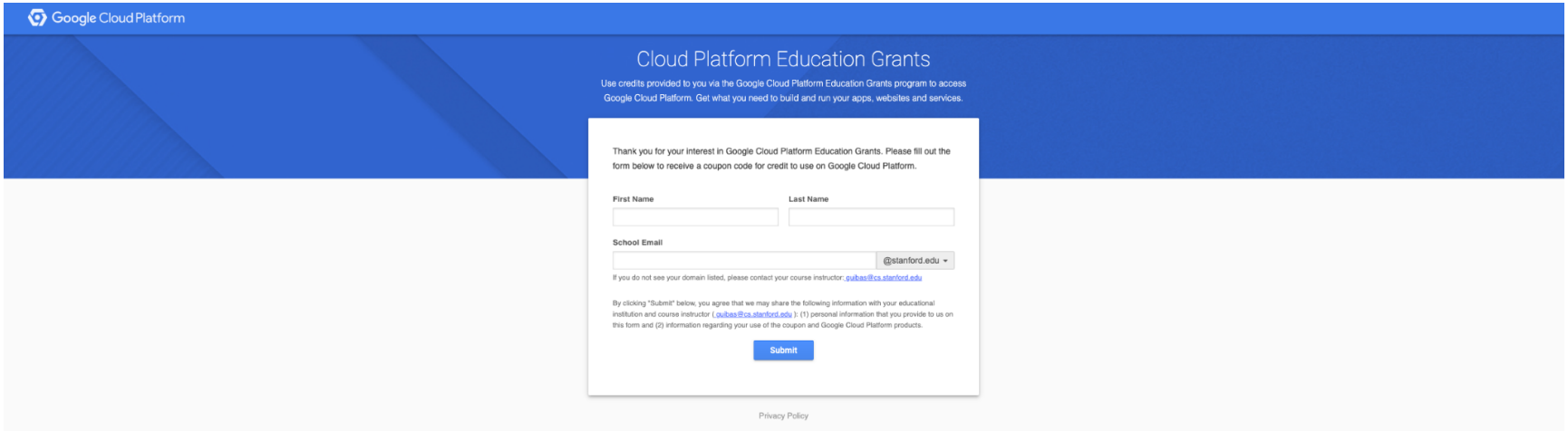
Google Cloud Platform Tutorial

CS233: Geometric and Topological Data Analysis

Request Google Cloud Coupon

1. Go to https://gcp.secure.force.com/GCPEDU?cid=aQ%2B%2FusNGfNk50GvkSIquermejB1tJYn4tSbU1Xdz3Ovpp0q9oIDtrfVYUDP6kkRB/

2. You will be asked for a name and email address, which needs to match your school domain. A confirmation email will be sent to you with a coupon code.
3. You can only request ONE code per unique email address.



Redeem Coupon

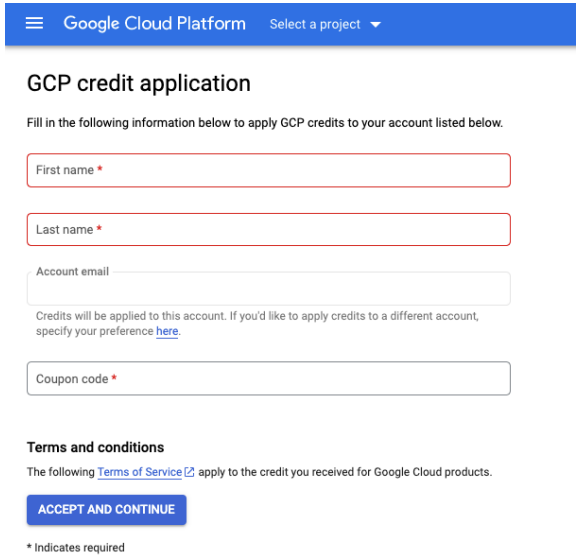
1. Go to https://console.cloud.google.com/education
2. Fill out form with your coupon code
3. [Potential Issue] If you run into the below error, try logging into a different google account.

