

Setting Up a Conda Environment on Windows

A Step-by-Step Guide using Miniconda

Overview

This guide walks you through installing Miniconda (a lightweight alternative to Anaconda), setting up Conda on Windows, and creating your first environment, perfect for beginners working on quantum, ML, or scientific projects.

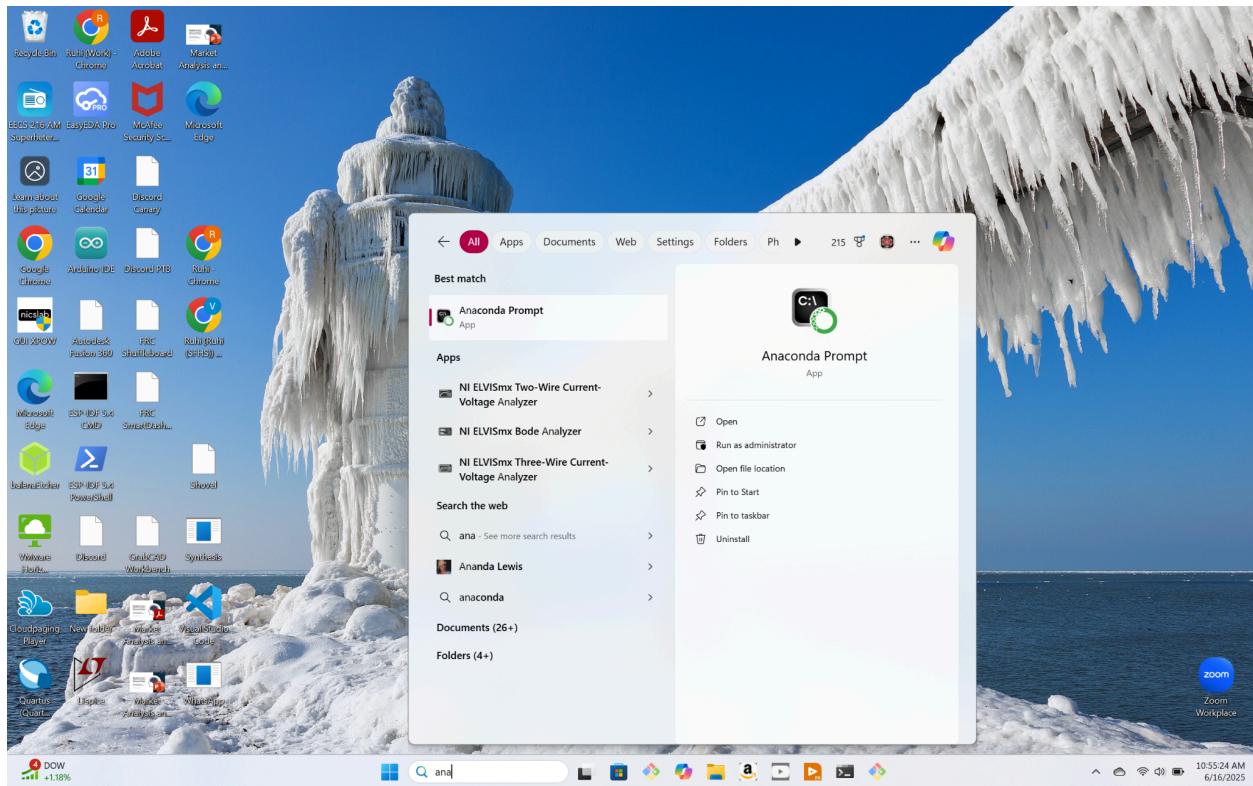
Step 1: Install Miniconda

Download the **Miniconda3 Windows 64-bit installer** from the official site:

