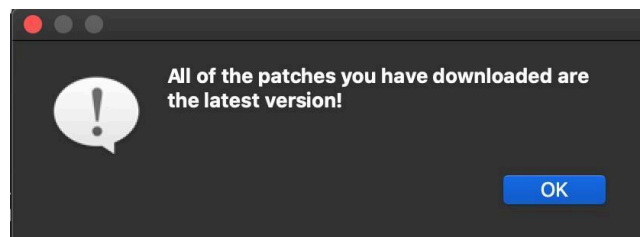
You can view all the patches you have downloaded by switching to the Local Storage tab, which will be covered in the next section.

Local Storage

At first glance, the Local Storage tab will look very similar to the previous tab. However, there are many additional options to explore. Searching behaves the same as it does in the PatchStorage tab. Additionally, there are two new buttons to the left and right of the search bar. A “Back” button and a “Check for updates” button. The “Back” button will initially be inaccessible.



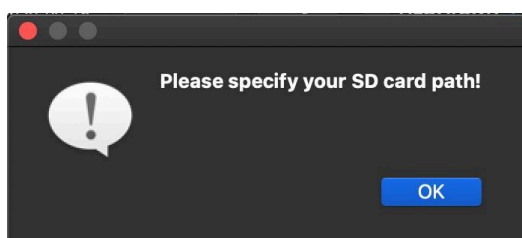
The “Check for updates” button will automatically check all the patches you have within the Librarian to see if they have been updated on PatchStorage. If the patches have been changed, these updates will automatically be retrieved and saved. Most of the time, however, this is the message you will get when clicking the button.



Within the patch table, there are two additional options (Export and Delete) and a ticker (Rating). To delete a patch from the Librarian, click the “X” button beside the patch.

Title	Tags	Categories	Date Modified	Rating	Export	Delete
JohannLooper V2--a granular looper/arpeggiator	Arpeggiator, granular, looper, still hard to explain, and time shifter	Effect and Sound	2019-11-08	0	Export patch	X

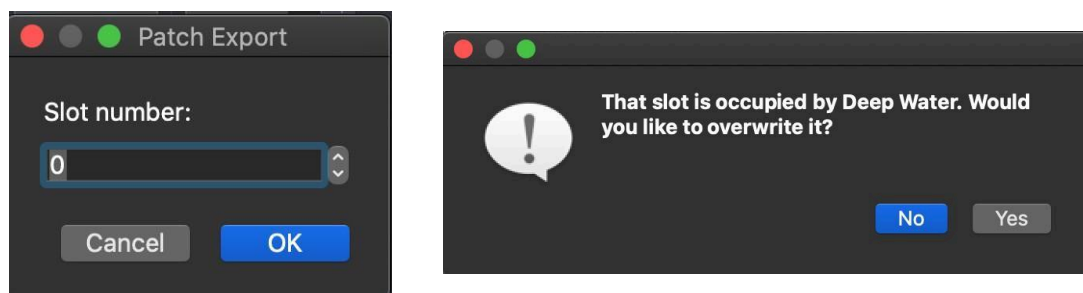
When you click on the export button for the first time, the message below is most likely what you will see. If you click “OK”, you will be able to select the SD card used for patch transfer. Alternatively, to select your SD Card location, look for the “File” option on the taskbar at the top of the screen, click it, and then click “Specify SD Card Location”.



File	Sort	Options	Help
Specify SD Card Location			⇧ S
Import A Patch (.bin)			⌘ I
Import Multiple Patches (directory)			⇧ I
Import Version History (directory)			⇧ V

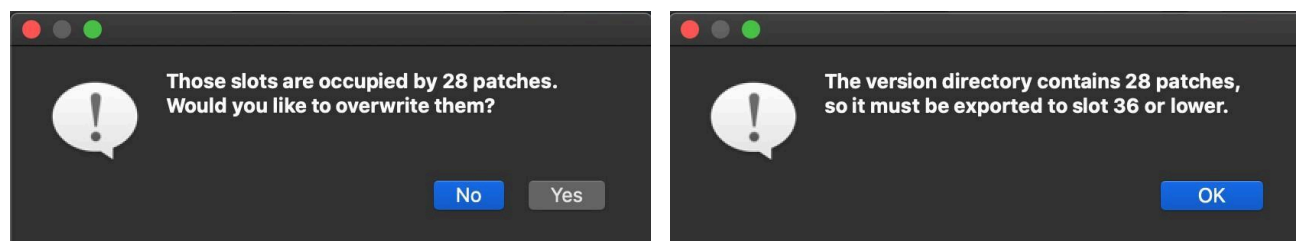
By default, exporting from the Local Storage tab will export patches to a folder called “to_zoia”. You can choose a different directory location and view the exported patches in the SD Card tab.

When you export a patch, the application will detect if there are patches in the directory already and initialize the window selection with the next-available slot number. You will be warned by a pop-up if you try to overwrite an existing patch.



Certain patches are labeled as “[Multiple Versions]” - these originated as a collection of multiple patches, either downloaded from PatchStorage or mass-imported from the SD card. Instead of requiring a unique patch id, the Librarian groups these patches together, each one as a different version. You can export an entire version history by clicking “Export patches”, or delete all patches within by clicking “X” on the row.

Exporting an entire Version History to the SD card may require a lot of overwriting of patches, or it may not fit all of them without altering the slot number.



To access the Version History view, click on any patch that has “[Multiple versions]” in its name. Upon entering the Version History view for a patch, you can individually rate, export, and/or delete specific versions. To exit this view, click the “Back” button.

