11-785 Introduction to Deep Learning

Fall 2025

GCP setup

TAs:
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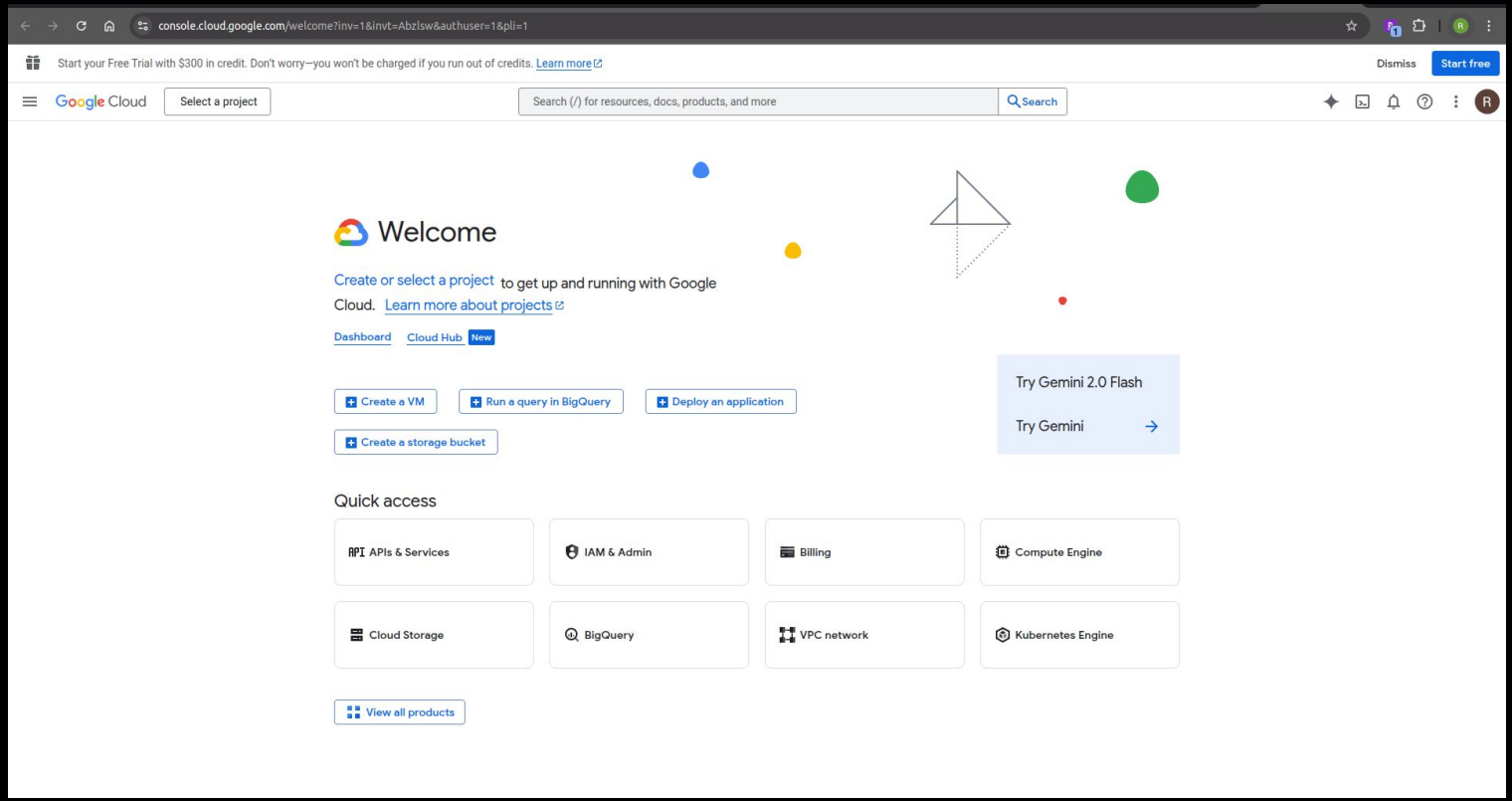
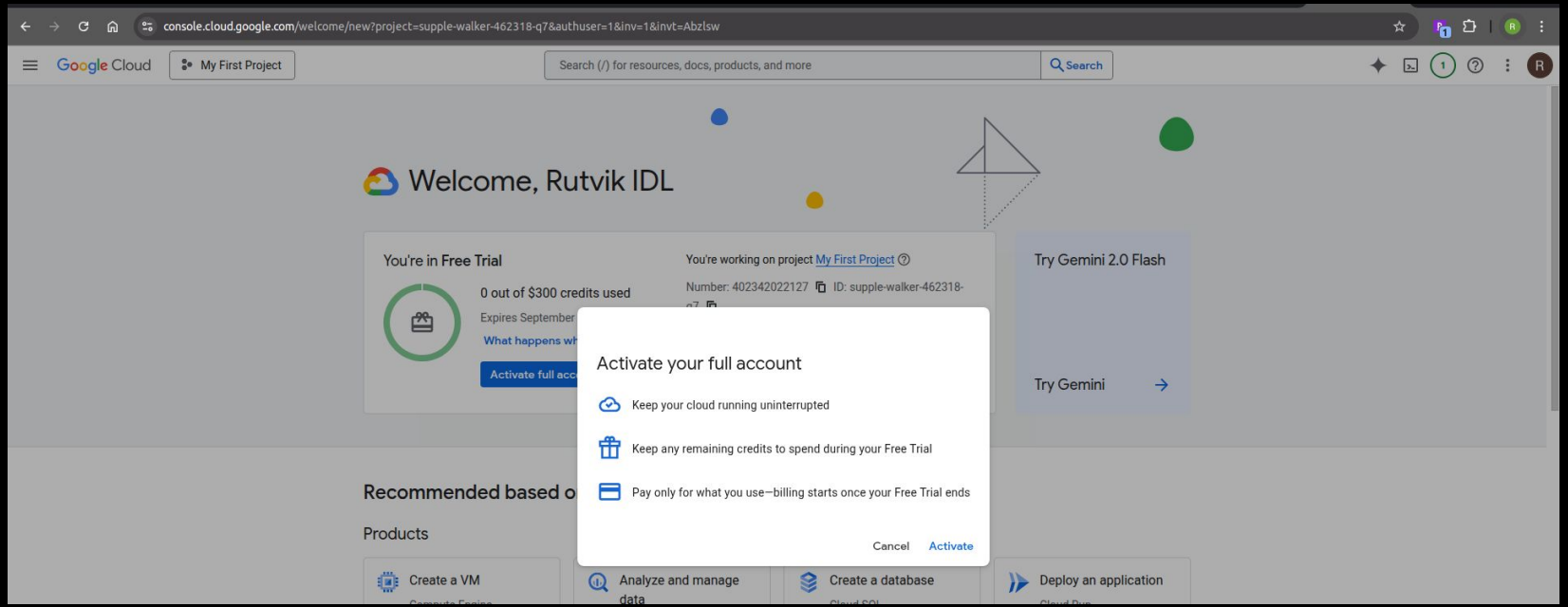
Creating GCP account:

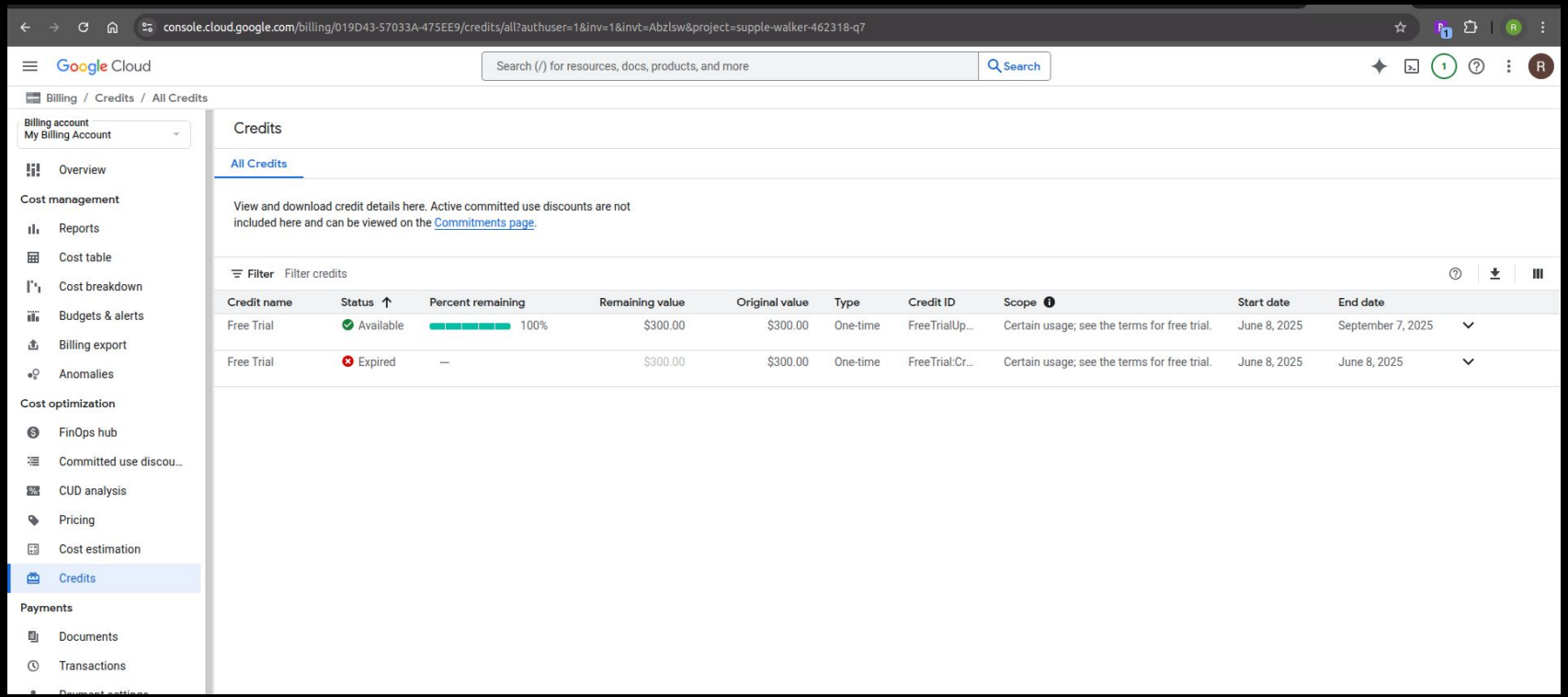
1. Log into and avail the free 300$ credits. If you have already utilized this before create a new account. You will be asked to enter some payment method