 <https://docs.conda.io/projects/conda/en/latest/user-guide/install/windows.html>

Step 2: Verify the Installation

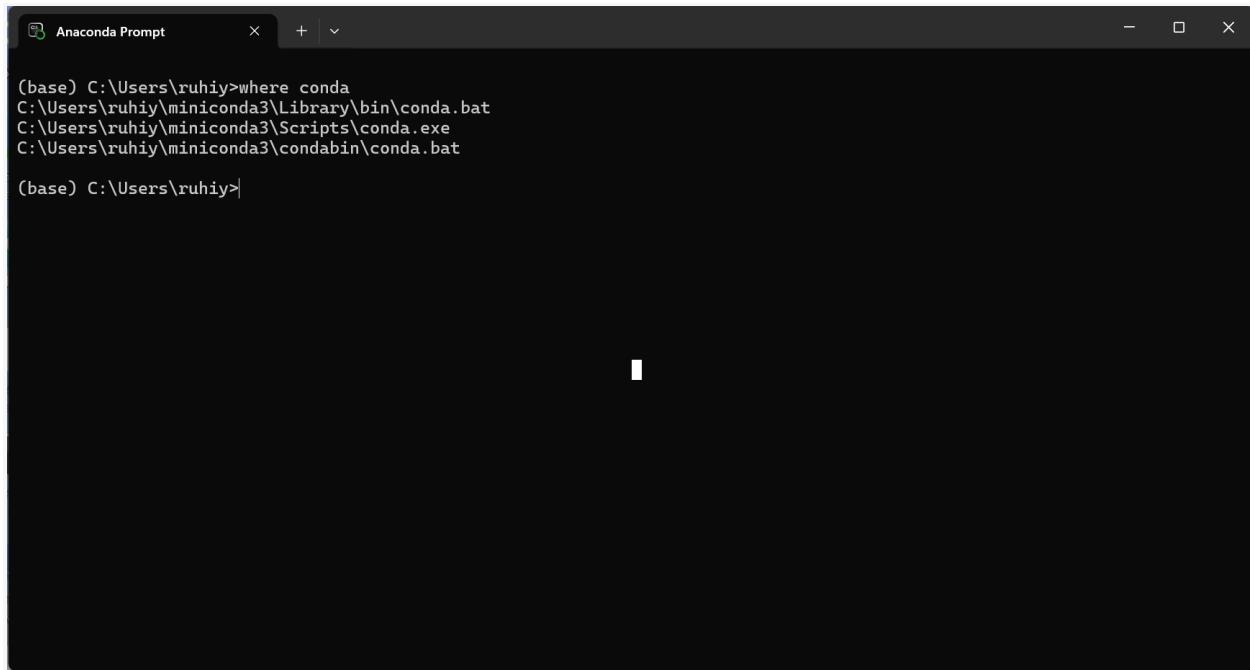
1. Open Anaconda Prompt



2. Type the following command:

```
where conda
```

This should display the path to `conda.exe`.



A screenshot of an Anaconda Prompt window. The title bar says "Anaconda Prompt". The command line shows the user running the "where conda" command. The output lists several paths where "conda" is found, including "C:\Users\ruhiy\miniconda3\Library\bin\conda.bat", "C:\Users\ruhiy\miniconda3\Scripts\conda.exe", and "C:\Users\ruhiy\miniconda3\condabin\conda.bat". The prompt then returns to "(base) C:\Users\ruhiy>".