Title	Tags	Categories	Date Modified	Rating	Export	Delete
Schroeder Reverberators - three takes on a classic reverb design [Multiple Versions]	all-pass filter, comb filter, and schroeder reverb	Effect	2019-12-05	0	Export patches	X

Title	Tags	Categories	Date Modified	Rating	Export	Delete
Schroeder Rvrb	all-pass filter, comb filter, and schroeder reverb	Effect	2019-12-05	0	Export patch	X
APF	all-pass filter, comb filter, and schroeder reverb	Effect	2019-12-05	0	Export patch	X
Diffuse Verb	all-pass filter, comb filter, and schroeder reverb	Effect	2019-12-05	0	Export patch	X

The Local Storage tab offers edit functionality for patches you’ve downloaded or imported. To modify the patch tags or categories, simply double-click on the cell you wish to edit and start typing. Once you have finished, click elsewhere in the application or hit Enter/Return.

Title	Tags	Categories	Date Modified	Rating	Export	Delete
<input type="radio"/> JohannLooper V2--a granular looper/arpeggiator	Arpeggiator, granular, looper, still hard to explain, and time shifter				Export patch	X

Patches in your Local Storage can also be rated on a scale from 0 to 5. Use the up/down arrows or double-click the box to enter your rating. Ratings can be applied for an entire version history as well as individual patches.

Title	Tags	Categories	Date Modified	Rating	Export	Delete
<input type="radio"/> JohannLooper V2--a granular looper/arpeggiator	Arpeggiator, granular, looper, still hard to explain, and time shifter	Effect and Sound	2019-11-08	3	Export patch	X

The right-side upper panel displays the patch metadata, which can also be edited. To do so, first select a patch on the left-hand side of the screen by clicking on the circle to the left of its name, then make the edits you wish to add or remove.

Update Patch Notes

Upload to PatchStorage

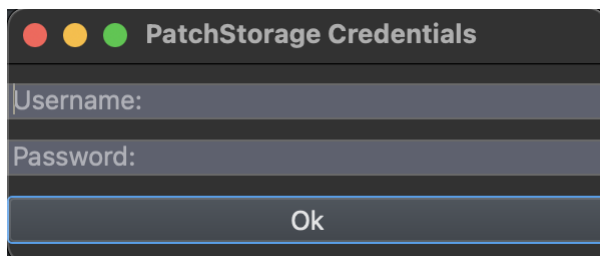
JohannLooper V3 -- a granular looper/arpeggiator
 Author: Christopher H. M. Jacques
 Likes: 116
 Downloads: 6508
 Views: 4762
 License: Creative Commons Attribution Share Alike 4.0
 Preview: [Click here](#)
 Patch Notes:
 Using a series of cascading loops, the Johann Looper warps time, making sound seem to coalesce out of nothing, arpeggiate of its own accord, and change its nature from moment to moment. At its default settings, it sounds rather like an orchestra that accompanies your melody.
 The loops fade in and out, thanks to a quadrature LFO set-up, making sounds seem to rise and fall out of nowhere. Different tracks run at different pitches, some are reversed. They are all fed into a hall reverb, set fully wet, which smears them. At fast tempos, looper arpeggiates quite nicely. At slower speeds, it seems to stretch time, as the loops trail behind their source, echoing it at odd intervals and pitches.

Once you are done, click the “Update Patch Notes” above to save these changes. Two notes about making edits to patch notes or information:

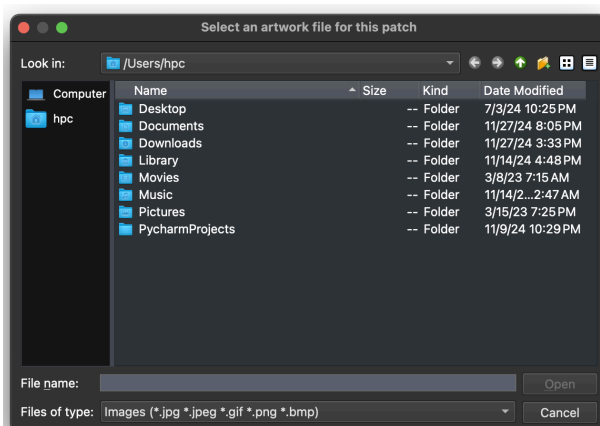
- All headers in the patch notes can be modified.
- Tags and categories cannot be mass modified for patches that contain multiple versions, however each version can have their tags and categories individually modified.

A feature we introduced in 1.3 was for patch upload to PatchStorage. In 1.4, it is now possible to update PS patches (only for ones created by you). Click “Upload Patch” to start the process of this upload/update. It requires a couple steps of user-input to function properly.

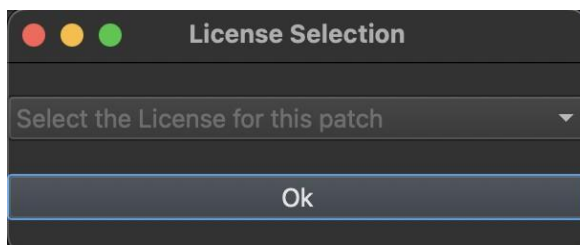
First is the authentication stage - by entering your PS account credentials, the PS API will generate a unique token that is submitted with each request. Usernames and passwords are not stored or saved in any manner, and are only necessary to provide a method to acquire that token.



Next is an artwork file, which can be any of these formats: png, jpg, bmp, or gif. For updates, the app will use the existing image, otherwise it will prompt for a new file.

