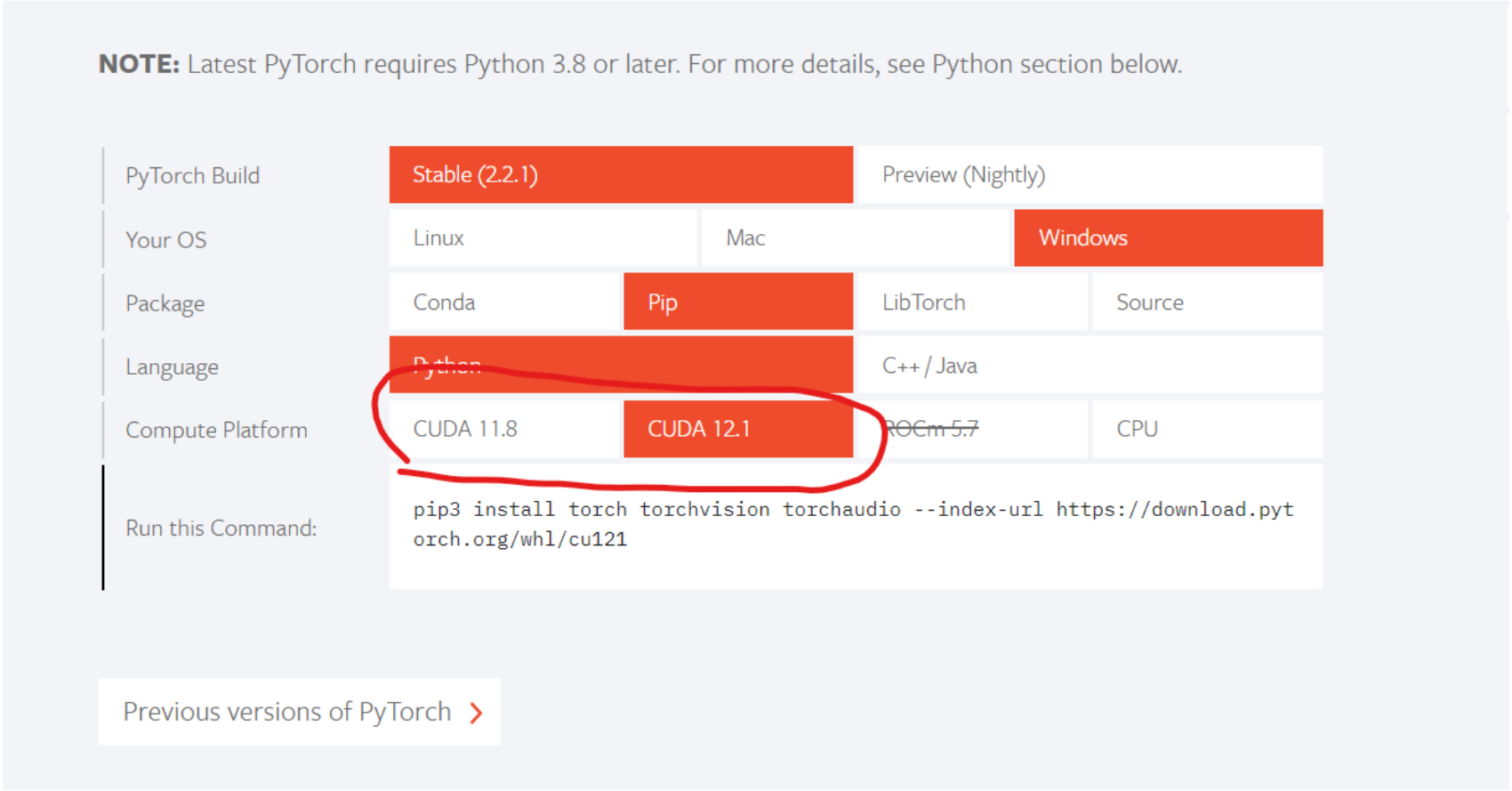
First, go to the PyTorch official website and check for stable PyTorch CUDA support:

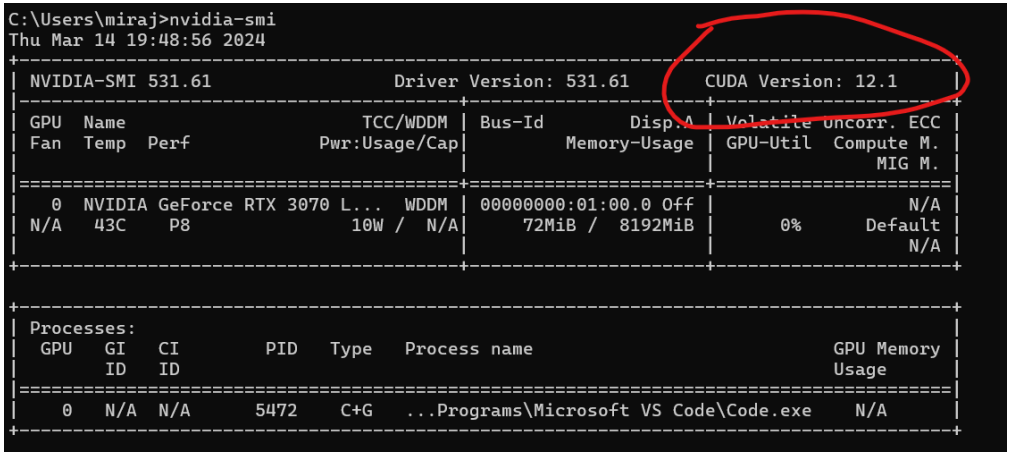


Here you can see for stable pytorch(2.2.1) the support is cuda 11.8 or cuda 12.1 for latest pytorch .