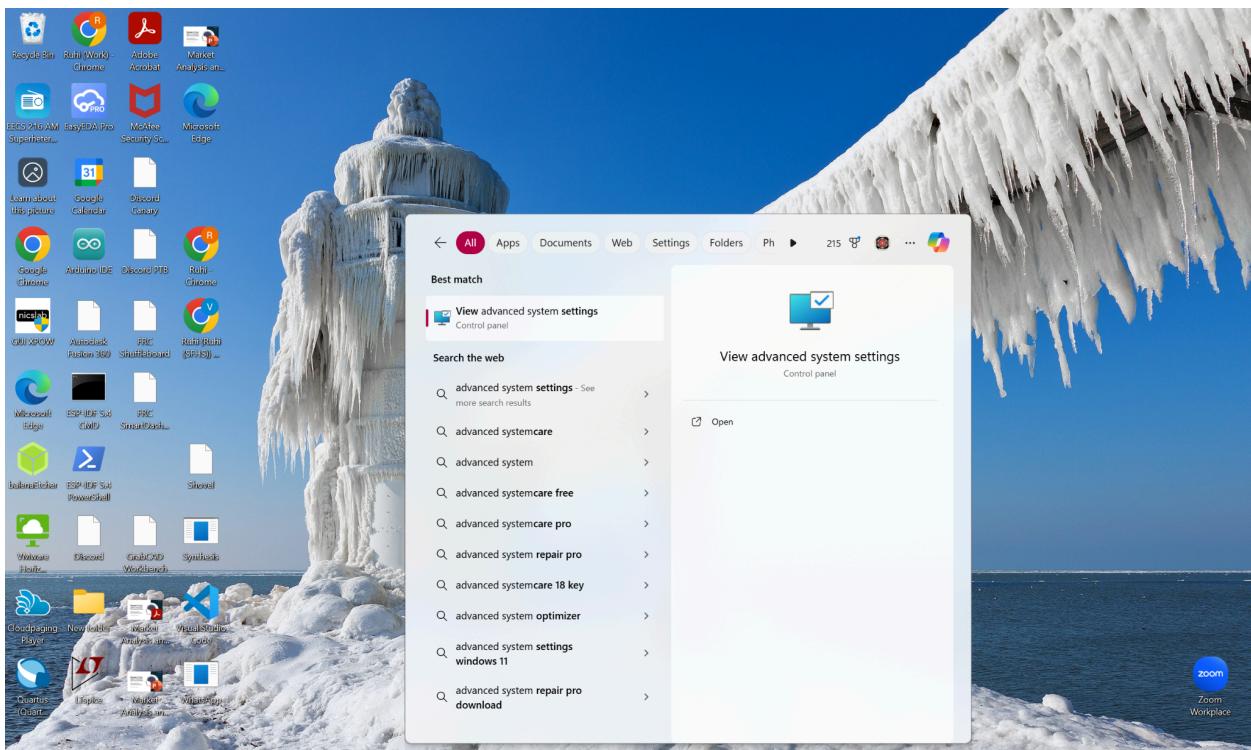
```
(base) C:\Users\ruhiy>where conda
C:\Users\ruhiy\miniconda3\Library\bin\conda.bat
C:\Users\ruhiy\miniconda3\Scripts\conda.exe
C:\Users\ruhiy\miniconda3\condabin\conda.bat

(base) C:\Users\ruhiy>
```

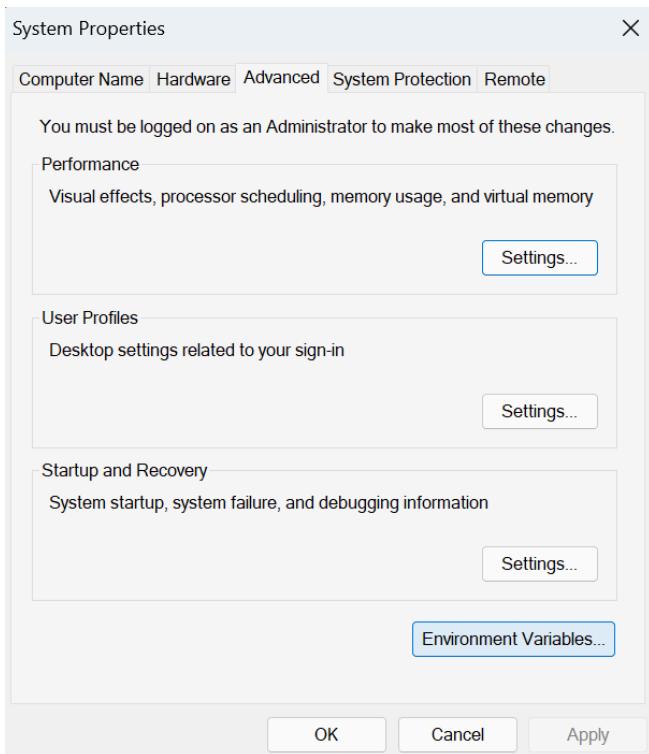
Step 3: (Optional) Manually Add Conda to PATH

If `conda` is not recognized in Command Prompt, you may need to manually add it to the system PATH:

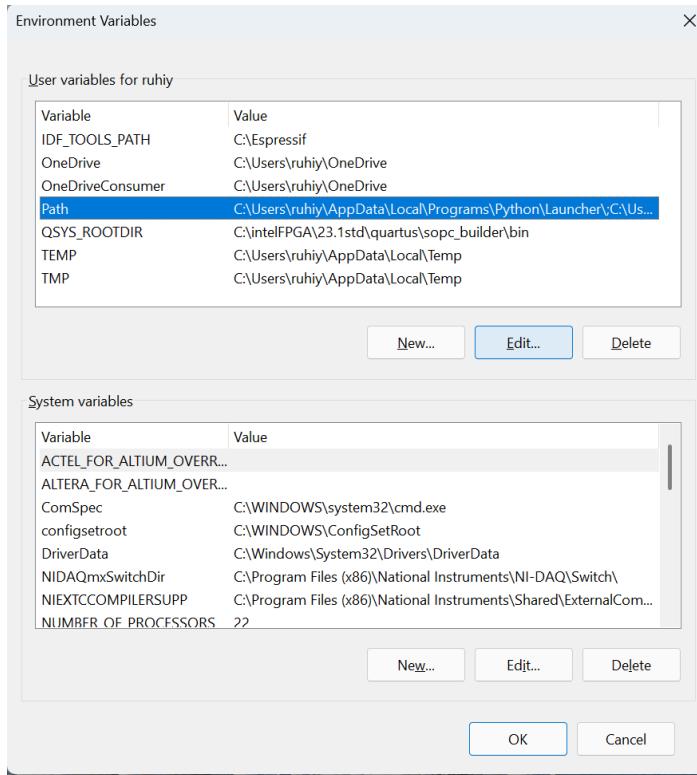
1. Open Advanced System Settings



2. Click Environment Variables



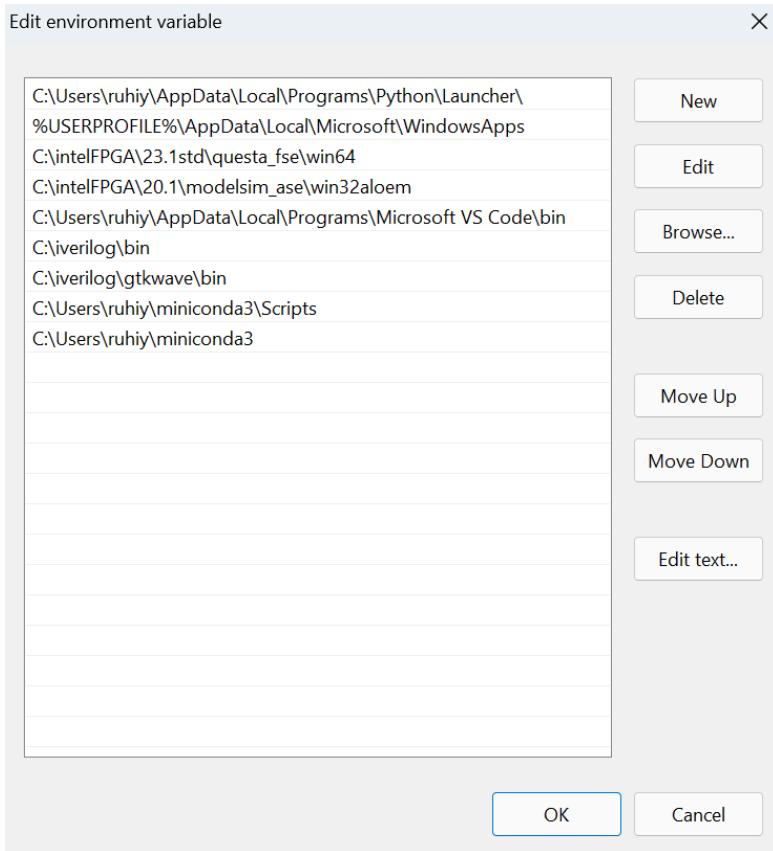
3. Under “System variables”, select **Path, then click **Edit****



4. Add the following entries (replace **<your-username> with your actual name):**

C:\Users\<your-username>\miniconda3\Scripts

C:\Users\<your-username>\miniconda3



5. Click OK to save and exit all dialogs.

Step 4: Create a Conda Environment

Open Anaconda Prompt again and run:

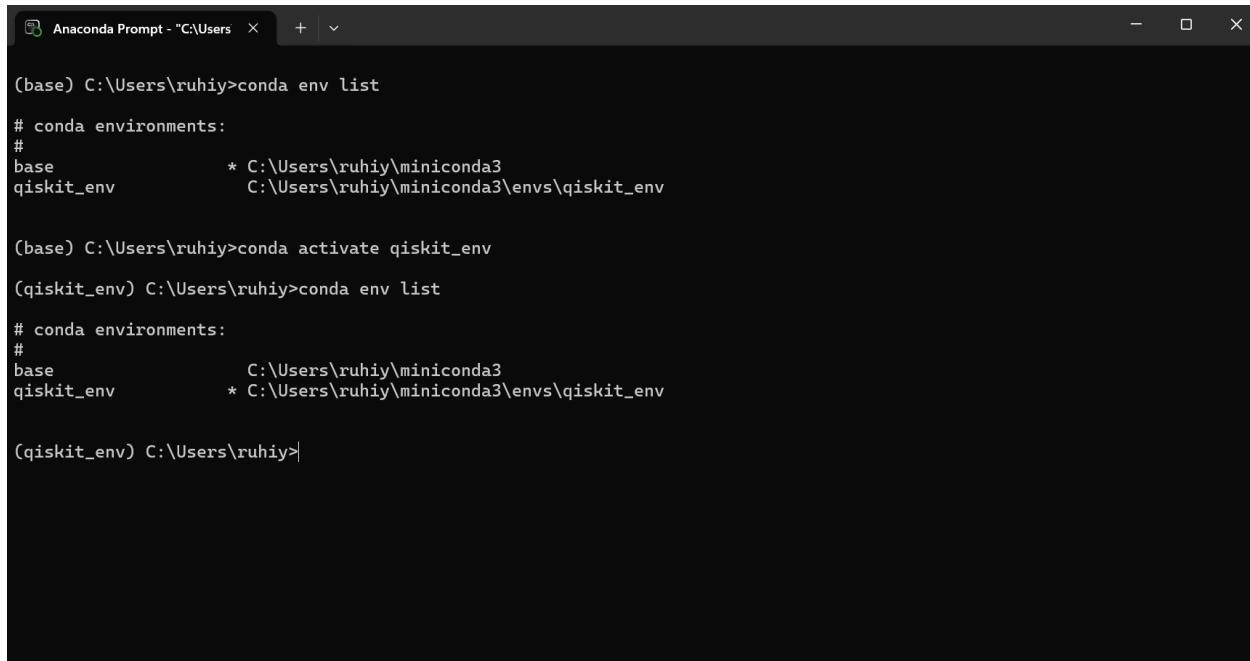
```
conda create -n qiskit_env python=3.10
```

- Replace `qiskit_env` with your preferred environment name
- Replace `3.10` with the Python version you need, or you may exclude this argument if you would like the latest Python version installed

When prompted, type `y` to proceed.

Then activate it:

```
conda activate qiskit_env
```



Anaconda Prompt - "C:\Users" + - X

```
(base) C:\Users\ruhiy>conda env list
# conda environments:
#
base                  C:\Users\ruhiy\miniconda3
qiskit_env            C:\Users\ruhiy\miniconda3\envs\qiskit_env

(base) C:\Users\ruhiy>conda activate qiskit_env
(qiskit_env) C:\Users\ruhiy>conda env list
# conda environments:
#
base                  C:\Users\ruhiy\miniconda3
qiskit_env            * C:\Users\ruhiy\miniconda3\envs\qiskit_env

(qiskit_env) C:\Users\ruhiy>
```

