visAPPprot Mac Installation

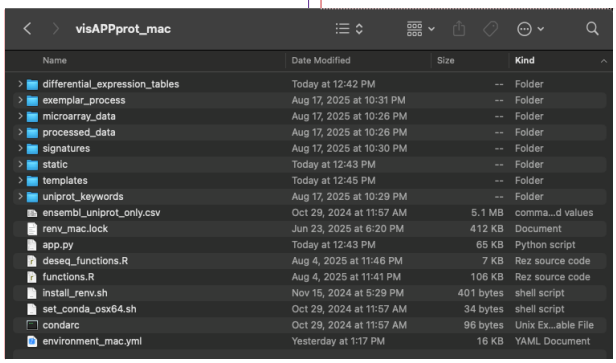
In the following pages we detail instructions for setting up our visualization application *visAPPprot*.

Installation should take approximately 1.5 hours to complete. The estimate for time required to complete each section is noted at the beginning of each section.

These are the following sections of this document:

1. Download Files

Go to your Documents folder and then into the visAPPprot_mac folder (about 33MB in size). The visAPPprot_mac folder should contain the following files and folders:
- differential_expression_tables/
- exemplar_process/
- microarray_data/
- processed_data/
- signatures/
- static/
- templates/
- uniprot_keywords/
- ensembl_uniprot_only.csv
- renv_mac.lock
- app.py
- deseq_functions.R
- functions.R
- install_renv.sh
- set_conda_osx64.sh
- condarc
- environment_mac.yml



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2. Install Miniconda Environment

(Time Estimate: 20 minutes)

Install Miniconda: https://repo.anaconda.com/miniconda/

Download the Miniconda installer from the link above. Find the download option for your specific Mac OS and click to download:

- If your Mac runs on an Intel chip search for "`Miniconda3-py312_24.9.2-0-MacOSX-x86_64.pkg`" in your browser.
- If your Mac runs on an M series chip (M1, M2, M3, M4) search for "`Miniconda3-py312_24.9.2-0-MacOSX-arm64.pkg`" in your browser.

(If you are unsure whether your Mac runs on an M series chip or an Intel chip, click on the Apple logo at the top left of your screen then click the first option "About this Mac". Under "Chip" it will state whether your machine runs M series chip or Intel.)

Go to your Downloads folder and double click on the Miniconda installer. When the first step of the setup pops up click "Continue."

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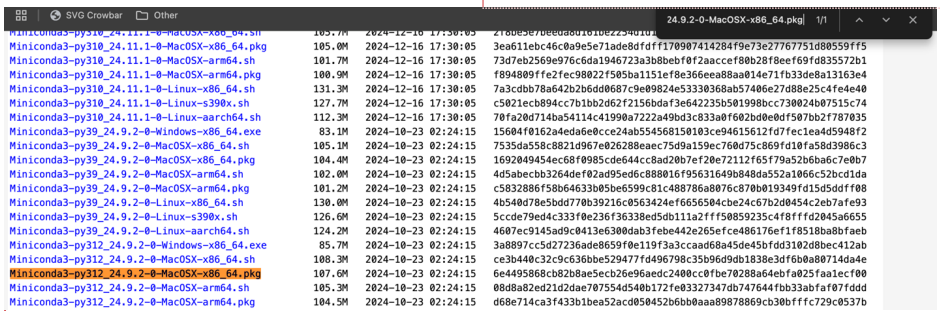
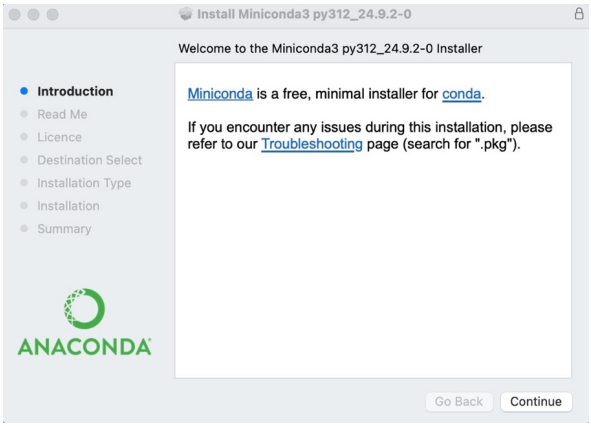
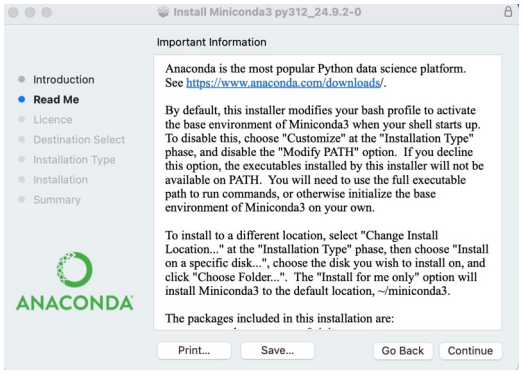
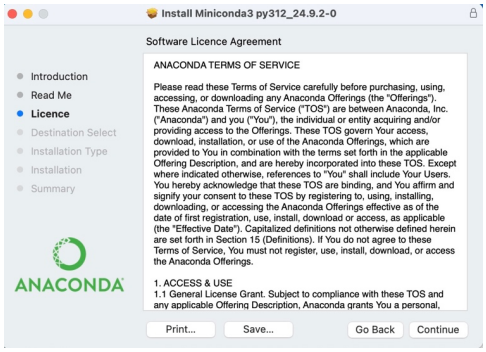




