ENVI Automation

Setting up and using the ENVI Automation Software

Overview

This program will analyze and stitch your hyperspectral images into a single, informative map of the field. The files required for this program are .hsi files, and _igm files. The .hsi files are image bitmaps, and hold the data of the hyperspectral images. The _igm files are input geometry files, and hold the GPS data for mapping the .hsi file.

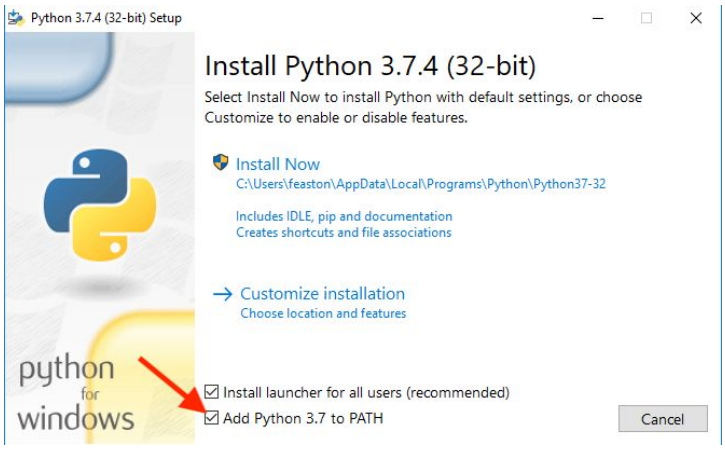
This program requires ENVI + IDL, Python3, and additional Python3 libraries. Installation and setup is detailed in the steps below.

ENVI + IDL

1. Download and install your ENVI + IDL program.

Python

1. Download and install the latest version of Python from https://www.python.org/downloads/. On the setup window, check the box to “Add Python to PATH”.

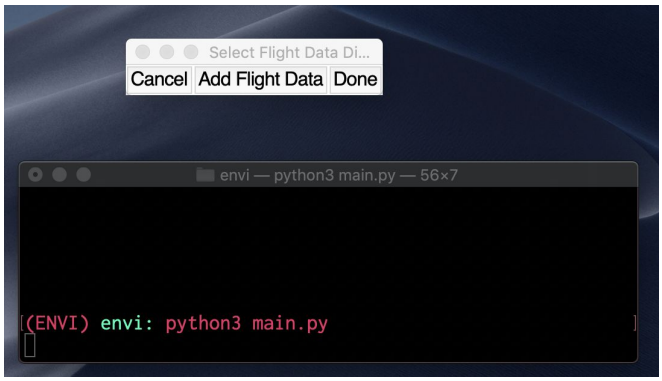


Automation Software

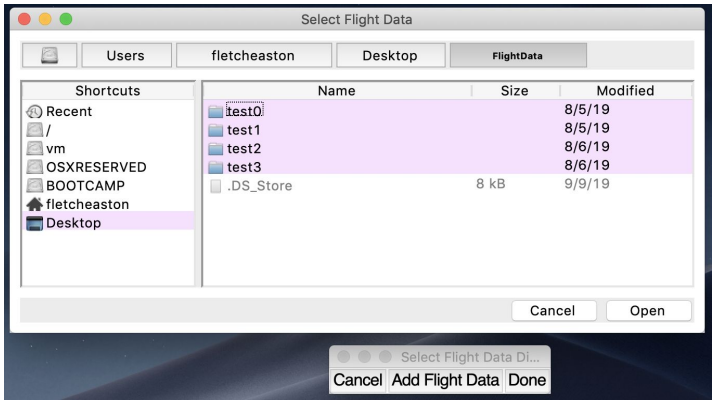
1. Download the ENVI Automation Zip file.
2. Move the ENVI Automation Zip file to the Program Files directory on your system.
3. Unzip the ENVI Automation Zip file.
4. Open the ENVI Automation folder.
5. Double click on the **`setup.bat`** file to install required external libraries. This will open a command window and begin installing external libraries. The command window will show a success message once the installer finishes. You can then close the window, or type any key to close the window automatically.
6. Right click on ENVI.bat and create a shortcut. Rename this shortcut to "ENVI Automation" and move this shortcut to your desktop or another convenient location.
7. Right click on the "ENVI Automation" shortcut you just created. Click properties. Set the application to run "minimized" instead of "normal".

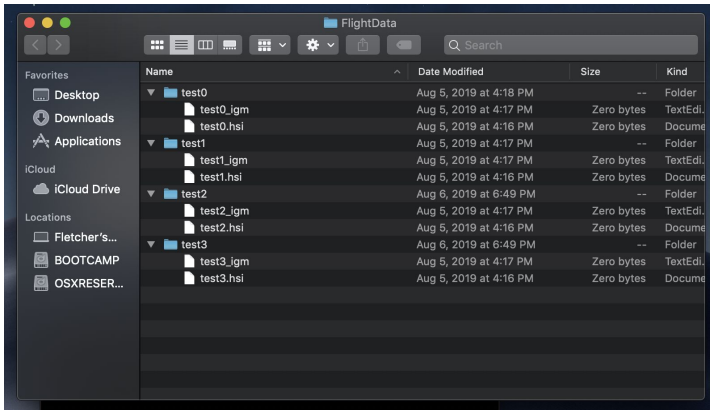
Using ENVI Automation

1. Double click the "ENVI Automation" shortcut. An icon for the command window will appear in the taskbar; do NOT close this command window. This command window will notify you when the program finishes, and close automatically.
2. A window with three buttons will open. Check your taskbar if the window doesn't appear, as it may be hidden by another window.