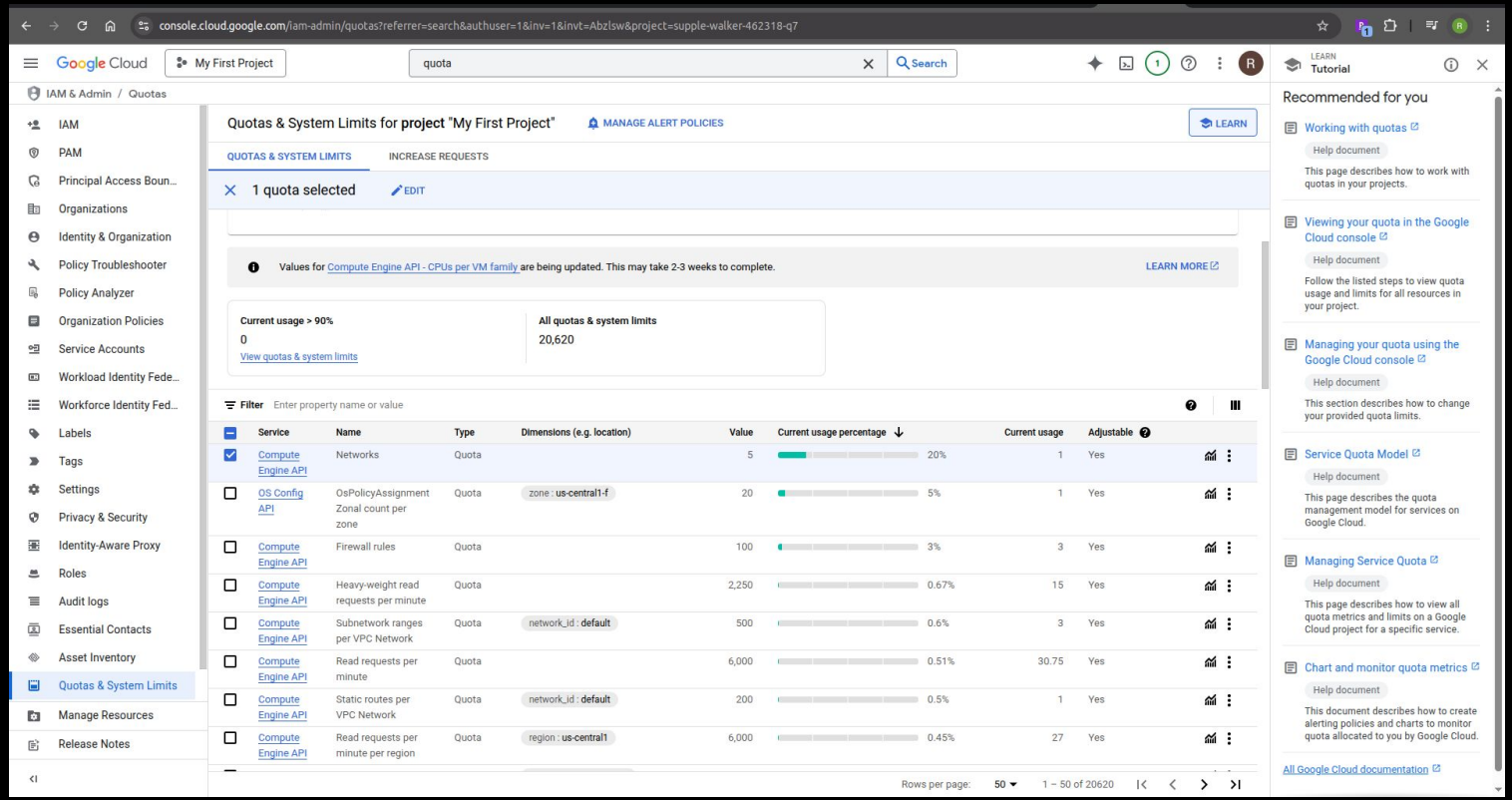
2. Now activate your full account



3. Check credits available



4. Open “All Quotas” and check for value in Compute Engine API. If the value is “0”, select “Compute Engine API and click the “Edit” button and add value of 1. You can add a description like “For my IDL project”