Click "Continue" again.



Click “Continue” again.



On the next step of the setup click “Agree.”

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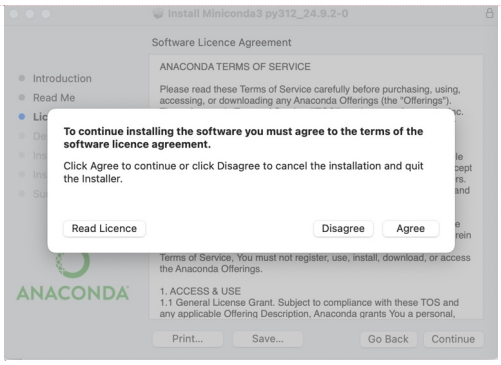
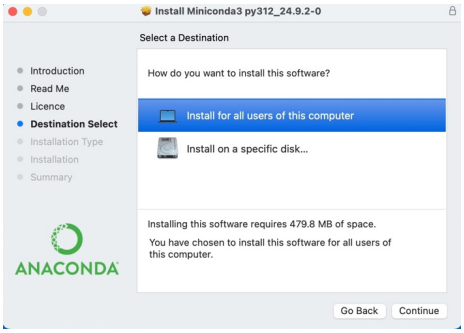
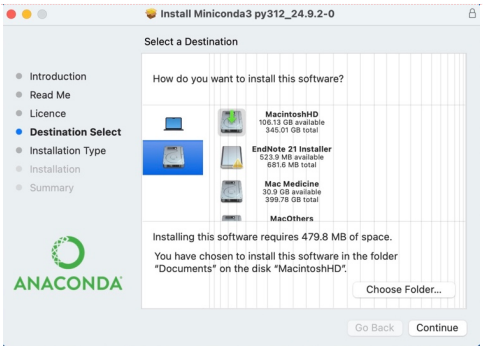


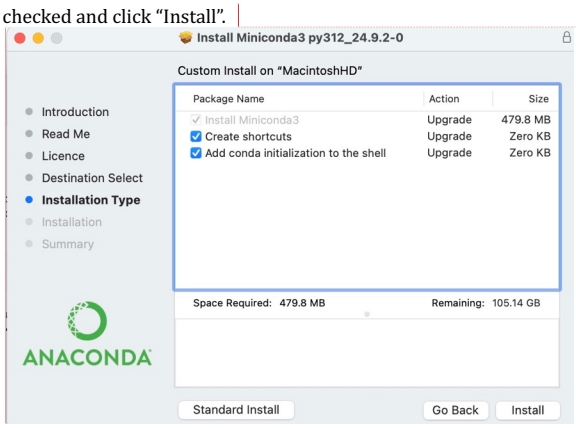
Then select “Install for all users of this computer” and click “Continue.”