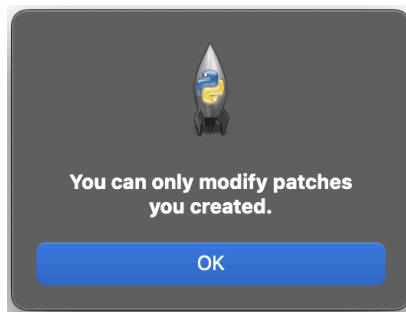


Finally there is the license selection - this assigns a license to the patch which governs how you'd wish it to be shared. Choose one from the drop-down menu and click “Ok”.



Once submitted, and assuming no errors, the patch will appear on the PS site. In addition, the patch metadata will be updated to PS standards.

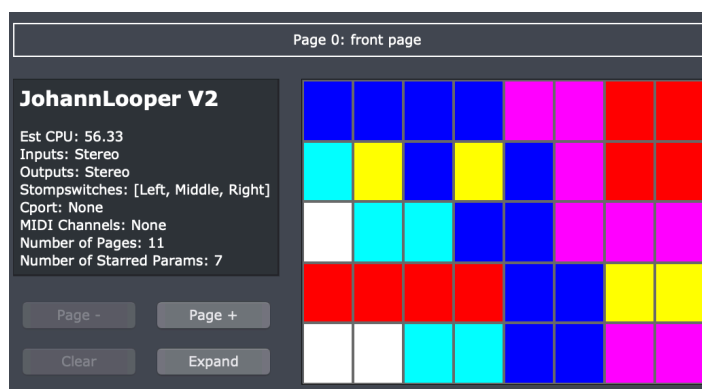
The process for patch updates is similar, except there is a validation check to ensure that you are the same user who uploaded the original patch - this is to avoid your hard work being overwritten by anyone else! You will see this message if you attempt to update a patch that wasn't yours.



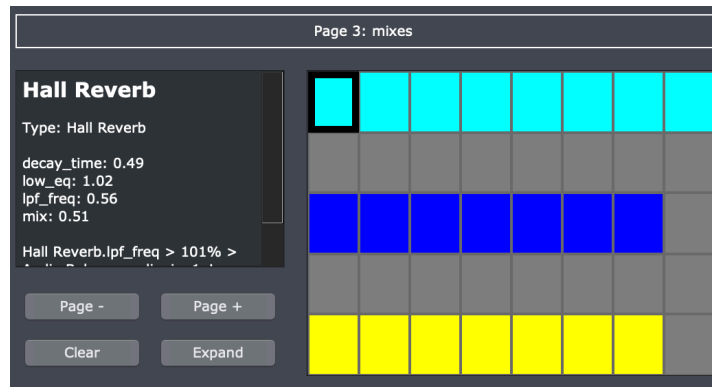
Otherwise, the same steps will be taken as the upload function. Currently, the update function only works with single-version patches. Future updates will enable it for versioned patches..

Located in the right-side lower panel is the Patch Visualizer, which offers a way to explore the layout and routing of a patch before loading it onto your ZOIA. There are two primary types of information present in the visualizer:

- Patch - displays the patch name, estimated CPU (not including connections or dynamics), I/O, MIDI channels, stomp-switches used, cport connections used, the number of pages, and the number of starred parameters.

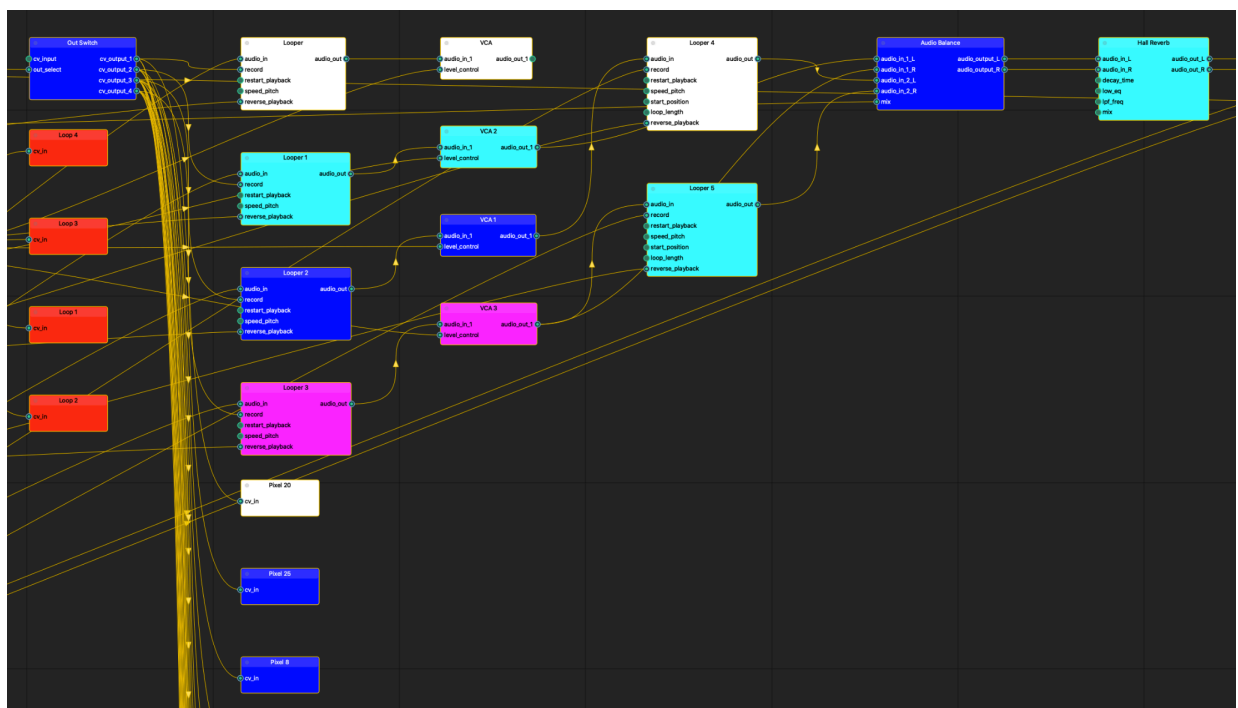


- Module - displays the module name, type, options chosen, parameter values, starred parameters (plus the MIDI CC if assigned), and outgoing connections.