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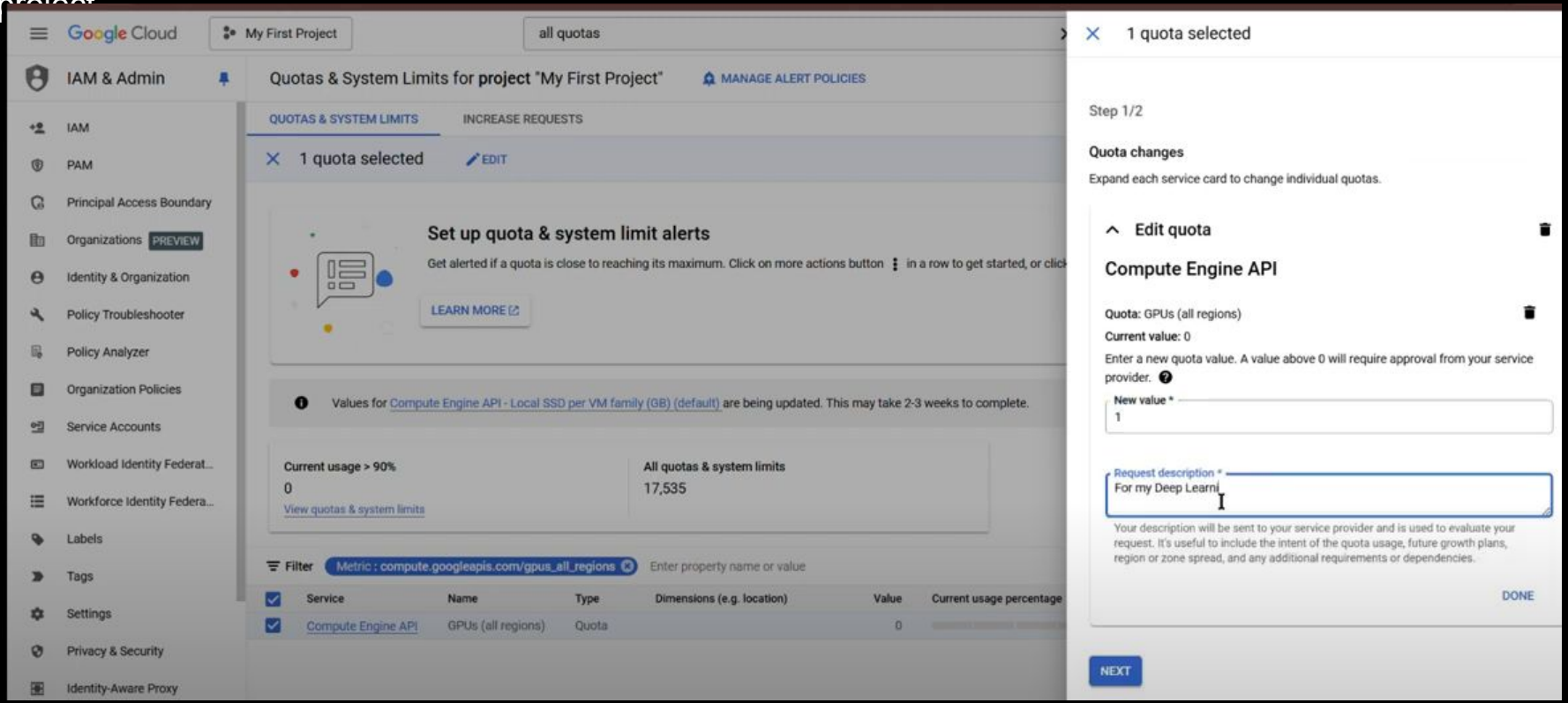


You can also check for which GPU regions have what compute available from https://cloud.google.com/compute/docs/gpus/gpu-regions-zones .This would be helpful in your later assignments