Select your preferred installation destination, most likely MacintoshHD. Click “Continue”.



Leave all the options checked and click “Install”.



When the installation is complete, if an additional page pops up click “Close”.

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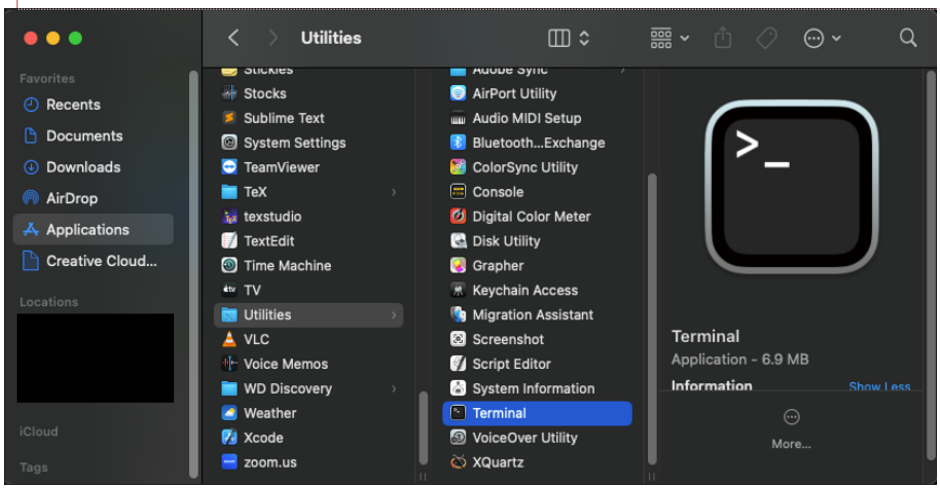
3. Install Conda Environment

(Time Estimate: 50 minutes)

Open up a new Finder window. Click on "Applications" on the left sidebar, then click the "Utilities" folder" and final double-click on the "Terminal" application.



When your terminal opens you should see "(base)" indicating this is the raw, base conda environment.

In the command prompt copy the following line and paste into the command prompt (hit Cmd+V to paste). Then hit Enter.

cd ~/Documents/visAPPprot_mac

Copy and paste the following line into the command prompt as well, and hit enter after pasting.

./set_conda_osx64.sh

Copy and paste the following line into the command prompt as well, and hit enter after pasting.

conda env create -f environment_mac.yml

This creates the conda environment and can take up to 50 minutes.

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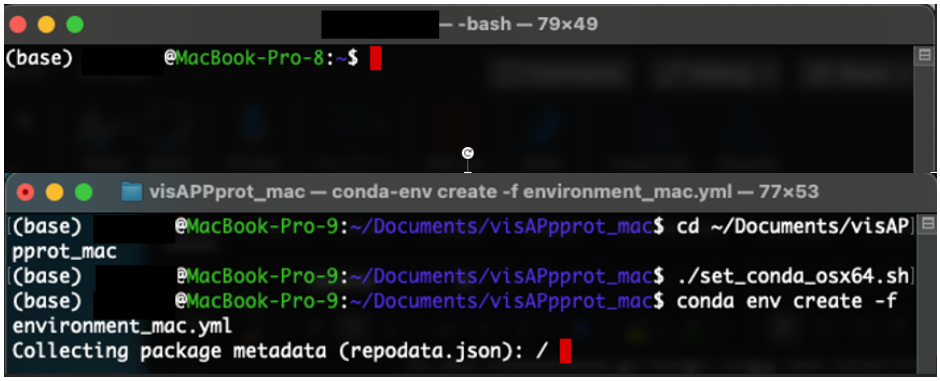
Commented [ka12]: It took 50 minutes to create the conda environment



Once the conda environment is created, you should see the suggestion to "conda activate omics_env". As suggested, type (or preferably copy and paste the following line)

conda activate omics_env

and then hit Enter to activate the environment. Keep your terminal open.