Please note that certain patches may fail to display in the visualizer panel - this is likely due to them being saved on deprecated ZOLA firmware. If you find a patch that doesn't display a visualization as-is, an easy fix is to load it onto your ZOLA, save with a more recent firmware, and re-import the patch (deleting the old version in the process).

Within the visualizer is a new button, “Expand”. Clicking this will construct an expanded view of the patch in a separate window, using a node-graph representation (for our purpose, modules = nodes and connections = edges). Nodes are color-coded to match the grid color used for the module on ZOLA and edges flow from left to right using arrows, aligning with the routing of the patch. There are a number of controls and display options available, which we’ll explore in detail next.

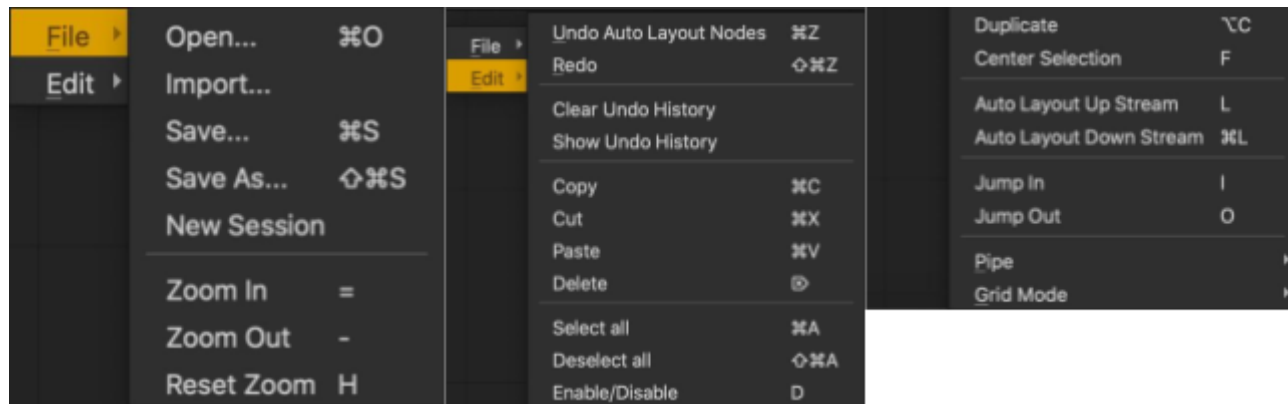


Please note that certain connections may fail to display in the expander panel - this is to avoid overloading the constructor with complex routings it cannot optimally show.

The main interactions with this feature are done by moving, dragging, and zooming. By default, the zoom is minimized to show all the nodes in the graph, but can be adjusted by the scroll-wheel or with the +/- keys (F resets).

Every node and edge is highlighted to start, so clicking and holding your mouse will move the entire graph around the window. You can deselect by clicking anywhere else in the window, or Alt + click-and-drag to highlight a group of nodes and edges.

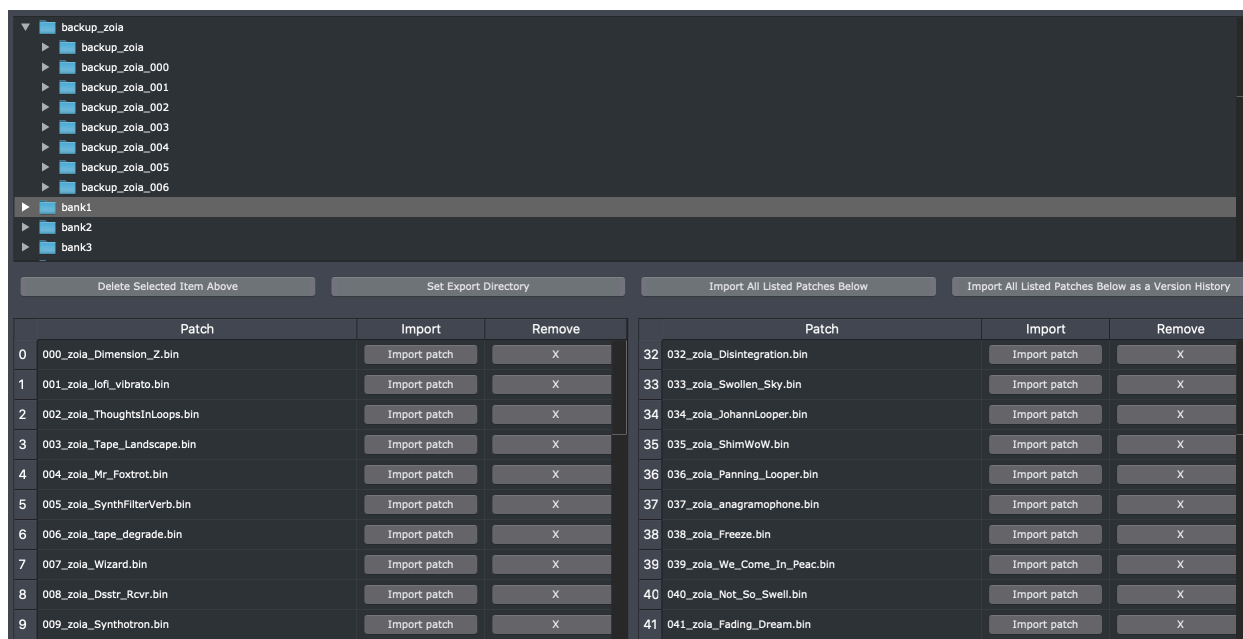
Right-clicking anywhere in the window will bring up the options menu, which features 2 tabs: File and Edit. These show a set of shortcuts and other useful tools to save and edit the graph. In particular, the auto-layout features may be of interest for different ways to view the same routing.