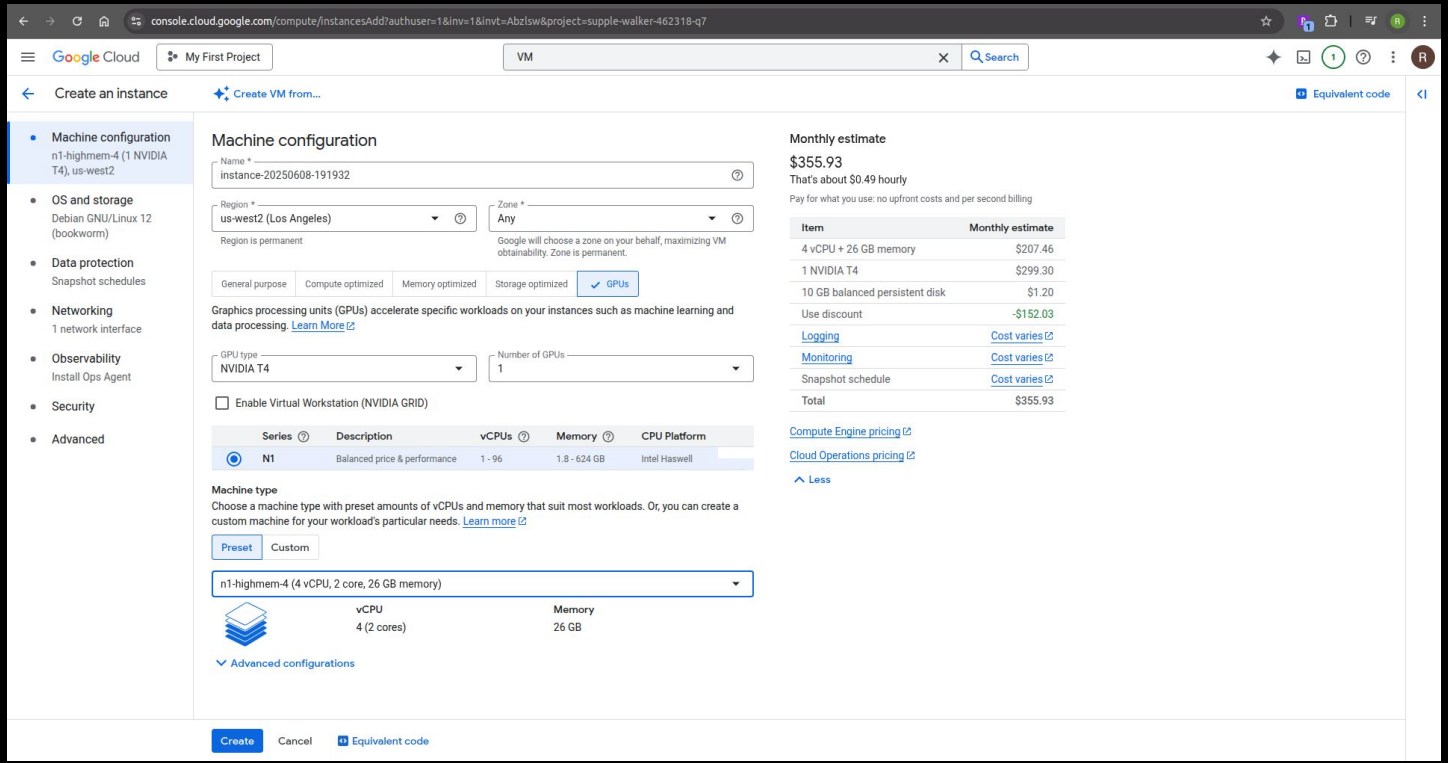
Google has deprecated their Colab instance :(so when will be looking into VM instances. These are similar to EC2 instances provided by AWS.