If your computer already has Nvidia and its drivers installed, you have to follow the steps below:

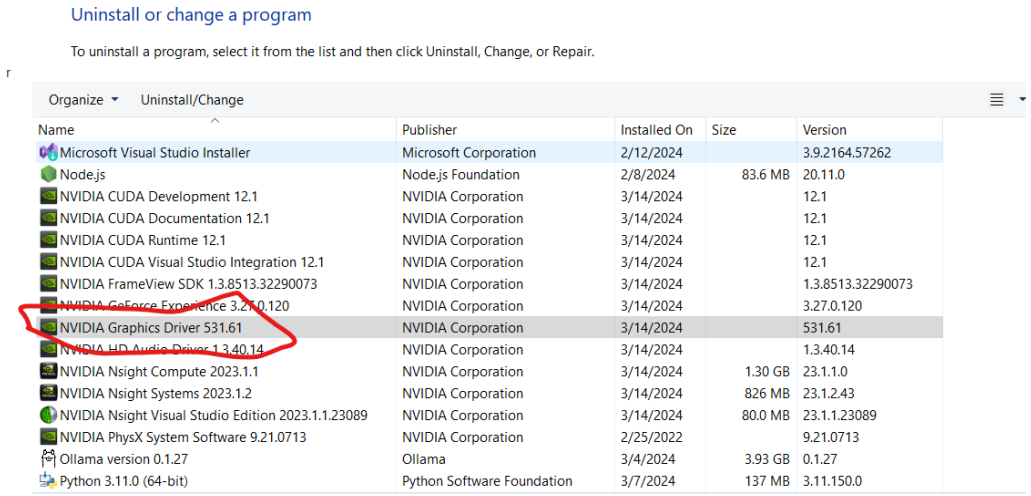
(if your pc don't have nvidea graphics driver go to 3(click here))

1) First type **nvidia-smi** in cmd prompt.

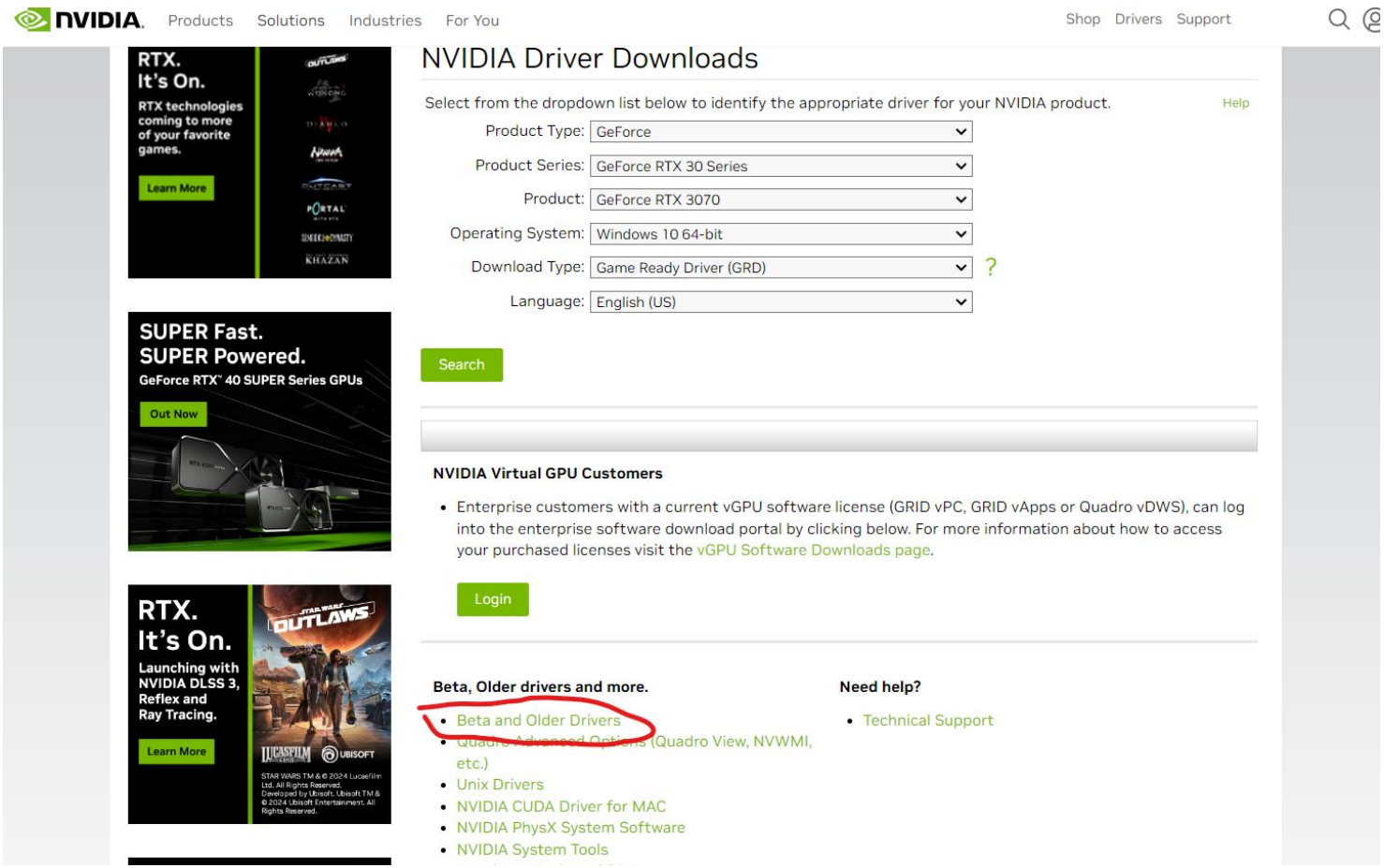


Here, by default, my device has Nvidia graphics drivers, which provide a CUDA-compatible version of 12.1, compatible with the PyTorch version.

2) If your CUDA version does not match with the PyTorch supported version, you need to uninstall the graphics driver first and restart your PC.