Error

You don't have permission to create a billing account for your organization

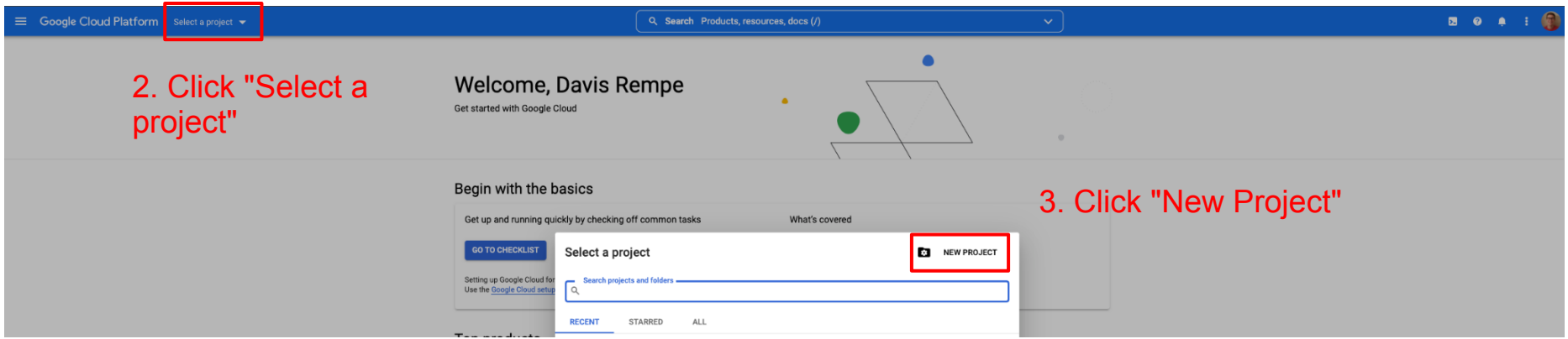
Tracking Number: 6247344371908390752

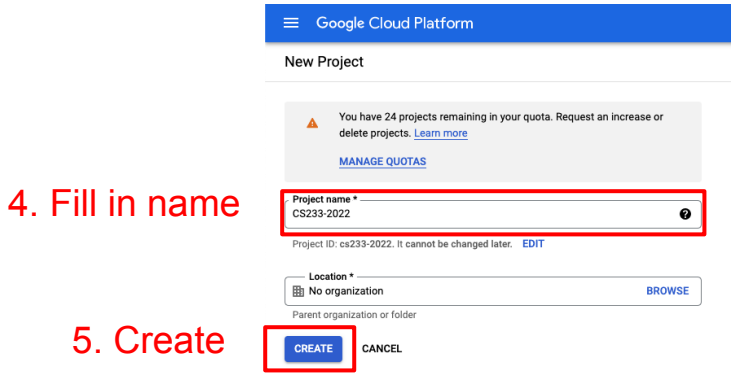
Send feedback



Create a Project

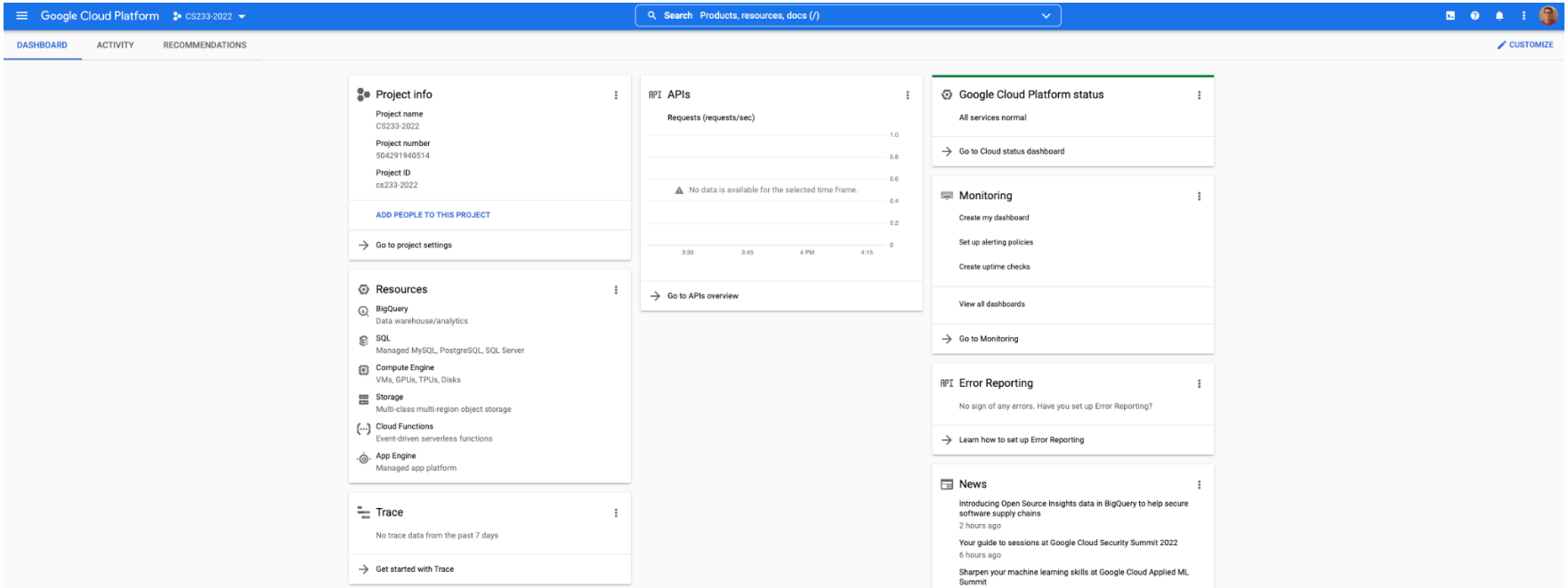
1. Go to https://console.cloud.google.com/getting-started





