Operations Research in Action

Getting Started with Anaconda and JupyterLab

Last updated: August 30, 2024

1 Installing Anaconda

- In this course, we will use the Anaconda Python distribution.
- To install Anaconda, carefully follow the instructions below!
 - These instructions are based on the documentation found here:

https://docs.anaconda.com/anaconda/install/windows/

Step 1. Download the Anaconda installer. Go to the following URL:

https://www.anaconda.com/download

If you want, enter your email address and click Submit. Otherwise, simply click Skip registration.

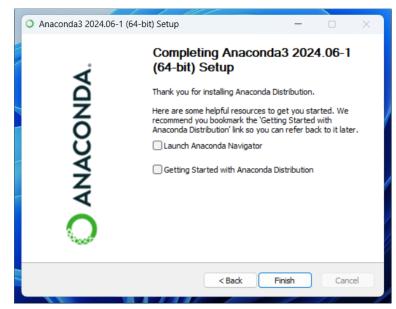
Dis	tribution
En	nail Address:
	Agree to receive communication from Anaconda regarding relevant content, products, and services. I understand that I can revoke this consent <u>here</u> at any time.
y con ervic	tinuing, I agree to Anaconda's <u>Privacy Policy</u> and <u>Terms of</u> <u>e</u> .
	Submit >

- Step 2. On the next screen, click the Download button to download the installer to your computer.
- Step 3. Once the installer is downloaded, find it. Double-click on the installer to launch.
- Step 4. You should see a Welcome to Anaconda3 dialog box. Click Next.
- Step 5. Read the licensing terms and click | Agree.
- Step 6. Select Just Me (recommended) and click Next.
- Step 7. Leave the default destination folder as-is and click Next.

- **Step 8.** You should now see the dialog box on the right.
 - Leave the first box checked.
 - Leave the second box <u>unchecked</u>: <u>Do</u> <u>not</u> add Anaconda to your system PATH environment variable. Adding Anaconda to the PATH environment variable can interfere with other software.
 - Leave the third box checked: Register Anaconda as your default Python.
 - <u>Check</u> the fourth box: Clear the package cache upon completion.
 - Click the Install button.

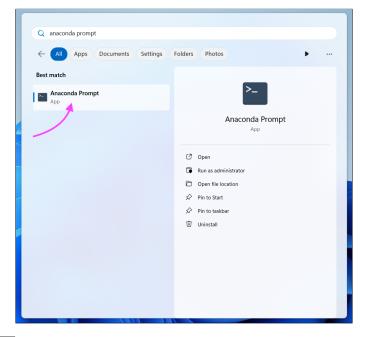
 Anaconda3 2024.06-1 (64-bit) Setup
O ANACONDA. Advanced Installation Options Customize how Anaconda3 integrates with Windows
 Create shortcuts (supported packages only). Add Anaconda3 to my PATH environment variable NOT recommended. This can lead to conflicts with other applications. Instead, use the Commmand Prompt and Powershell menus added to the Windows Start Menu. Register Anaconda3 as my default Python 3.12 Recommended. Allows other programs, such as VSCode, PyCharm, etc. to automatically detect Anaconda3 as the primary Python 3.12 on the system.
Clear the package cache upon completion Recommended. Recovers some disk space without harming functionality.
< Back Install Cancel

- Step 9. You should see a dialog box with a progress bar. This will take a while. When the progress bar is full, click Next.
- Step 10. Ignore the advertisement for Anaconda in the Cloud and click Next.
- Step 11. After a successful installation, you will see the dialog box shown on the right.Uncheck the two boxes and click Finish to complete the installation.



2 Install packages you'll need for this class

- Now that Anaconda is installed, let's install some additional packages that you will need for this class.
- Step 1. Click on at the bottom of your screen.
 Search for anaconda prompt. Then click
 Anaconda Prompt in the search results. A terminal window will appear.



Step 2. At the prompt, type the following and press Enter:

```
conda install -c conda-forge r-essentials pyomo glpk
```

You will see the conda package installer solve the environment. This might take a while.

Step 3. The conda package installer will then ask you if you want to proceed. Type y and press Enter. The conda package installer will then download the packages and complete the installation.

Step 4. Close the terminal window.

3 Launching JupyterLab

• **Optional but strongly suggested.** Make Google Chrome your default web browser, if it is not already. Follow the instructions at the link below:

https://support.google.com/chrome/answer/95417

- In this class, we will be writing Python code in JupyterLab. Let's open JupyterLab.
- **Step 1.** Click on **a** at the bottom of your screen. Search for anaconda prompt. Then click Anaconda Prompt in the search results. A terminal window will appear.
- **Step 2.** At the prompt, type the following and press Enter:

jupyter lab

Step 3. Your default web browser should open with the JupyterLab interface. It should look like this:

~	C JupyterLab × +		- 0	×
<i></i>	→ C () localhost:8888/lab	\$	* 😪) :
\bigcirc	File Edit View Run Kernel Tabs Sett	ings Help		
	+ 🗈 ± C	🖸 Launcher +		Ŷ¢
ο	Filter files by name Q			
=	Name Last Modified	Notebook		
	Contacts 24 days ago Desktop 24 days ago	2		
*	Documents 23 minutes ago	Python 3 (ipykernei)		
	Favorites 24 days ago			
	Links 24 days ago Music 24 days ago	Console		
	Invisic 24 days ago Pictures 3 hours ago Saved Games 24 days ago	2		
	Searches 24 days ago	Python 3		
	Videos 24 days ago	(ipykernel)		
		\$_ Other		
		s 📃 🔮 🍋 📼		
		Terminal Text File Markdown File Python File Show Contextual Help		
5	Simple 💶 0 💺 0 🖨		Launcher	1 Δ

Keep the terminal window open until you're done with Jupyter Lab.

4 Downloading and opening Jupyter notebooks in zip files

• The course website is here:

https://courses.uhan.me/action

- You will need to download Jupyter notebooks in zip files from the course website and open them in JupyterLab. Follow these instructions to download a lesson from the course website. These instructions assume you're using Google Chrome as your web browser.
- Step 1. Start by clicking the link for the Jupyter notebook you want to use.

9/7 4 Basic Data Transformations with Altair Notes 9/3 Completed notes 9/1 3 Introduction to Data Visualization with Altair Notes 8/30 Completed notes
9/1 3 Introduction to Data Visualization with Altair Notes
8/30 Completed notes
8/27 2 Warm Up Notes
Completed notes
8/25 1 A Survival Course in Jupyter and Python Notes
Completed notes
8/23 0 Course Overview Notes

- Step 2. A dialog box will appear. Choose a destination for this file, and click Save.
- Step 3. Click the Downloads icon in the toolbar. Then click the folder icon next to the file you just downloaded.

~	C JupyterL	ab		× SA463A - Data Wrangling and \ × +			- 0		×
÷	\rightarrow G	courses.ul	han.m	e/sa463a/		☆	₹	P	:
		9/24			Recent download history		\otimes		-
		9/22 8 Multi-view Composition — Facet, Concatenate, Repeat 9/20	usna-dwv-lesson- introduction-0169cae.zip 165 KB • Done		ß				
		9/17	7	Multi-view Composition — Layers	Full download history		ß		
		9/15 6 Customizing Visualizations 9/13		Notes Completed notes					
9/		9/10 9/8	5	Advanced Data Transformations with Altair	Notes Completed notes				
		9/7 9/3	4	Basic Data Transformations with Altair	Notes Completed notes				ł

Step 4. A File Explorer window should appear, highlighting the file you just downloaded. Do not double-click it. Instead, select Extract all from the toolbar. (You can also right-click the file, and select Extract All...)

Downloads	×	+					- 0	×
$\rightarrow \land C$	Q	> This PC > Windows (C:) > Users	> uhan > Down	loads >		Search Downloads		Q
⊕ New - 🔏 🗘	[î	A) B 10 ↑↓ Sort ~ ■ V	ïew 🗸 🐻 Extract all					Details
Nictures	*	Name	Date modified	Туре	Size			
Music	*	~ Today						
Videos	*	🔤 usna-dwv-lesson-introduction-0169cae.zip	8/15/2024 3:07 PM	Compressed (zipp	165 KB			
🝐 Google Drive (G:)	*	 Last month O Anaconda3-2024.06-1-Windows-x86_64 	7/23/2024 9:29 AM	Application	934,230 KB			
NYE 2025 Fall	*							
🏷 Week 1 - Writing the Data Section								
🏷 Week 2 - Writing the Modeling Sec								
🚬 img	- 1							
Screenshots	- 1							

Step 5. A dialog box should appear, asking where you want to extract the contents of this file. Click on Browse and select where you want to put a new folder with the contents of the file. Then, click Extract.

÷	🧮 Extract Compressed (Zipped) Folders			×
	Select a Destination and Extract Files		\searrow	
	Files will be extracted to this folder:			
	C:\Users\uhan\Documents\SA433 Fall 2024		B <u>r</u> owse	
	Show extracted files when complete			
		ζ.		
			<u>Extract</u> Cancel	

Step 6. Once the extraction is done, a File Explorer window should appear, showing you the newly created folder with the contents of the file. Rename the folder something easy to read.

5A433 Fall 2024	×	+	-		×
\leftarrow \rightarrow \uparrow C	, D	> Documents > SA433 Fall 2024 >	Search SA433 Fall 2024		۹
🛨 New - 🔏 🕻) [î	A) B (n) ∧ Sort ~ ≡ View ~ ····		📑 De	tails
A Home	~	Name Date modified Type Size			
🔁 Gallery	-	Lesson 01 Course Overview 8/15/2024 3:19 PM File folder			
🛄 Desktop	*				
	*				
Documents	*				
Pictures	*				
🕑 Music	*				
🔀 Videos	*				
🝐 Google Drive (G:)	*				
AYE 2025 Fall	*				

Step 7. In JupyterLab, navigate the file browser to the location of this newly created folder.