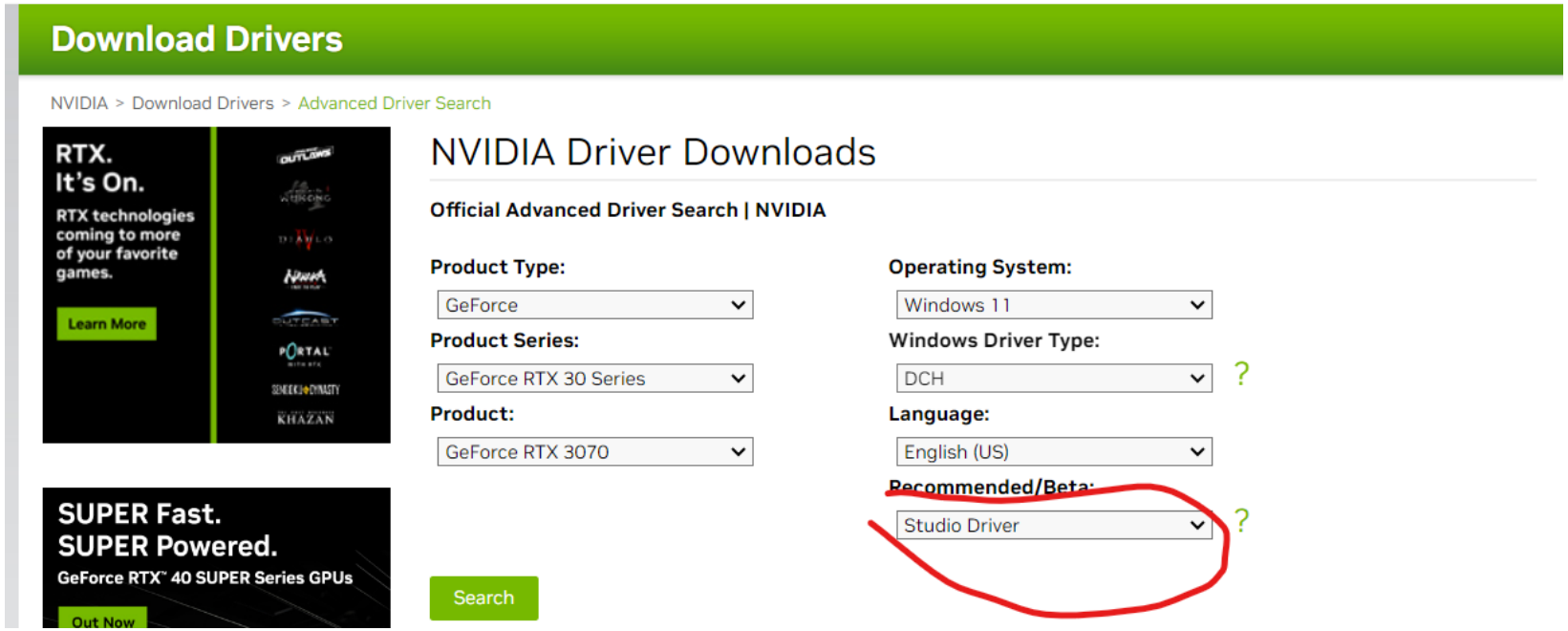


3 After uninstalling go to this link https://www.nvidia.com/download/index.aspx?lang=en-us



Click on beta and older drivers

3) Provide the details of the GPU according to your computer. You can check your GPU details in the Task Manager under the Performance section.



Then Click on Search

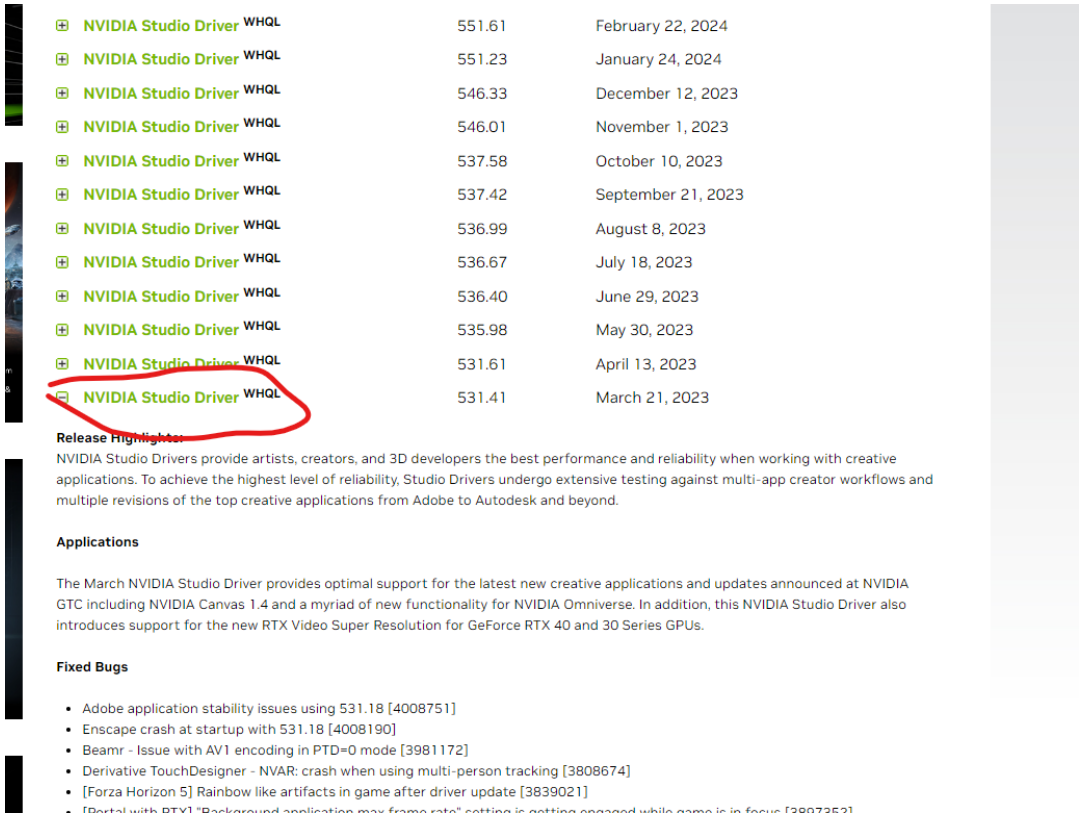
You will find many versions here.