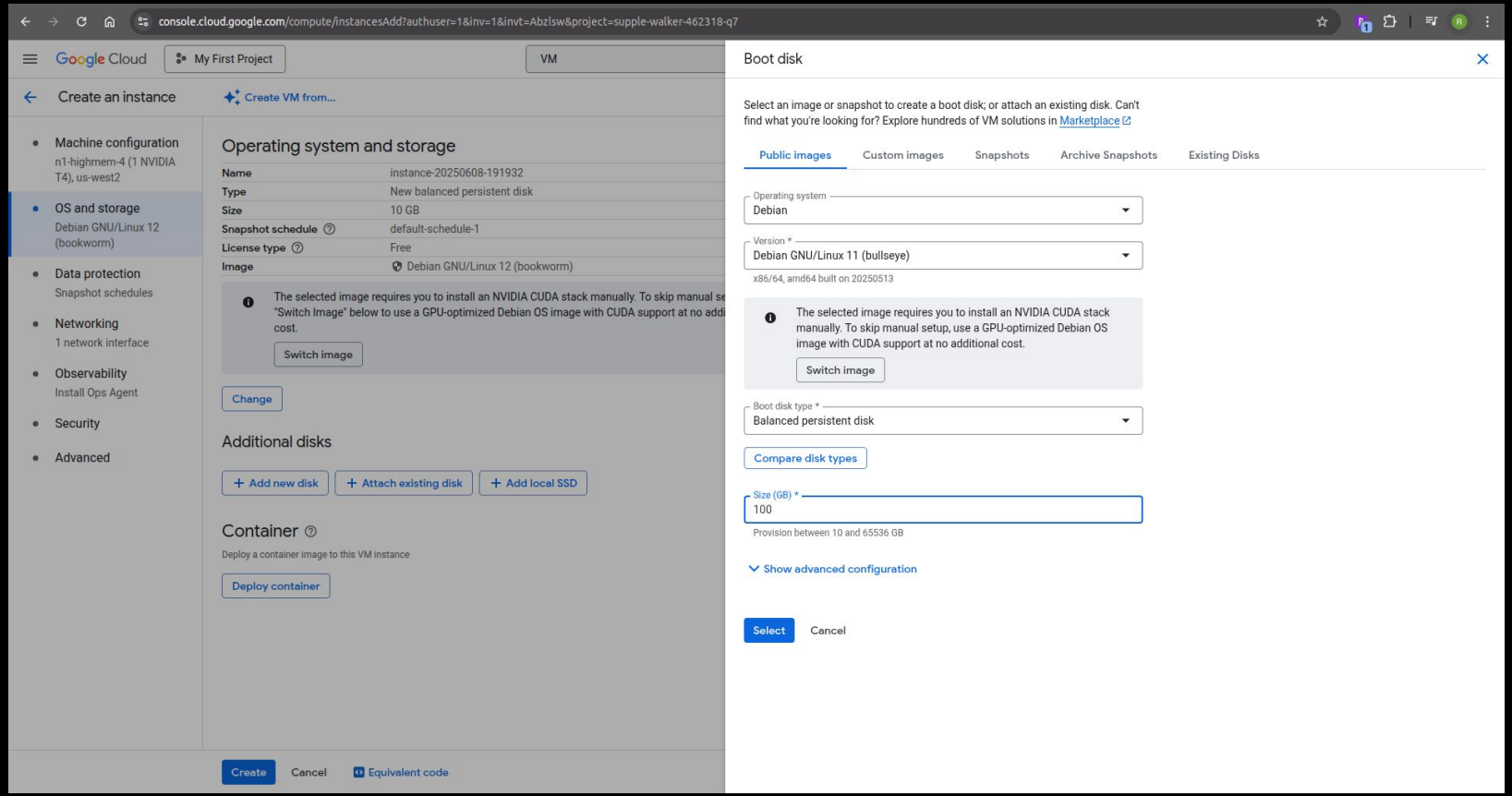
Move to your local terminal and execute below commands. I am using Linux so you may need to modify the code for Mac or Windows. Do remove the comments when pasting.

```
$ cd ~  # Go to your home directory
$ mkdir .ssh # Create a .ssh folder if you don't have it
$ cd .ssh
$ ssh-keygen -t rsa -b 4096 # This is to create a private key
$ Enter file to save the key: IDL_GCP # This will create a file IDL_GCP.pub
$ cat IDL_GCP.pub # To check contents of the file
```

Copy the contents and open SSH keys on GCP. Paste this and remove the last part till the "@" symbol including it. Also add another space after the "==" so that now it is "== your_id"

4. Search for Compute engine and click create Instance. This would ask you to enable APIs. Please enable any APIs that are asked, this is not charged
5. Select a Machine Configuration as needed.