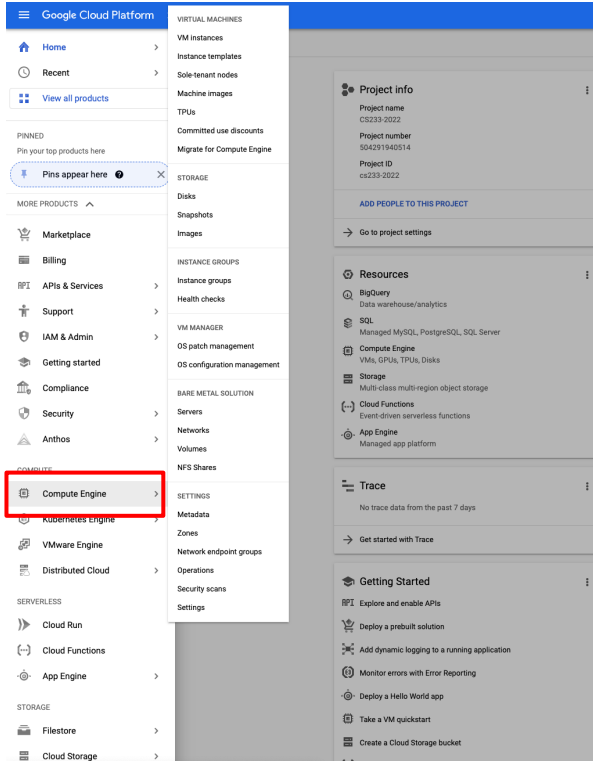
Go to Your New Project

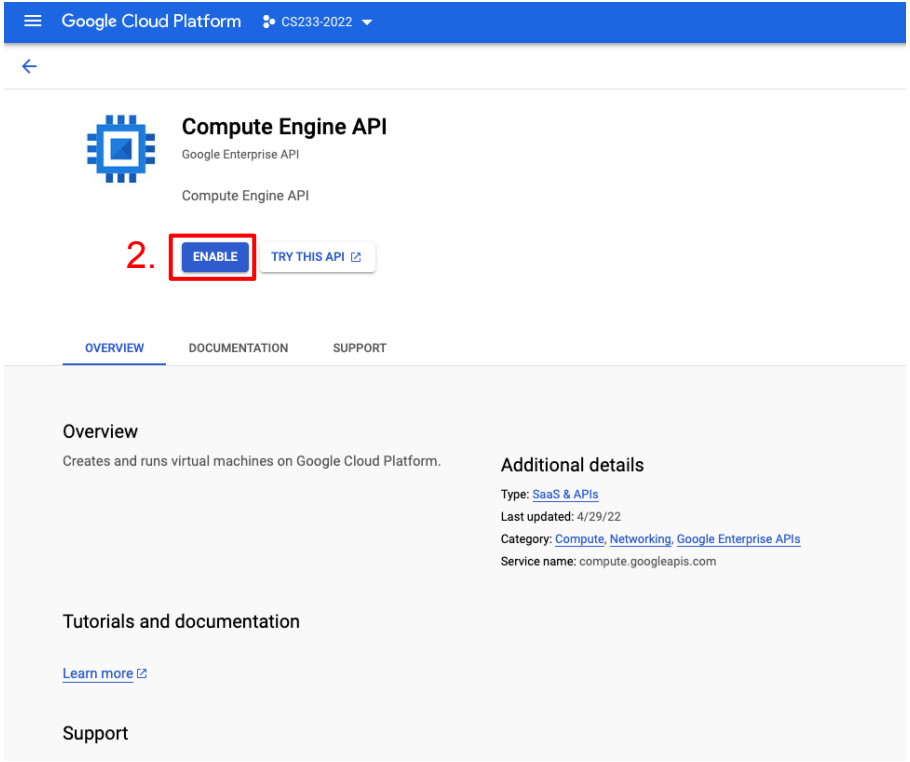
1. If it looks like this, you've successfully created the project!