Now that we have explored the Local Storage tab, it's time to move on the SD Card tab.

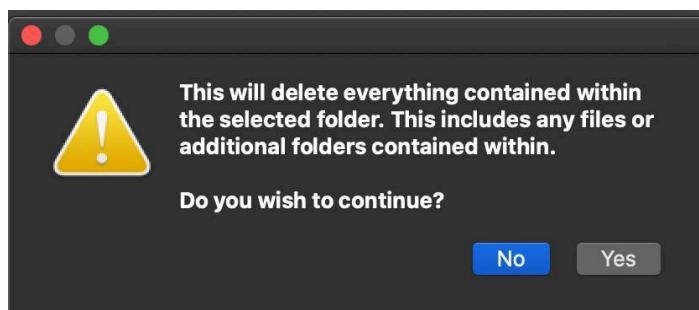
SD Card

The SD Card tab allows you to inspect the directories located on the SD card you have specified. In case you have not specified your SD card yet, look for the “File” option towards the top left of the screen, click it, and then click “Specify SD Card Location”. After selecting your SD card location, this is the screen you will be presented with.



The upper portion of the screen lists all the folders located on the SD card. You can expand any of these folders by clicking on the arrow to the left of each folder. Clicking a folder will populate the table below with patches.

You can move patches within the folder by dragging and dropping them into different slots on the SD card. Multiple selections can be made with Shift or Ctrl/Cmd macros. You can also remove a patch from your SD card by clicking the “X” button in each row, or completely remove a directory from your SD card by selecting “Delete Selected Item Above”. This button will trigger a confirmation window.

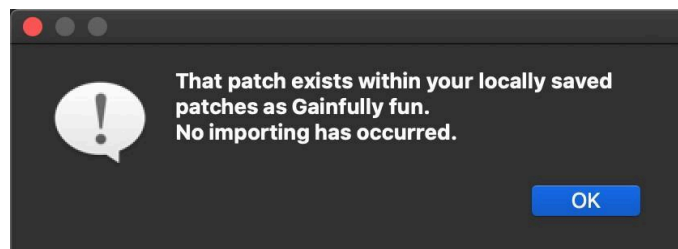


The most useful features in the SD Card tab relate to importing patches into Local Storage. There are three options available. The first is achieved by clicking “Import Patch” next to a patch in the above table. The second and third options apply to importing multiple patches at once. Multiple patches can be mass-imported in one of two ways: as individual patches, which simplifies the steps to import every patch in a given SD Card folder, or as a Version History, for a group of similar patches or ones you wish to treat as a collection.

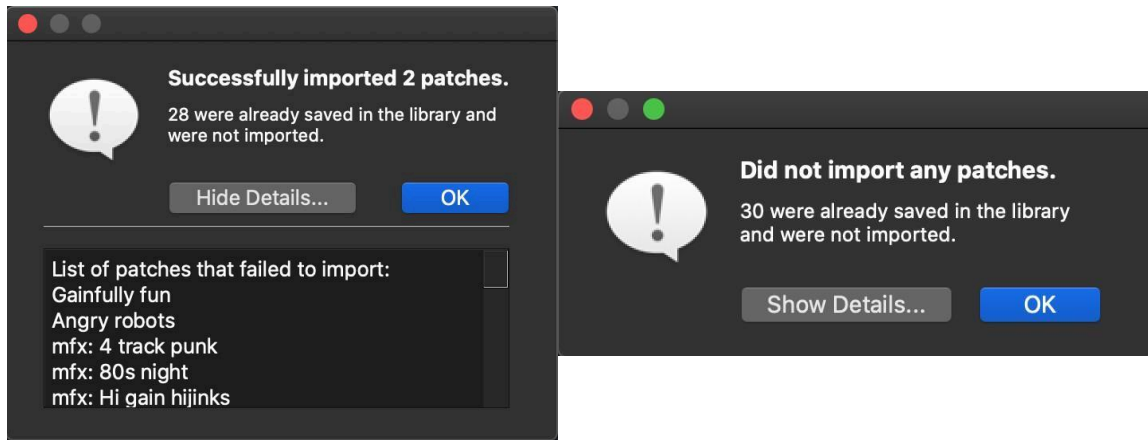
When the Librarian imports patches, it will attempt to merge patches with the same name as the patches that you have in your Local Storage or ones currently hosted on Patchstorage. This process has two benefits:

- If the imported patch differs from the version in Local Storage, it creates a Version History with the original and new version(s) so you can compare them.
- If the imported patch is one you received from PatchStorage but haven’t downloaded yet through the Librarian, it will copy over the patch notes metadata from the site, saving you from having to manually enter that information.