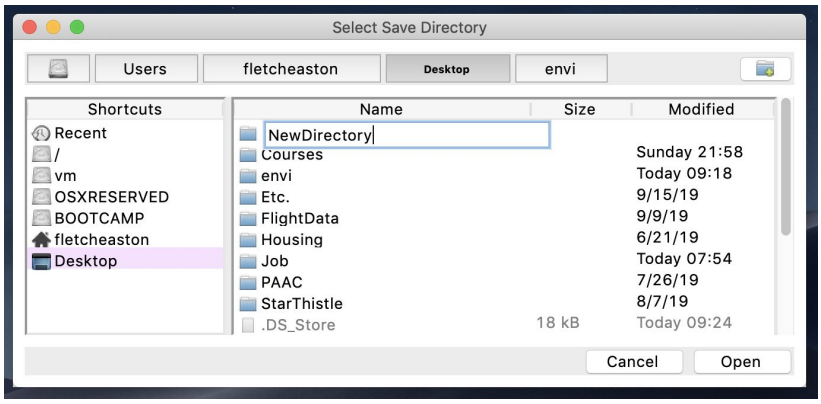


3. Press the “Cancel” button if you want to exit the program. Press “Add Flight Data” to select your flight data. Press “Done” if you’ve selected all your data and want to proceed with the automation process.
4. When selecting flight data, select one or more folders. These folders should contain a single “.hsi” file, and a single “_igm” file. These folders can have other files in them, but the “.hsi” and “_igm” files are required. Click “Open”. An error will occur if there are multiple “.hsi” or “_igm” files in one folder.

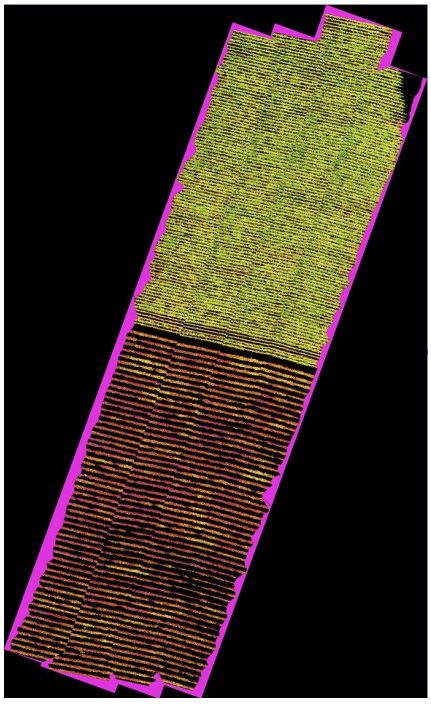




5. After selecting all relevant data, click “Done”.
6. A new window will appear. Select the directory where you’d like to save the final map, and click “Open”. You can create a new directory using the button in the top right of the window.

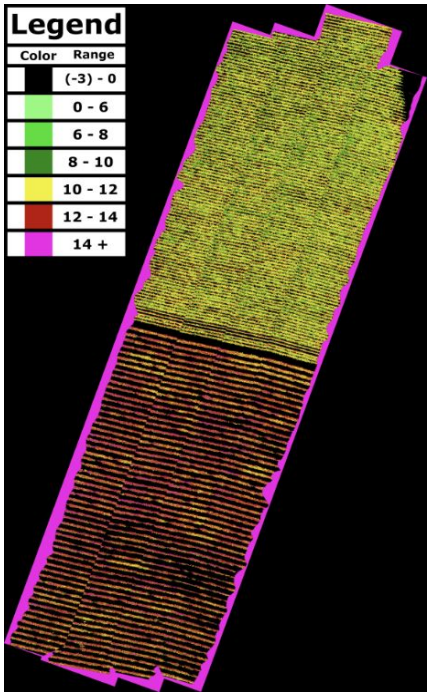


7. ENVI will soon open, and will start collecting and processing your flight data. If the command window closes, some error has occurred. Please check the **automatedENVI.log** in your "ENVI Automation" directory for more information.
8. ENVI will close automatically once your data is processed. The program then adds a legend to your map. This may take anywhere from a few seconds to a few minutes or more, depending on the size of your map.



9. After placing the legend on your map, popups will show you what maps the program found, and where it searched for maps but didn't find any. The command window will close automatically once you clear these popups.
10. Navigate to the directory you selected to save your files. The final map,

finalMap.jpg, should have your map of the field with a legend over it.



Note: A command window named "____" will open. Please do not close this window manually or the automated procedure will stop. This window will close automatically once the program finishes.

Note: Please DO NOT attempt to run two instances of this program simultaneously. This can cause your first instance of the program to crash.