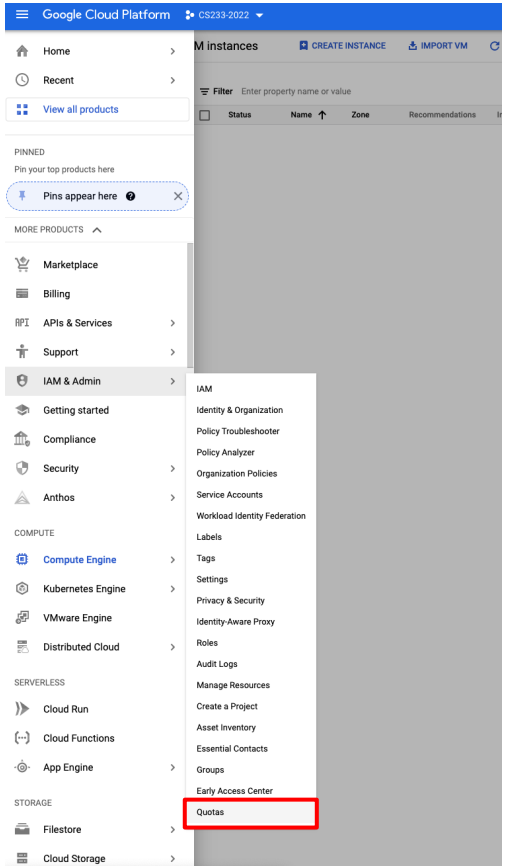
Enable Compute Engine API

1. Go to compute engine page
2. Press "Enable"

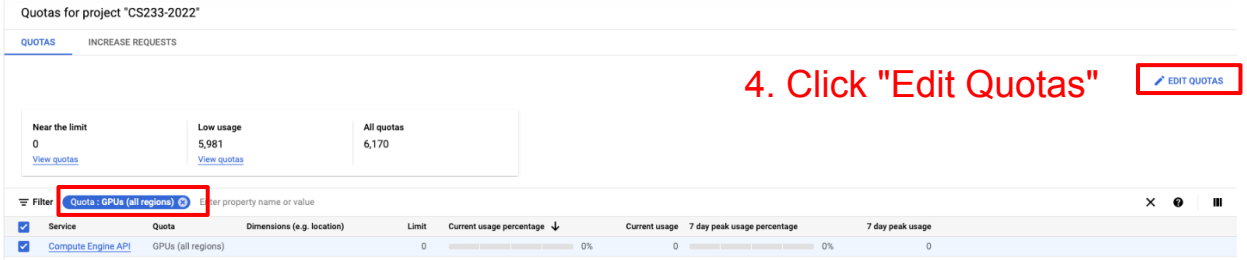




Edit Quota to Enable Using a GPU

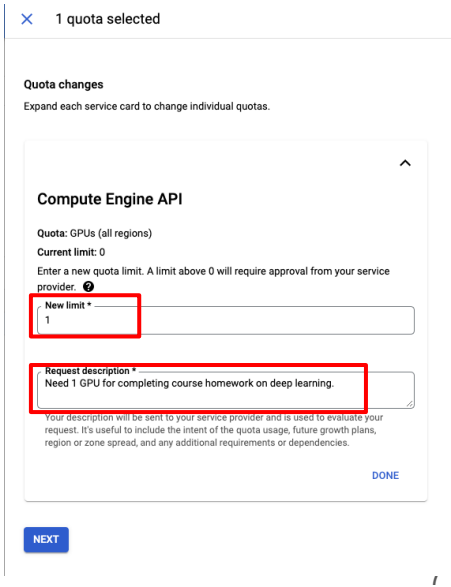


1. Go to Quotas page



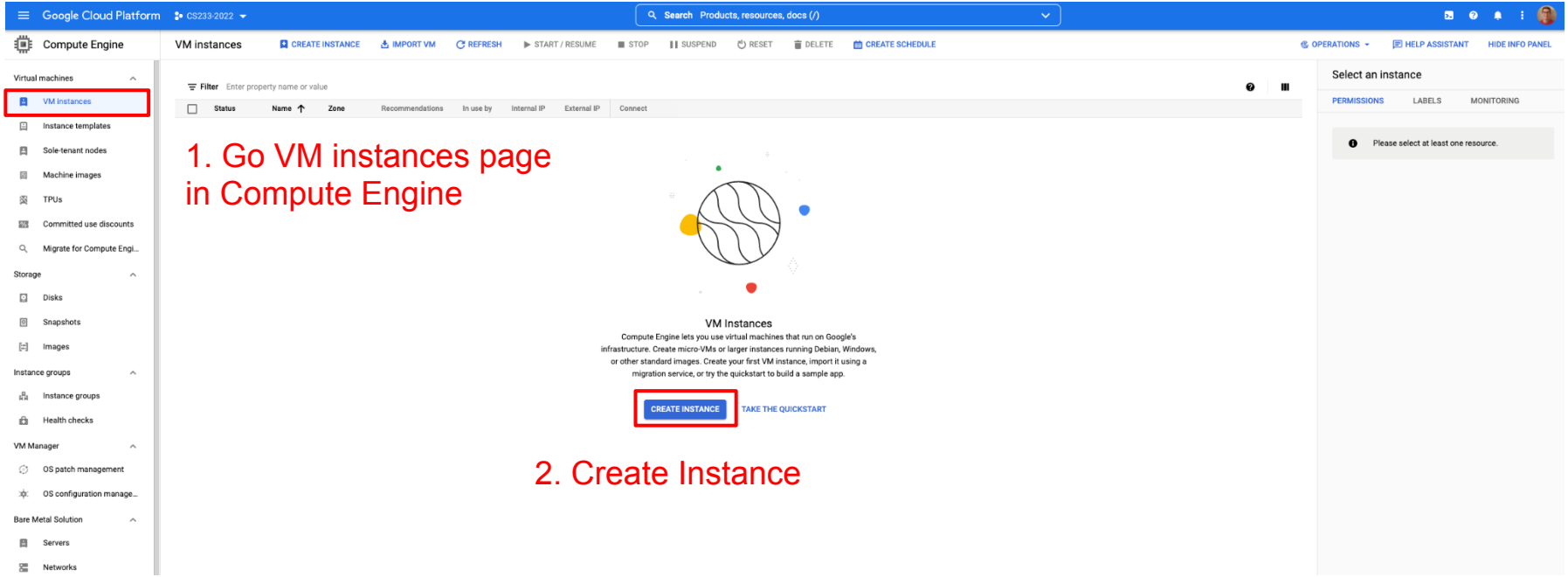
4. Click "Edit Quotas"