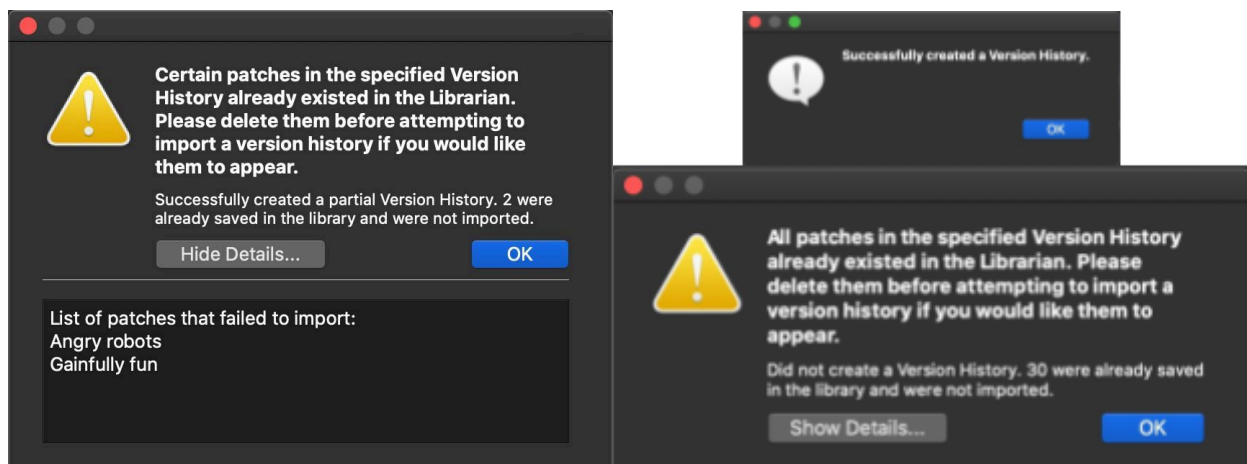
If an exact copy of a single imported patch already exists in your Local Storage, it will not be imported, since there is nothing new to save.



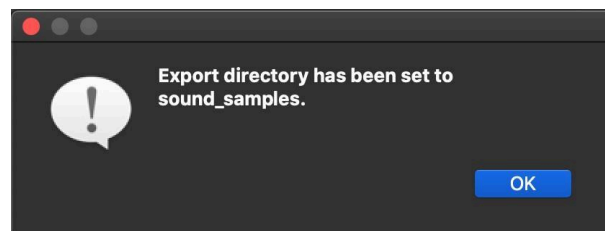
For individual multiples, the import process will save anything without duplicates, and the pop-up will display the number of successes and failures. Clicking “Show Details” will list off the names and locations of the exact copies using a [Version History: Patch] naming scheme. If a patch you’re attempting to import does not exist within a version history, it will just have the patch name by itself.



For version imports, the process attempts to create a Version History from multiple patches. There is a caveat here - a version history is meant to be completely unique from individual patches, so any patches in the SD Card directory which exist as individuals will not be included in the resulting history. The pop-up message will detail the failing patches and whether a new Version History was created.



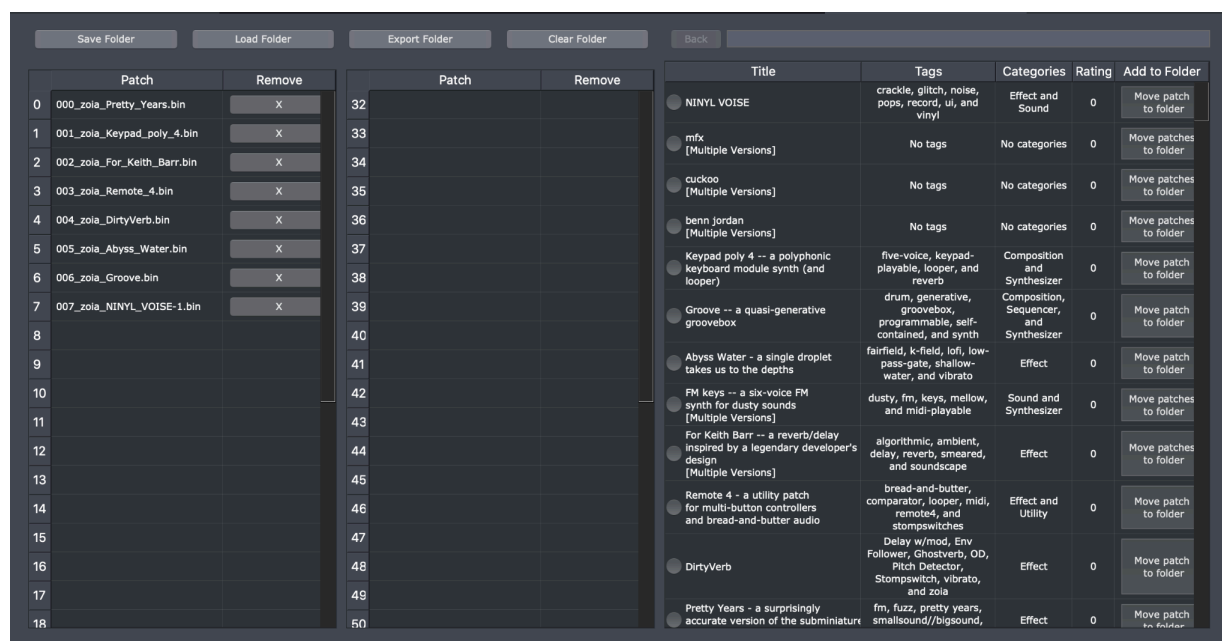
Finally, the newest button is “Set Export Directory”, which sets the patch export destination directory for the SD Card used by Local Storage. By default this is set to “to_zoia”. It will bring up a directory select window and then confirm the decision.