Search

Name	Version	Release Date
NVIDIA Studio Driver WHQL	551.61	February 22, 2024
NVIDIA Studio Driver WHQL	551.23	January 24, 2024
NVIDIA Studio Driver WHQL	546.33	December 12, 2023
NVIDIA Studio Driver WHQL	546.01	November 1, 2023
NVIDIA Studio Driver WHQL	537.58	October 10, 2023
NVIDIA Studio Driver WHQL	537.42	September 21, 2023
NVIDIA Studio Driver WHQL	536.99	August 8, 2023
NVIDIA Studio Driver WHQL	536.67	July 18, 2023
NVIDIA Studio Driver WHQL	536.40	June 29, 2023
NVIDIA Studio Driver WHQL	535.98	May 30, 2023
NVIDIA Studio Driver WHQL	531.61	April 13, 2023
NVIDIA Studio Driver WHQL	531.41	March 21, 2023
NVIDIA Studio Driver WHQL	528.49	February 8, 2023
NVIDIA Studio Driver WHQL	528.24	January 23, 2023
NVIDIA Studio Driver WHQL	528.02	January 5, 2023
NVIDIA Studio Driver WHQL	527.56	December 8, 2022
NVIDIA Studio Driver WHQL	526.98	November 16, 2022
NVIDIA Studio Driver WHQL	522.30	October 18, 2022
NVIDIA Studio Driver WHQL	517.40	September 20, 2022
NVIDIA Studio Driver WHQL	516.94	August 9, 2022

We have to check which Studio Driver provides CUDA 12.1 compatibility. (Why CUDA 12.1? Because the stable version of PyTorch supports CUDA 12.1.)

3) Let's select the Studio Driver and verify whether CUDA 12.1 is available or not.



NVIDIA Studio Driver WHQL	551.61	February 22, 2024
NVIDIA Studio Driver WHQL	551.23	January 24, 2024
NVIDIA Studio Driver WHQL	546.33	December 12, 2023
NVIDIA Studio Driver WHQL	546.01	November 1, 2023
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NVIDIA Studio Driver WHQL	536.40	June 29, 2023
NVIDIA Studio Driver WHQL	535.98	May 30, 2023
NVIDIA Studio Driver WHQL	531.61	April 13, 2023
NVIDIA Studio Driver WHQL	531.41	March 21, 2023

Release Highlights:

NVIDIA Studio Drivers provide artists, creators, and 3D developers the best performance and reliability when working with creative applications. To achieve the highest level of reliability, Studio Drivers undergo extensive testing against multi-app creator workflows and multiple revisions of the top creative applications from Adobe to Autodesk and beyond.

Applications

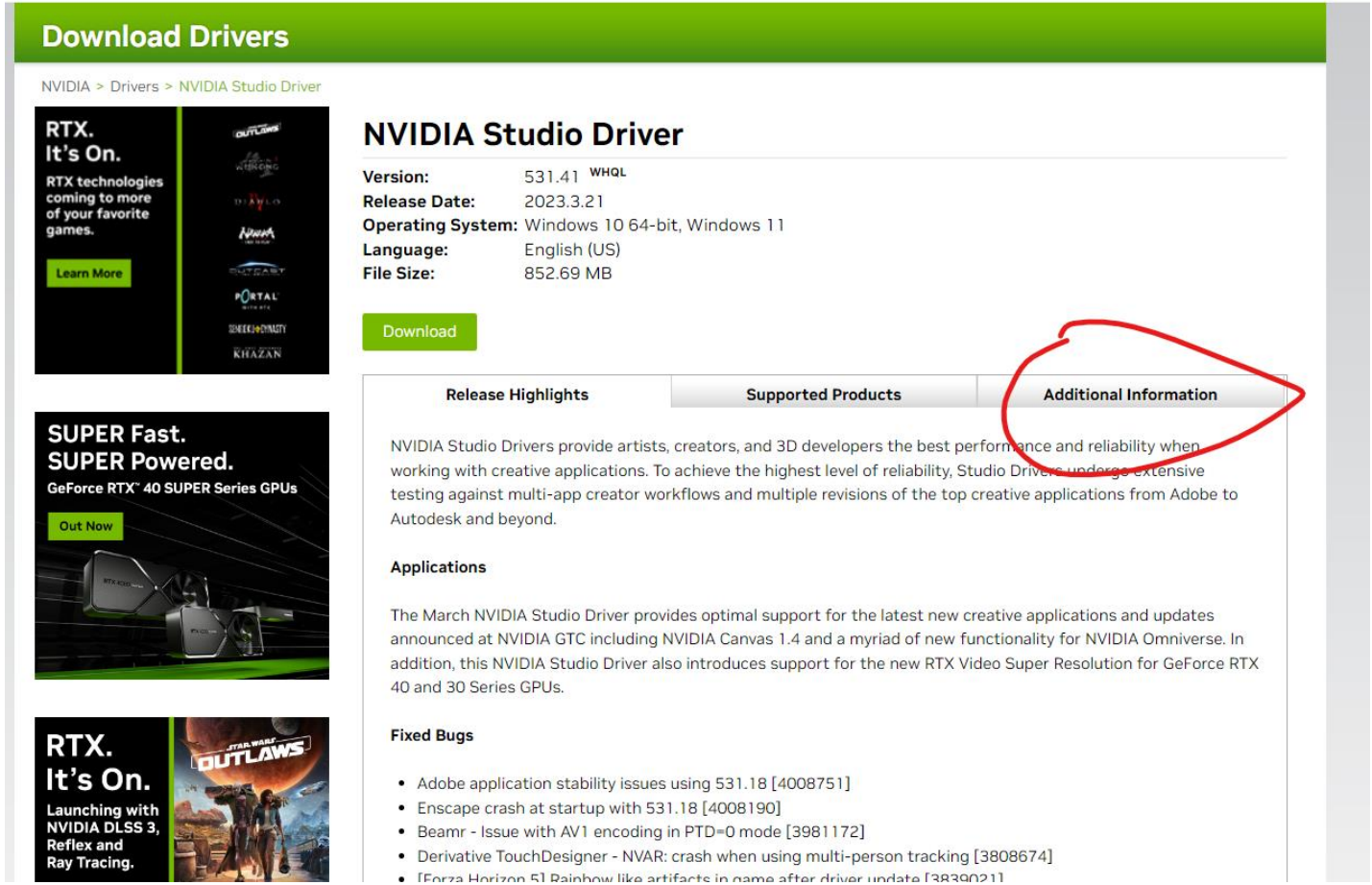
The March NVIDIA Studio Driver provides optimal support for the latest new creative applications and updates announced at NVIDIA GTC including NVIDIA Canvas 1.4 and a myriad of new functionality for NVIDIA Omniverse. In addition, this NVIDIA Studio Driver also introduces support for the new RTX Video Super Resolution for GeForce RTX 40 and 30 Series GPUs.