2. Search "GPUs (all regions)"
3. Check box for "GPUs (all regions)" Quota

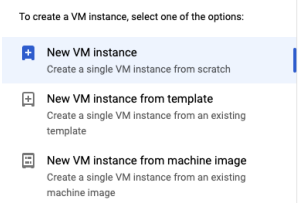


5. Change limit to 1
6. Next > Fill out info > Submit request
(may take a few minutes to fulfill)

Create a GPU VM Instance



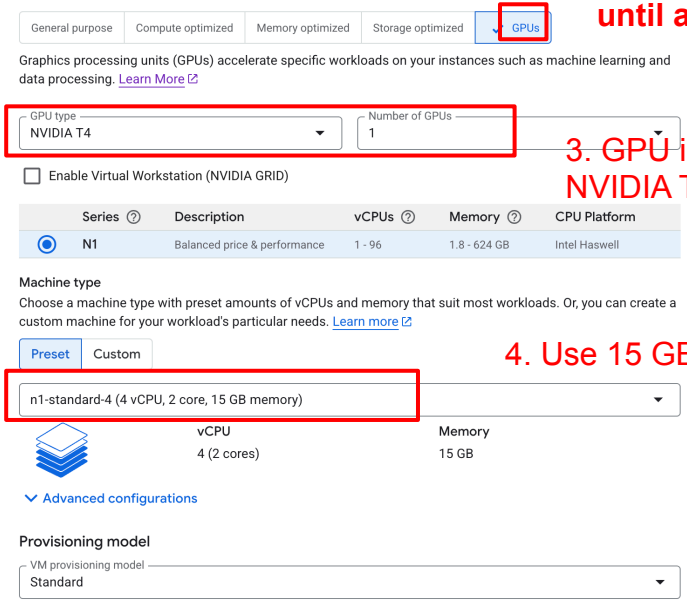
Create a GPU VM Instance





1. Set name

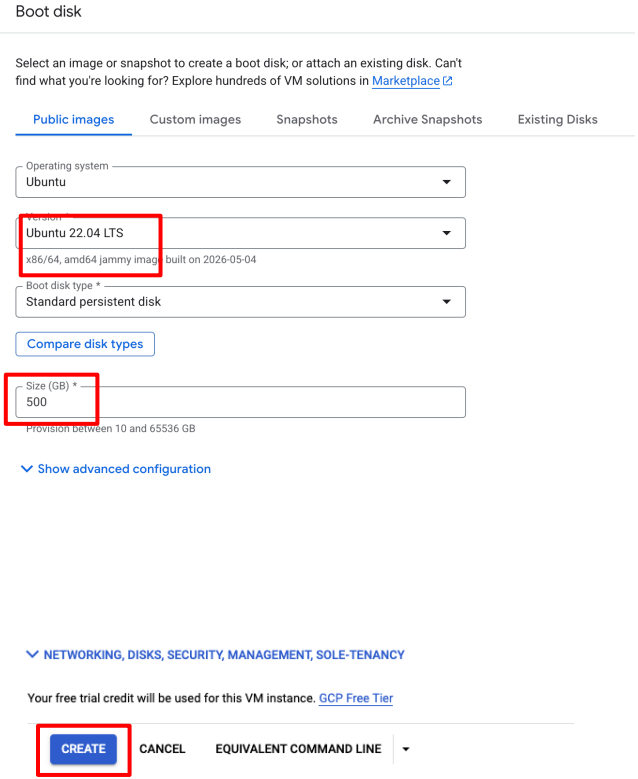
2. Set region (**may have to change based on GPU availability - no dashboard for this, try until available)**