The SD Card tab gives you a quick way to mass import patches from your SD card into the Librarian, but what about mass exporting? That is where the Folders tab comes into play, which will be discussed in the next section.

Folders

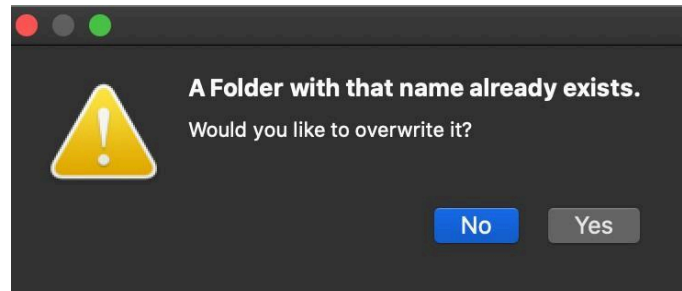
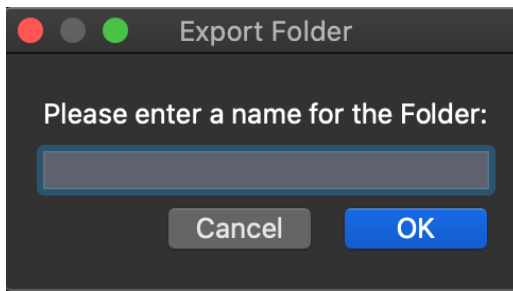
The Folders tab offers a way to work with folders, or collections of patches, both on and off of the SD card.



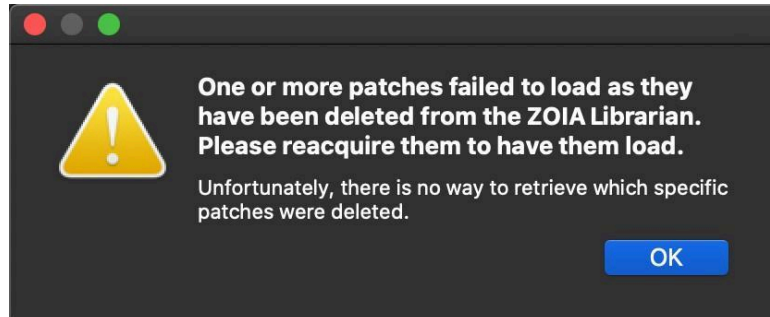
The right side of the screen displays the patches saved within the Librarian. Unlike the Local Storage tab, you cannot modify the patch tags, categories, rating, or patch notes in this view, nor can you delete them. You can, however, still view additional patch information and enter the Version History for patches in the Folders tab. You can also search for patches just as you can in the Local Storage View.

To get started, select a patch from the Local table, and either drag it over to a slot in one of the two folder tables, or click the “Move patch(es) to folder” button for the patch. Once you have patches in the folder tables, you can move them around in the same way as the SD Card tables. If you add a patch to the folder that has multiple versions contained within it, it will automatically populate the table with all the patches contained within.

When you finish making your folder, you can save it using the “Save Folder” button, and/or export it using the “Export Folder” button. Please note exporting cannot occur unless you have specified a SD card location. Whether you are saving or exporting, you will be asked to provide a name for your folder, with an extra confirmation window if the name you select already exists as a folder.



Once your folder(s) are saved, you can use the “Load Folder” button to populate the folder tables with those patches. If you remove patches from your Local Storage that are within a saved folder, they will not load, as they no longer exist on your computer.



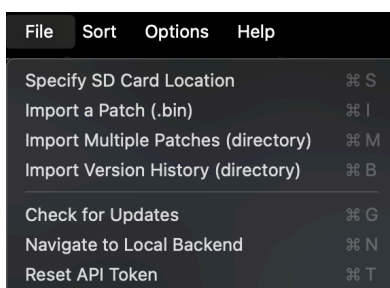
Finally, there is a “Clear Folder” button, which will quickly clear the folder completely (alternatively, you can remove patches from a folder by clicking the “X” button in each row).

That concludes the main functionality within the ZOIA Librarian. The final couple of sections will discuss additional features and what to expect in future versions.

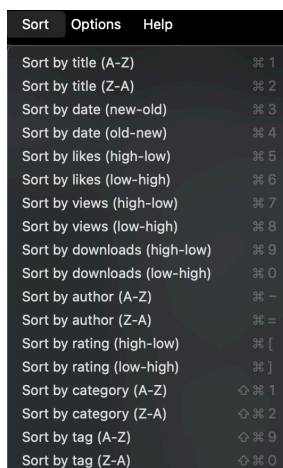
Additional Features

There are some additional features that are available in the Librarian which can apply to multiple tabs. You'll find these in the menu actions.

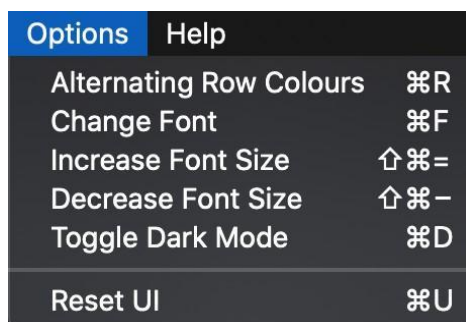
The File menu has been discussed previously, in the context of your SD card location. The other items are for when you'd like to import patch files that exist on your local filesystem. Each one is analogous to the functionality in the SD Card tab. Lastly, there are some shortcut features: navigate to the app's local backend directory, reset the API tokens, and to check for updates from GitHub.