4. Install R Packages

(Time Estimate: 15 minutes)

Install R Packages

In your terminal copy and paste the following line

./install_renv.sh

followed by the Enter key to install all the R packages necessary for this application. This could take up to 1 hour.

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Once you see your cursor appear on the terminal command line again, this means all the R packages have been installed. Keep your terminal open.

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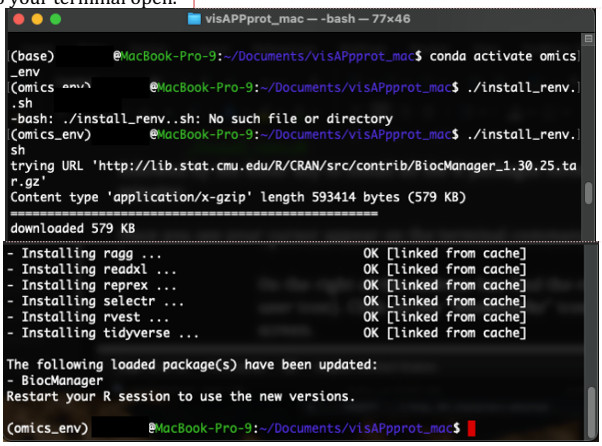
Commented [SQ15]: replace with mac photo



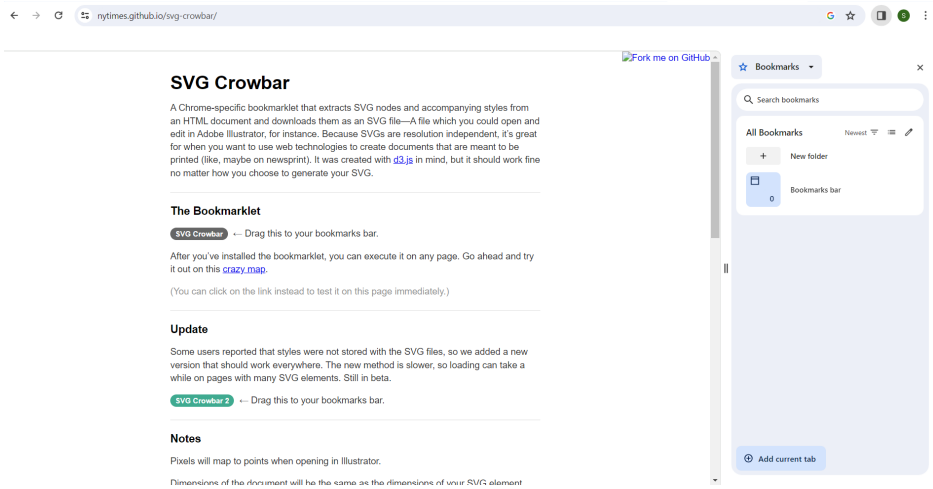
5. Install SVG-Crowbar

(Time Estimate: 1 minutes)

Open this link in your Chrome browser: https://nytimes.github.io/svg-crowbar/

On the right of the address bar, find the rectangular "Bookmarks" icon (most likely placed right next to your user icon). Click on the "Bookmarks" icon and a bookmarks panel should open up on the right side of your screen. If you do not see your "Bookmarks" icon, you can find this panel by clicking the vertical 3 dots symbol to the far right of the address bar, then "Bookmarks and Lists" and finally "Show all Bookmarks".

Drag the "SVG Crowbar" icon with the grey background to your "Bookmarks Bar" section of the bookmarks panel.



If your bookmarks bar is already showing below your address bar, you should see the SVG Crowbar bookmark now appear in the bookmarks bar below your address bar. Otherwise, open the bookmarks row by pressing Cmd+Shift+B.