Fixed Bugs

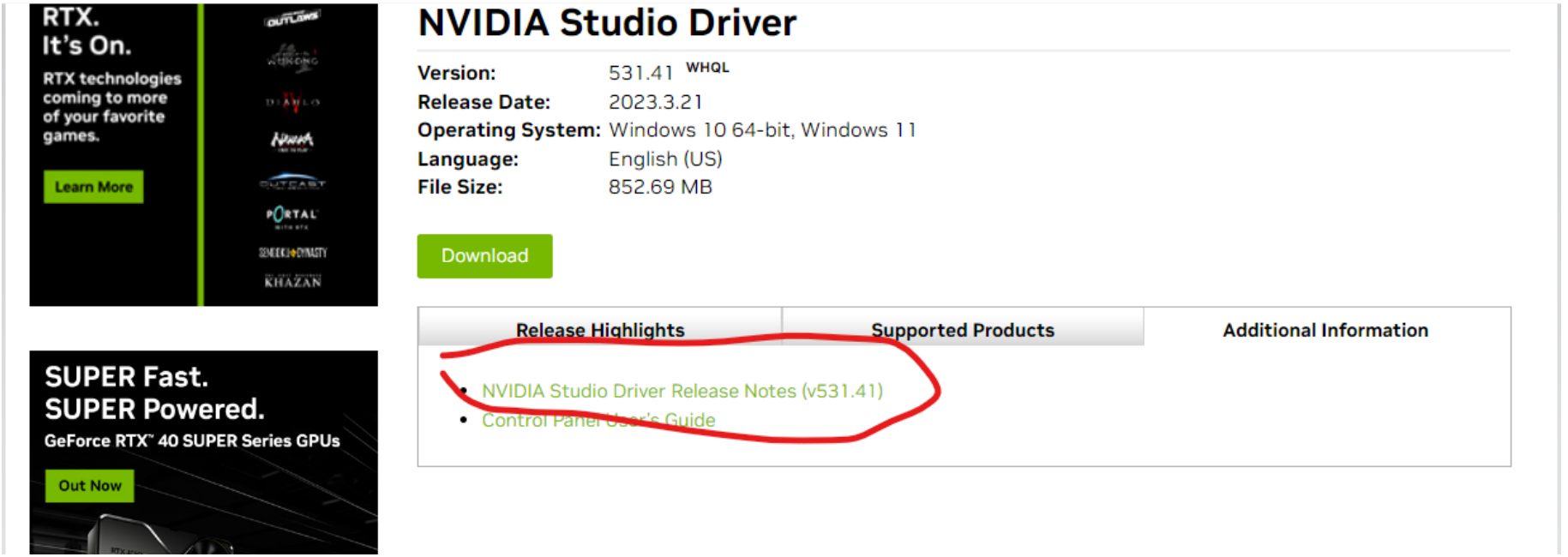
- Adobe application stability issues using 531.18 [4008751]
- Enscape crash at startup with 531.18 [4008190]
- Beamr - Issue with AV1 encoding in PTD=0 mode [3981172]
- Derivative TouchDesigner - NVAR: crash when using multi-person tracking [3808674]
- [Forza Horizon 5] Rainbow like artifacts in game after driver update [3839021]

I have selected this version. Now, let's click on the Studio version, and you will be redirected to the next page.

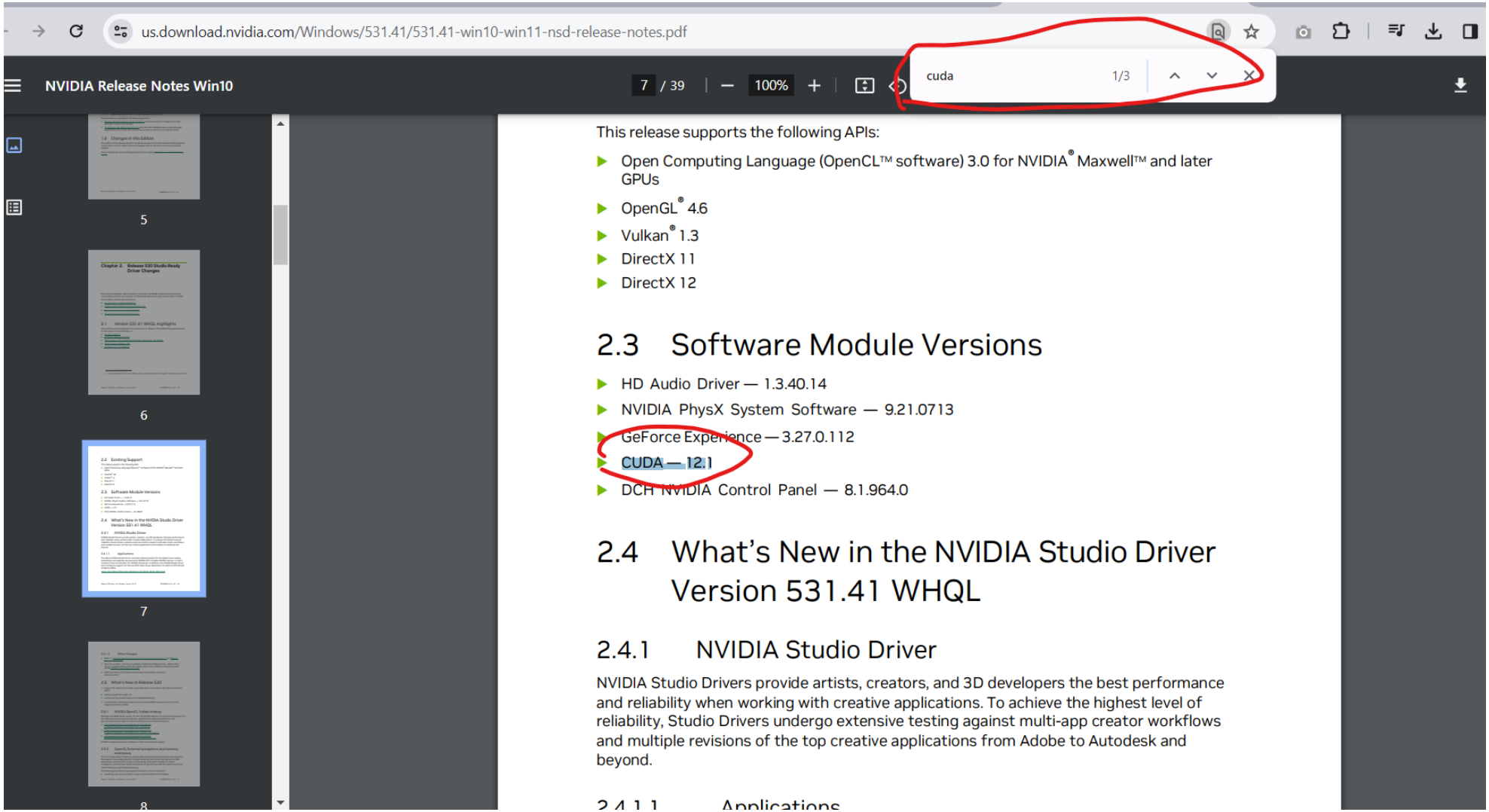
Then Go to the additional information .