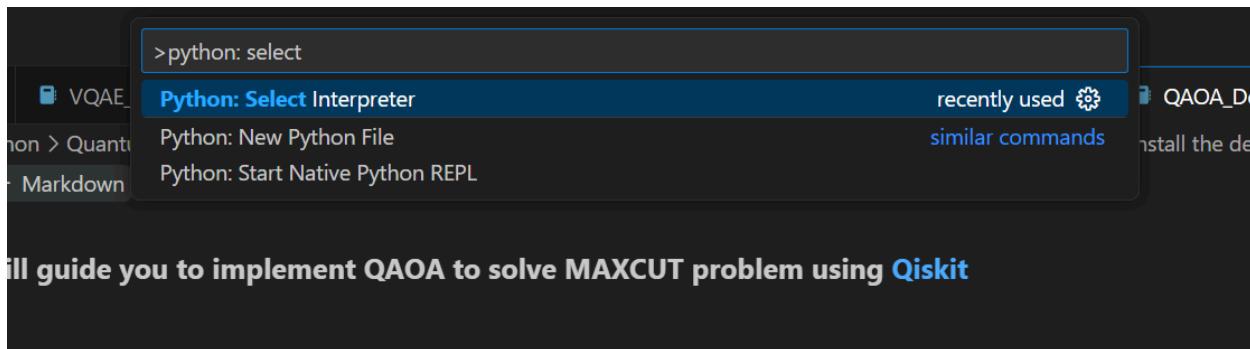
You're Done!

You now have a Conda environment set up and ready to go. You can install project-specific packages within this environment.

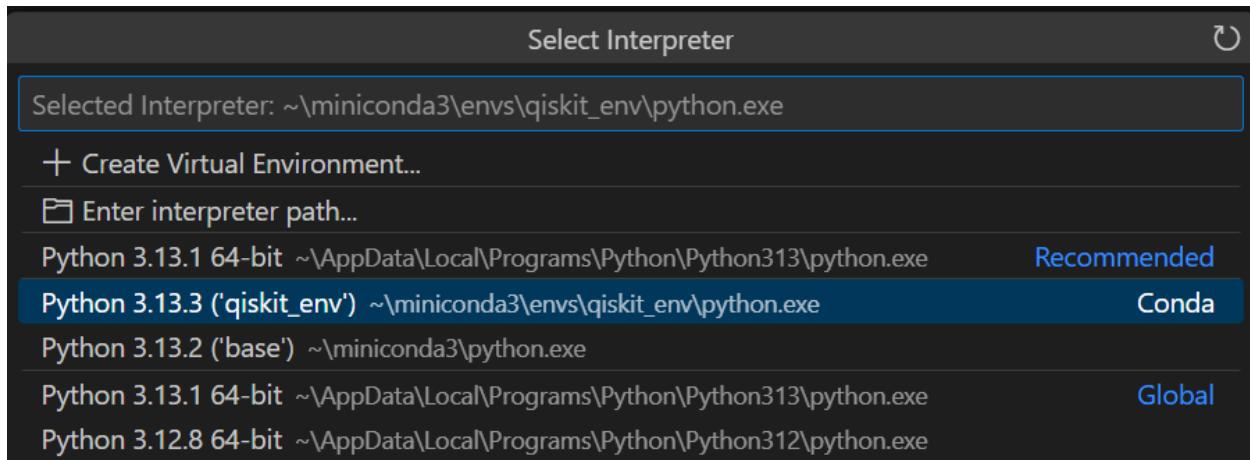
```
conda install qiskit
conda install numpy
```

You can also activate the conda environment in VSCode by opening up Command Pallette (Ctrl + Shift + P).

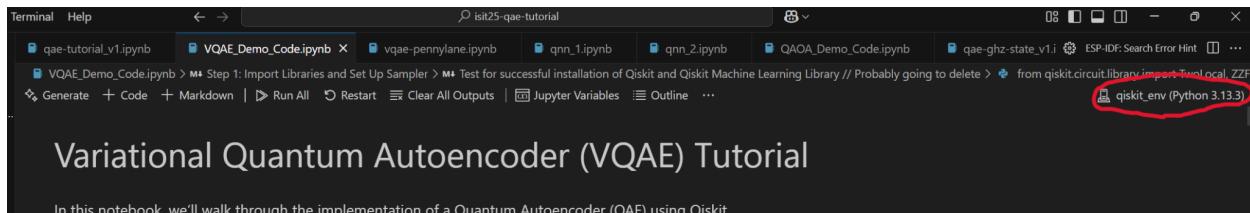
Search for “Python: Select Interpreter.”



Select the conda environment that you've just created.



When you run your Jupyter notebook, you can “Select Kernel” to run your code in your new conda environment.



If you have any further questions on installation for a virtual environment, don't hesitate to reach out in the Slack or email ruhiy@umich.edu.