6. Run visAPPprot

(Time Estimate: 2 minutes)

In your Terminal application make sure you are still in the ~/Documents/visAPPprot_mac directory. Copy and paste the following line and then hit the Enter key:

python app.py

It may take up to 2 minutes to start up and once you see the following on your terminal it is ready:

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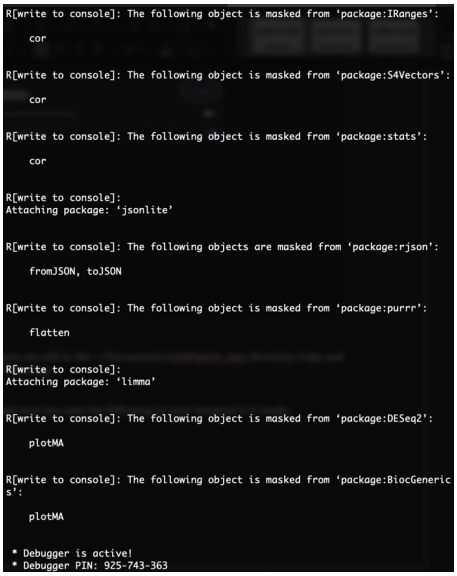
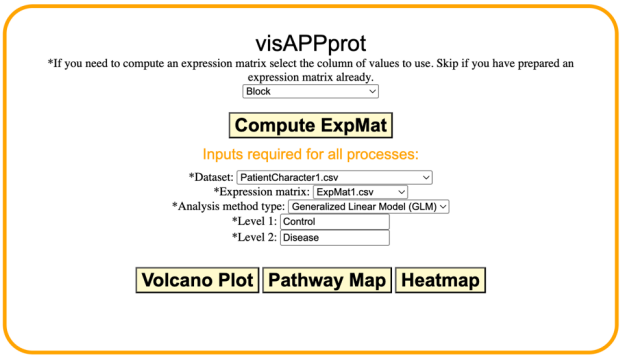


Now you can open up a new window in Chrome. Make sure you are in normal browsing mode and ***not*** Incognito! Navigate to the address *localhost:8888* and you should see the following page:

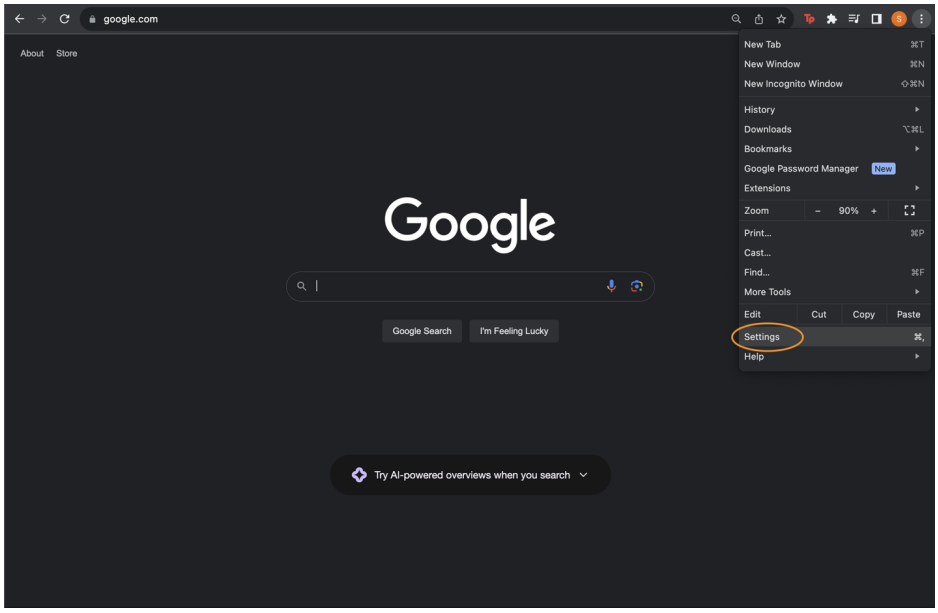


7. Set Up Chrome Downloads

(Time Estimate: 1 minute)