Click on the NVIDIA Studio Driver Release Notes



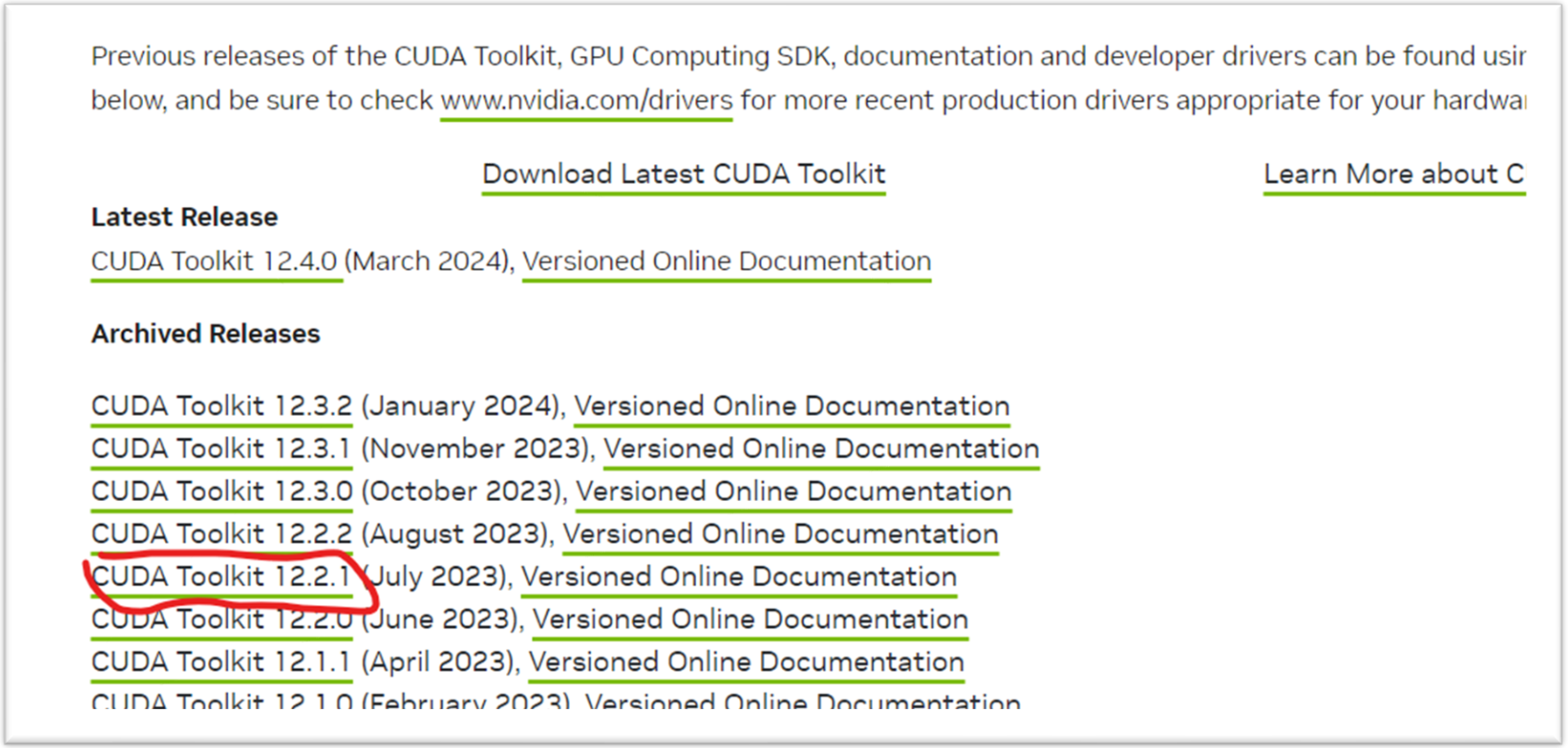
Press Ctrl+F and type "CUDA" to see which version of CUDA the Studio Driver provides.



This Studio Driver provides CUDA 12.1, so I am downloading it. (You should also download the setup and restart your PC.)

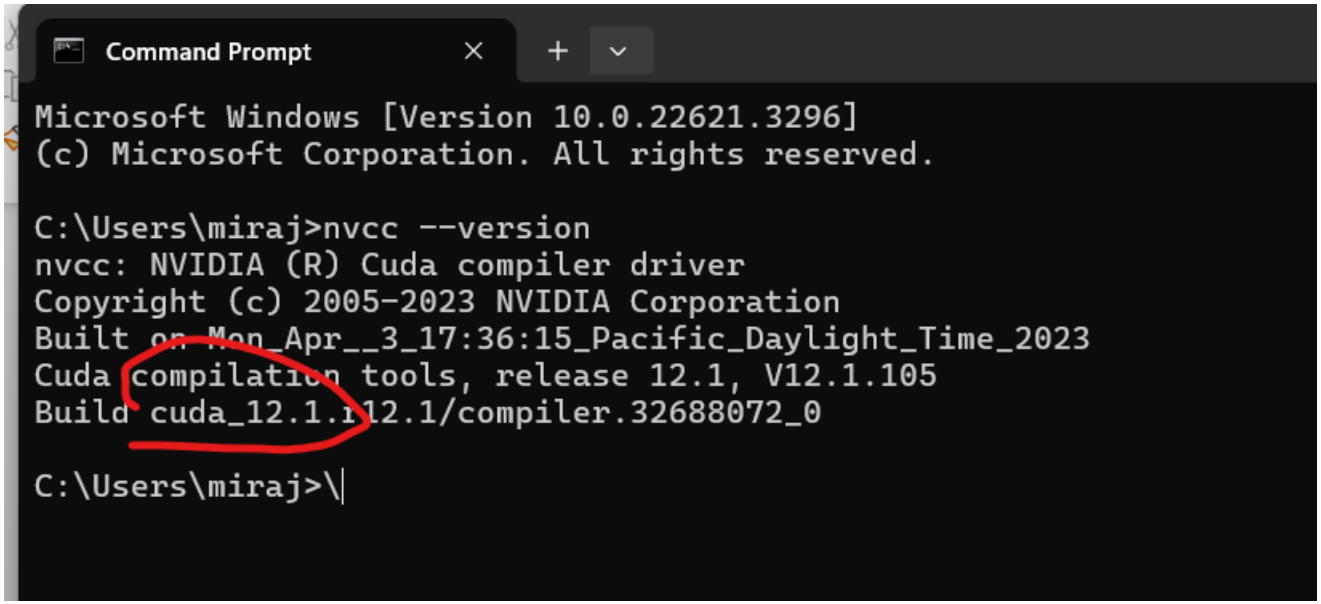
Now after setup of the studio driver go to this link https://developer.nvidia.com/cuda-toolkit-archive