3. GPU instance with 1 NVIDIA T4

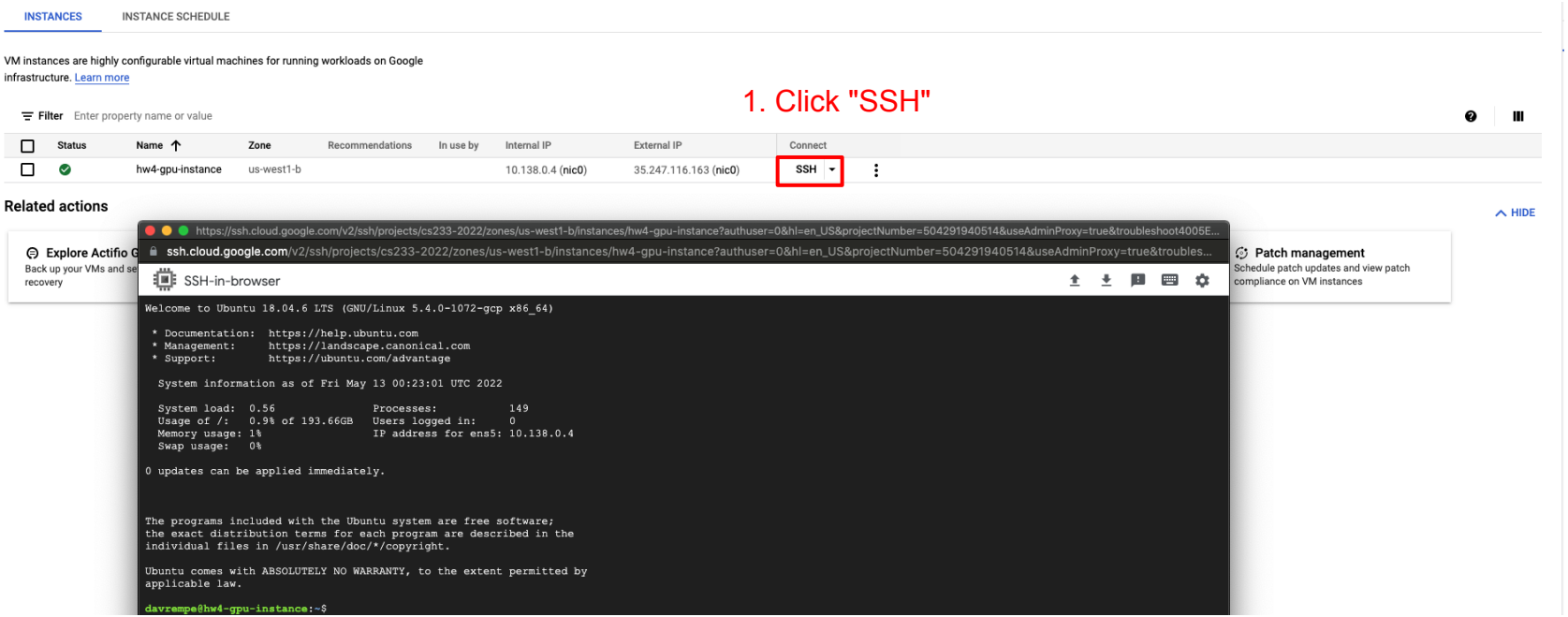
4. Use 15 GB memory

5. Change boot disk to "Ubuntu 22.04" and increase size



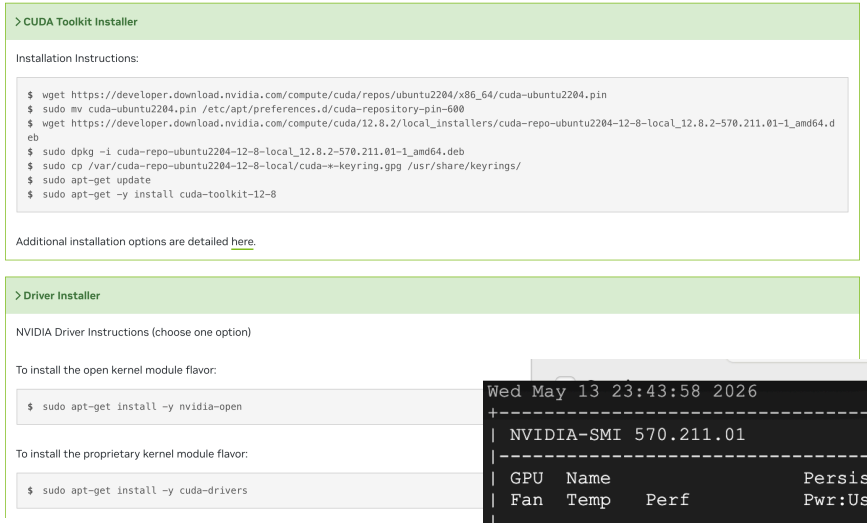
6. CREATE!

Login to the Instance