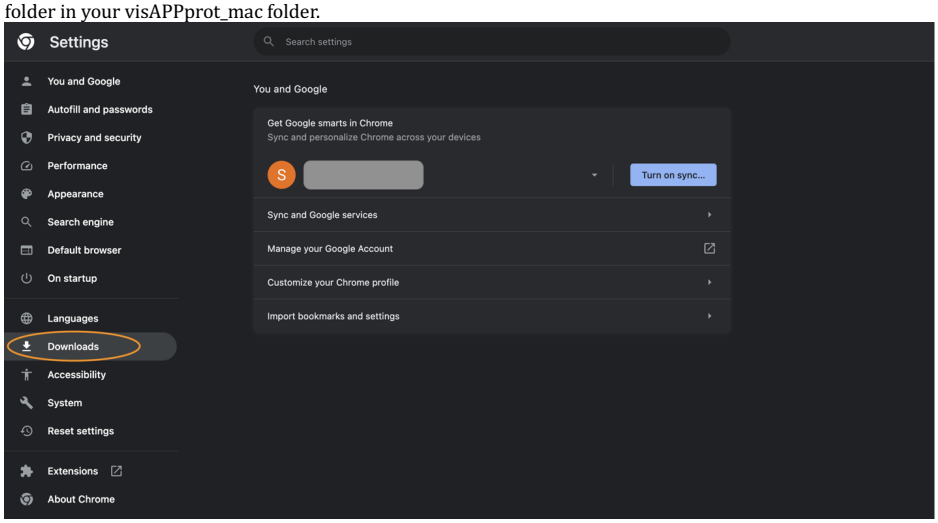
Change your Chrome downloads directory to the *download_imgs* folder that corresponds to the name of the dataset you are analyzing. For example, in our User Manual we demonstrate usage of the system with Toy Dataset 1, which involves PatientCharacter1.csv and ExpMat1.csv. This means we want to set up our downloads directory for PatientCharacter1, there we set it to *static/download_imgs_PatientCharacter1/* folder in your visAPPprot_mac folder. Here are the steps.

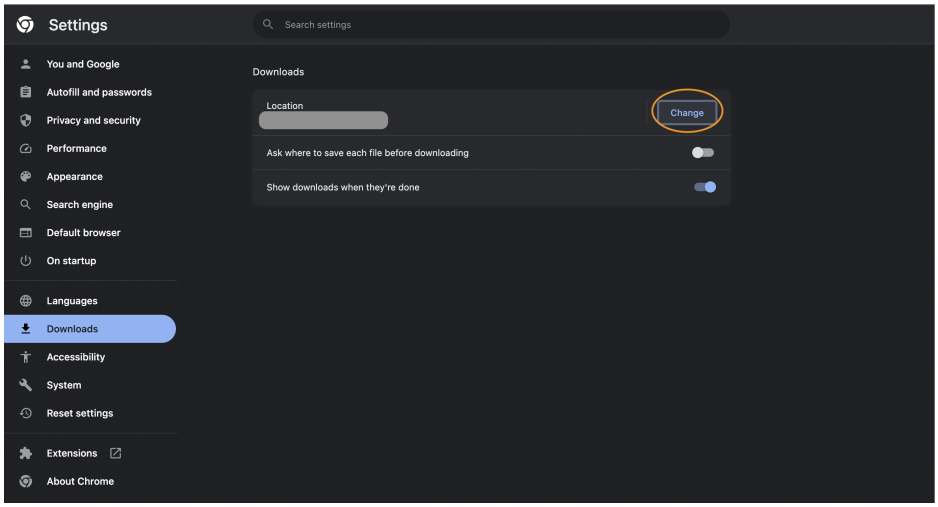
In Chrome, click on the vertical 3 dots symbol to the far right of the address bar. Then click *Settings* near the bottom.



Click *Downloads* in the left side menu.

Click *Change* next to *Location* and set the Downloads directory to the *static/download_imgs_PatientCharacter1* folder in your visAPPprot_mac folder.





You are now ready to move onto the User Manual!