Here, you have to download the same version of the CUDA Toolkit which is provided by the Studio Driver. So, I am downloading CUDA Toolkit version 12.1.



After downloading this and do setup.

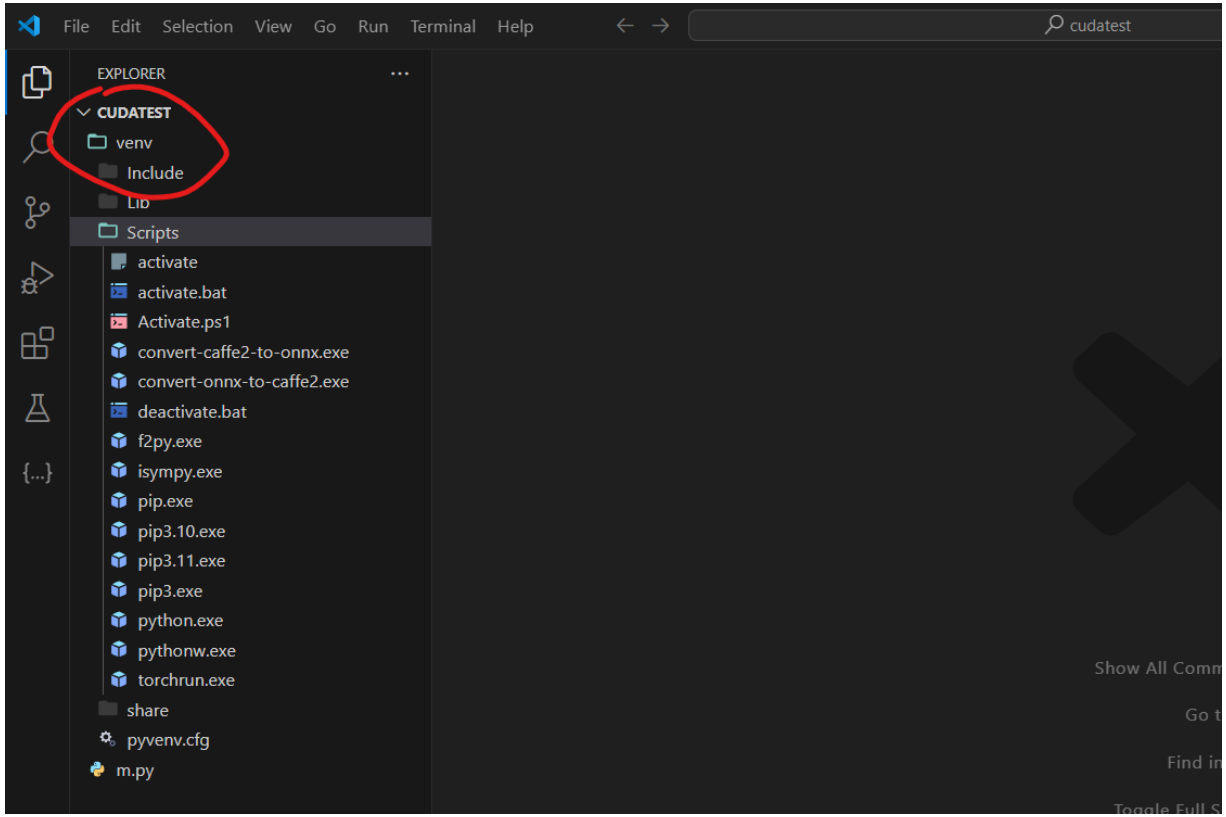
To check if the CUDA Toolkit is working, type `nvcc --version` in the command prompt.



Here everything is going perfect.