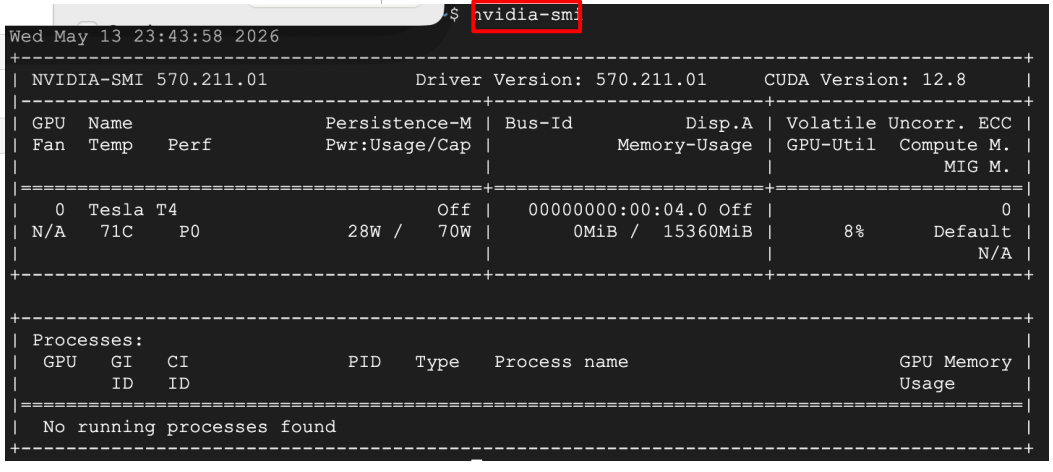


Setup Environment - Install CUDA

1. Follow the commands here: https://developer.nvidia.com/cuda-12-8-2-download-archive?target_os=Linux&target_arch=x86_64&Distribution=Ubuntu&target_version=22.04&target_type=deb_local