console.cloud.google.com/compute/instancesAdd?authuser=1&inv=1&invt=Abzlsw&project=supple-walker-462318-q7
Google Cloud
My First Project
VM
Create an instance
Create VM from...
Machine configuration
n1-highmem-4 (1 NVIDIA T4), us-west2
OS and storage
Debian GNU/Linux 12 (bookworm)
Data protection
Snapshot schedules
Networking
1 network interface
Observability
Install Ops Agent
Security
Advanced
Operating system and storage
Name
instance-20250608-191932
Type
New balanced persistent disk
Size
10 GB
Snapshot schedule
default-schedule-1
License type
Free
Image
Debian GNU/Linux 12 (bookworm)
The selected image requires you to install an NVIDIA CUDA stack manually. To skip manual se
"Switch Image" below to use a GPU-optimized Debian OS image with CUDA support at no addi
cost.
Switch image
Change
Additional disks
+ Add new disk
+ Attach existing disk
+ Add local SSD
Container
Deploy a container image to this VM instance
Deploy container
Create
Cancel
Equivalent code
Boot disk
Select an image or snapshot to create a boot disk; or attach an existing disk. Can't find what you're looking for? Explore hundreds of VM solutions in Marketplace
Public images
Custom images
Snapshots
Archive Snapshots
Existing Disks
Operating system
Debian
Version *
Debian GNU/Linux 11 (bullseye)
x86/64, amd64 built on 20250513
The selected image requires you to install an NVIDIA CUDA stack manually. To skip manual setup, use a GPU-optimized Debian OS image with CUDA support at no additional cost.
Switch image
Boot disk type *
Balanced persistent disk
Compare disk types
Size (GB) *
100
Provision between 10 and 65536 GB
Show advanced configuration
Select
Cancel

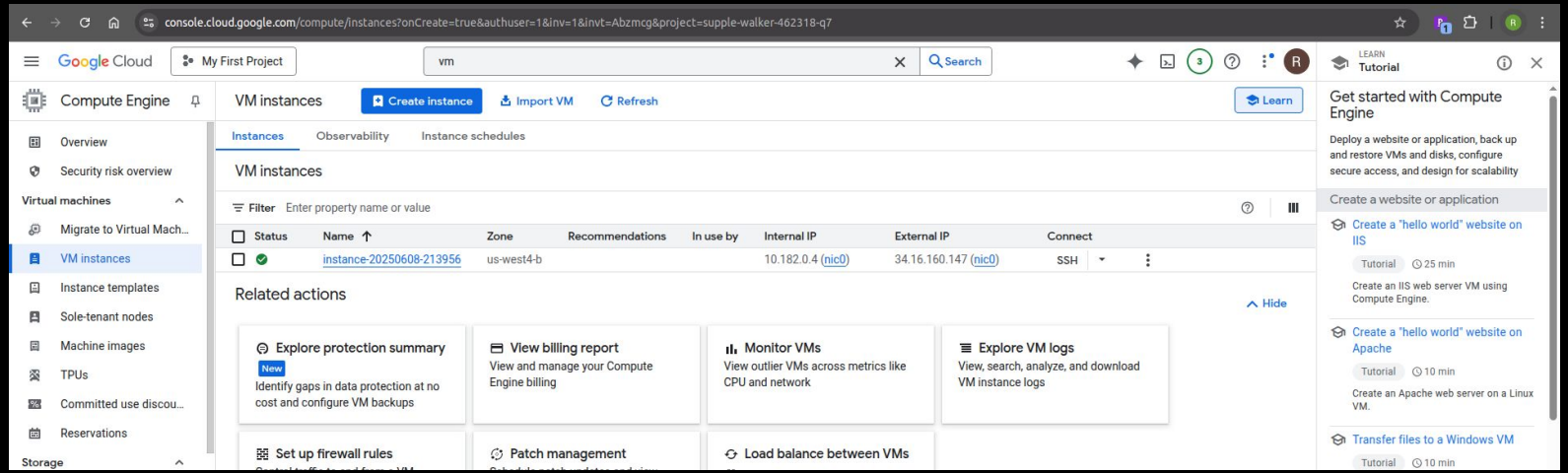
Copy the external IP given here and open VC code.
Install Remote-ssh client extension from Microsoft.
Click on the “Connect to Host” then click “Configure SSH Hosts”, default ssh path and add below code

```
Host IDL_GCP_VM

 HostName ExternalIP

 IdentityFile ~/.ssh/

 User your_name
```



Create a setup.sh file in the GCP instance and paste the code given in the notebook.
You need to update you kaggle username and key in the code.
Now you have python and torch running on your instance. If the drivers are installed correctly you will also have GPU enabled pytorch.
You are free to update the driver commands as Nvidia releases new versions of the drivers.

Good Luck!