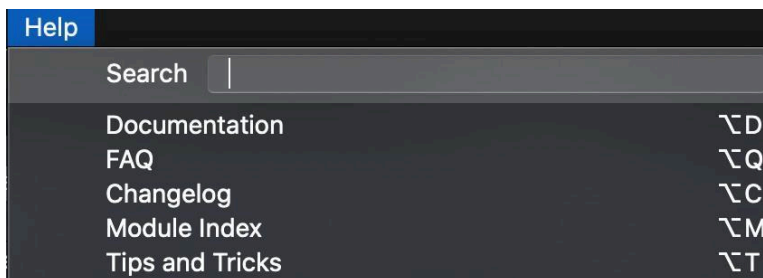
The sort menu offers ways to sort the various tables in each tab of the Librarian, except for the SD tab. The default sorting option is Date (new-old).



The Options menu is for altering the look and feel of the Librarian, including row inversion, font style and size, dark mode toggle (always on, of course), and a way to reset the UI panels and tables to their defaults.



The Help menu is where you'll find documentation for the Librarian and resources for using the ZOIA. This information will display in the PatchStorage tab on the right-side panel where the patch notes would show. The FAQ is provided below as an example.



General

What is ZOIA?

- ZOIA is a modular synthesizer in a pedal designed by Empress Effects in Canada. - A modular synthesizer uses modules as components in a larger system. Each module has a specific function, and these functions can be combined in a multitude of ways to create just about anything you can dream up! This means ZOIA can be used as a straight guitar pedal with the built-in FX modules, or to create a synthesizer/sequencer, or to control other effects as a Midi controller or to make an entire pedalboard in one patch. And more!

- The major drawback of this sort of flexibility is that the devil is in the details. Modular creation requires a level of detail that surpasses the traditional guitar pedal, so expect to spend lots of time tweaking your patches. Of course, you can rely on others to do the work for you by exploring the Patchstorage site and this subreddit. The goal is to embrace collaboration and to make the ZOIA as easy to use as possible.

When will [insert feature here] be added?

- When it's ready, and not a moment sooner

What power supply does ZOIA require? Does the unit come with a power supply?

- ZOIA requires at least 300 mA at 9v, delivered by center negative plug. A list of compatible power supplies can be found [here](#). Other power supplies not found on the list may also work with ZOIA, provided they supply the necessary power requirements listed above (e.g., Strymon power supplies).

- ZOIA does not come with a [power supply](#)

Local Backend

All files that are downloaded from PatchStorage or imported to the application can be found in the Local Backend, which differs by platform. A shortcut to find this location is available in the File options menu (Navigate to Local Backend).

The structure of this data is organized as follows:

- Individual patch folders, each with a unique patch ID.
 - Inside you'll find two types of files, binaries and json. Binaries are the actual ZOIA patch file, while each JSON holds a set of metadata for that patch.
 - Different views on the Local Storage tab expose the patch and metadata information.
 - Patches with multiple versions will display as v1, v2, and so on. These are what we've referred to as a "Version History".
- A JSON object which stores and caches the current (as of the last time you opened the application) set of PatchStorage patches.
 - This is *the* core component of the application and should not be tampered with.
 - It is automatically updated each time you open the app, fetching new data from the PS API.
- A directory which saves the set of folders you can generate and export to the ZOIA.
- Another JSON object to store your saved preferences.
 - These are a set of options for determining the UI sizes, SD locations, and API authentication tokens.
- Lastly, a directory of Samples which holds wav files.
 - They are also categorized by unique patch ID and will be exported to the SD card at the same time you export a patch that has samples attached.

Unique patch IDs are generated from two sources: ones downloaded from PatchStorage share the same ID they use, and ones imported into the app have their own set. 6-digit IDs will always come from PS and 5-digit ones will always be for imported files.

Please do not add new files or directories into this path - this will cause errors in the application.

Changelog

App version 1.4 represents the fourth major release of the ZOIA Librarian. It completes the PS beta API integration and offers some quality-of-life changes along with a few bug fixes.

New Features

- New modules were added (Reverse Delay, Univibe), so the app now includes those in the Visualizer and Expander views.
 - Also updated the Sequencer module logic for new options.
- Patches on PS may now be modified using PUT requests through the API.
 - Note that users are only allowed to update patches they authored.
 - Currently, only single-versioned patches can be modified (versions are a complicated case).
- Local PS patches are now updated to utilize the new API version & metadata.
 - The first time you load up 1.4, it may take longer than usual to open.
 - Subsequent loads will go back to normal after the files are updated.
- The Local Storage and Folder tabs now sort by latest download data by default.

Fixes

- Simplified the process for uploading patches with the API.
- Adjusted behavior of SD card export if multiple patches share the same slot number.
- Version History imports no longer add empty patch files.
- Fixed a bug with the data.json format, related to page counts in the API return.
- Fixed an issue with downloading samples from zipped patches.
- Bumped versions of various libraries.
- Removed numpy requirement.
- Removed bs4 requirement for html parsing, using API instead.

Future Plans

At this point, the app is nearly feature-complete, so future updates will be limited in scope to fix bugs and address minor things.

- Patch editing and creation is a notable exception - however, patience is recommended there.

We encourage you to provide feedback on things you want to see changed or features you would like to see added. Thank you for being an awesome member of the ZOIA community!