Now you are ready now make a virtual env on your pc

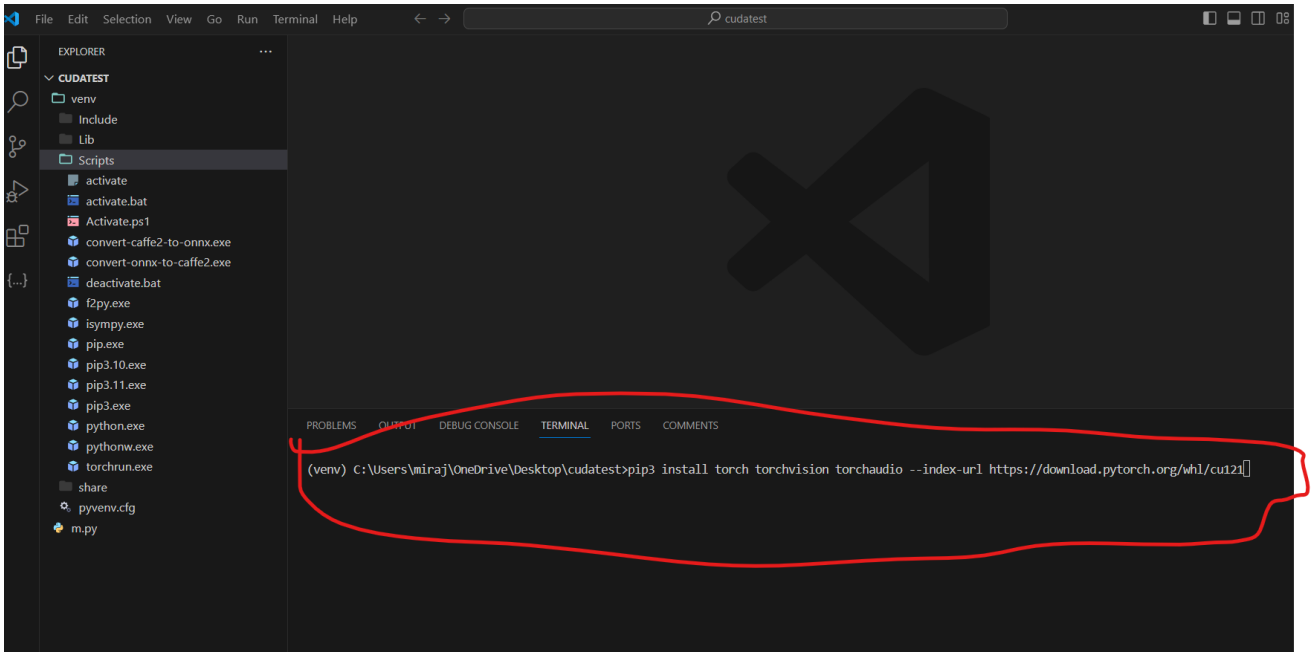
You can use python -m venv ./venv to make virtual environment using python



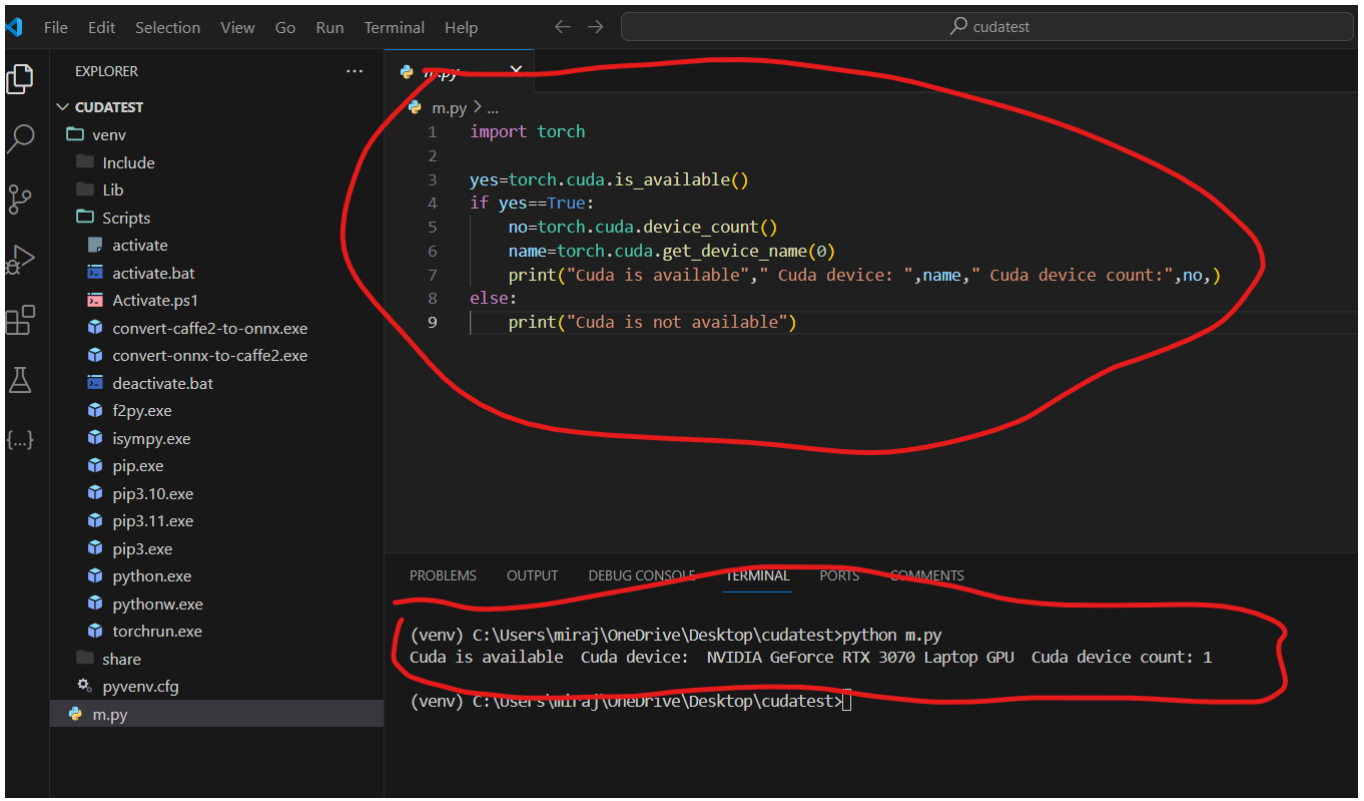
After making virtual environment activate it.

Now finally you can run this code in cmd prompt in your virtual environment

PyTorch Build	Stable (2.2.1)		Preview (Nightly)	
Your OS	Linux	Mac	Windows	
Package	Conda	Pip	LibTorch	Source
Language	Python		C++ / Java	
Compute Platform	CUDA 11.8	CUDA 12.1	~~ROCm 5.7~~	CPU
Run this Command:	`pip3 install torch torchvision torchaudio --index-url https://download.pytorch.org/whl/cu121`			



After successfully installing Python, you can check if CUDA is available or not by running a Python script like this:



The code is :

```
import torch

yes=torch.cuda.is_available()
if yes==True:
    no=torch.cuda.device_count()
    name=torch.cuda.get_device_name(0)
    print("Cuda is available"," Cuda device: ",name," Cuda device count:",no,)
else:
    print("Cuda is not available")
```

"Please follow me on LinkedIn https://www.linkedin.com/in/miraj-deep-bhandari-624bb0263/ . I am sharing notes on generative AI, LLM, deep learning, and many more topics."

(you download 2019 version and install all c++ distributions and packages if cuda is not deteted https://visual-studio-2019.en.lo4d.com/windows)