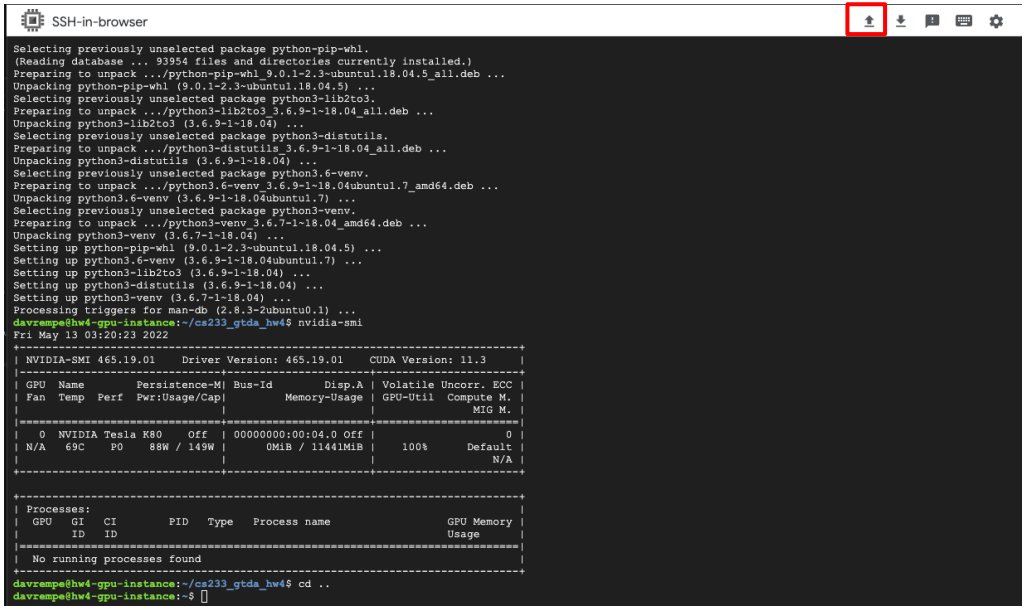
2. Run "nvidia-smi" to make sure the install is successful



Setup Environment - HW4 Code

1. Upload your code to the instance using the upload button.
2. Go to the root directory "cd cs233_gtda_hw4"

Upload file button. **Note**: it's easiest to zip up your codebase and transfer the one zip file.



Setup Environment - HW4 Code

1. Install virtual environment with "sudo apt-get install python3-venv"
2. Carefully follow the README in the starter code to set up the rest of the environment. *Especially* **note**:
    a. Install PyTorch manually with "pip install torch torchvision torchaudio --index-url https://download.pytorch.org/whl/**cu128**" to make sure the GPU version is installed.
3. If everything is set up correctly, you should be able to run your script
    a. Reminder: make sure your device is "cuda" in the PyTorch code instead of “cpu".

Setup Environment - Jupyter Notebook

1. Install Google Cloud SDK following instructions here: https://docs.cloud.google.com/sdk/docs/install-sdk

2. ssh to your VM instance in command line, with port mapping
   gcloud compute ssh [INSTANCE_NAME] -- -L 8888:localhost:8888

```
gcloud compute ssh instance-20260511-231312 -- -L 8888:localhost:8888
```

3. in the VM terminal, run jupyter notebook at port 8888
   jupyter notebook --no-browser —port=8888

```
t@instance-20260511-231312:~/cs233_gtda_hw4$ jupyter notebook --no-browser --port=8888
```

4. Open the link in the terminal in your local browser

```
Or copy and paste one of these URLs:
    http://localhost:8888/tree?token=d6e254d8538c58e0122d5dcb04875ec07383b8e1067c34f9
    http://127.0.0.1:8888/tree?token=d6e254d8538c58e0122d5dcb04875ec07383b8e1067c34f9
```

Last but **NOT LEAST**…

1. Always **stop your instance** when you are done using it to avoid wasting credits!

