

Configuration Manual

MSc Research Project

MSc in Artificial Intelligence

Chandrika Gollapudi

Student ID: X23319968

School of Computing
National College of Ireland

Supervisor: Mohit Garg

National College of Ireland
MSc Project Submission Sheet



School of Computing

Chandrika Gollapudi

Student Name:
.....
Student ID: X23319968
.....
Programme: MSc in Artificial Intelligence **Year:** 2025
MSc (Research) Practicum part-2
Module:
Mohit Garg
Lecturer:
Submission Due Date: 28/01/2026
.....
Project Title: Vision-Language Model Fine-Tuning for Face Mask Detection Using
Parameter-Efficient Methods
.....
211 6
Word Count: **Page Count:**

I hereby certify that the information contained in this (my submission) is information pertaining to research I conducted for this project. All information other than my own contribution will be fully referenced and listed in the relevant bibliography section at the rear of the project.

ALL internet material must be referenced in the bibliography section. Students are required to use the Referencing Standard specified in the report template. To use other author's written or electronic work is illegal (plagiarism) and may result in disciplinary action.

Signature: Chandrika Gollapudi
28/01/2026
Date:

PLEASE READ THE FOLLOWING INSTRUCTIONS AND CHECKLIST

Attach a completed copy of this sheet to each project (including multiple copies)	☐
Attach a Moodle submission receipt of the online project submission, to each project (including multiple copies).	☐
You must ensure that you retain a HARD COPY of the project, both for your own reference and in case a project is lost or mislaid. It is not sufficient to keep a copy on computer.	☐

Assignments that are submitted to the Programme Coordinator Office must be placed into the assignment box located outside the office.

Office Use Only	
Signature:	
Date:	
Penalty Applied (if applicable):	

Configuration Manual

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Student ID: X23319968

1 Connecting to the google Colab and Drive

Step 1 : Launching the colab environment (navigating to google colab website)

Step 2: Sign in into the google account

Step 3:uploading the ipynb file /notebook

1.Upload the Lora file

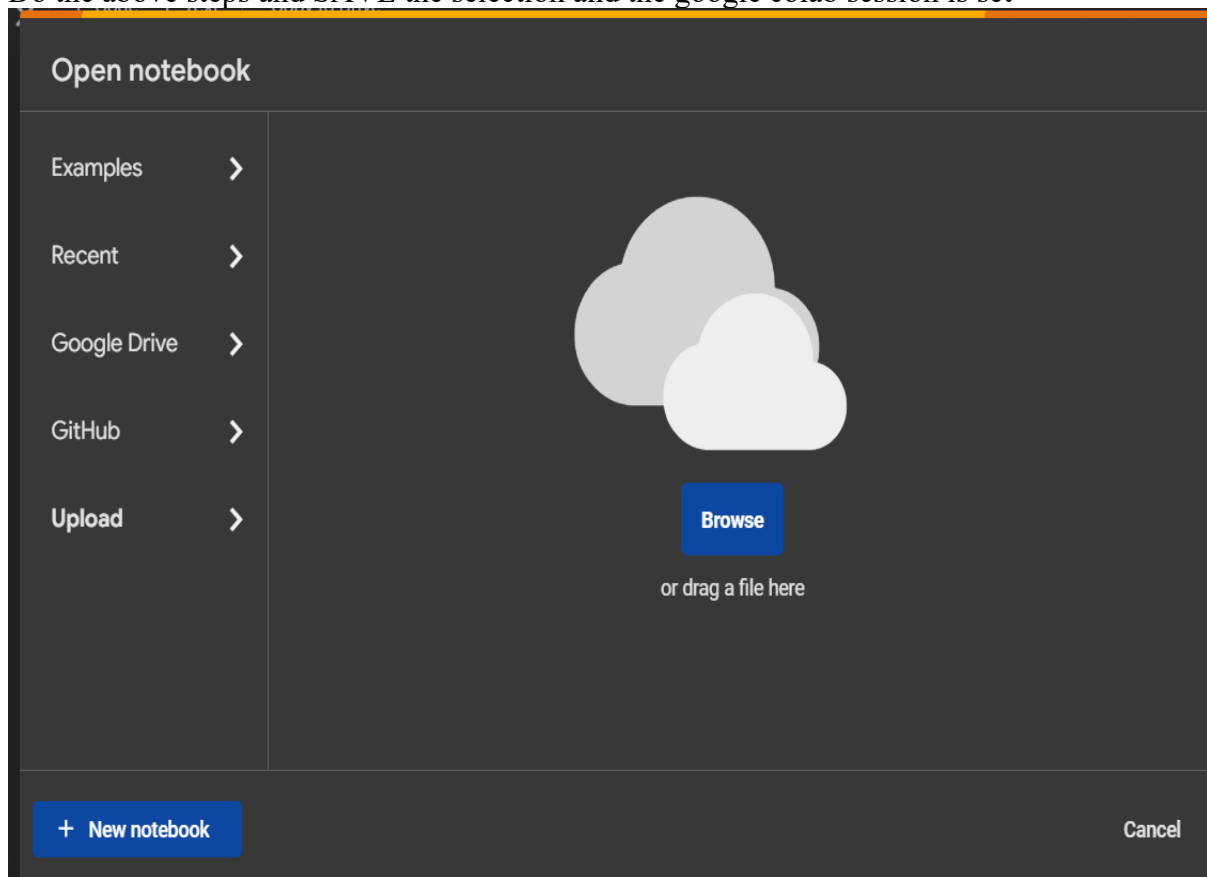
2.Repeat above steps and upload QLORA file

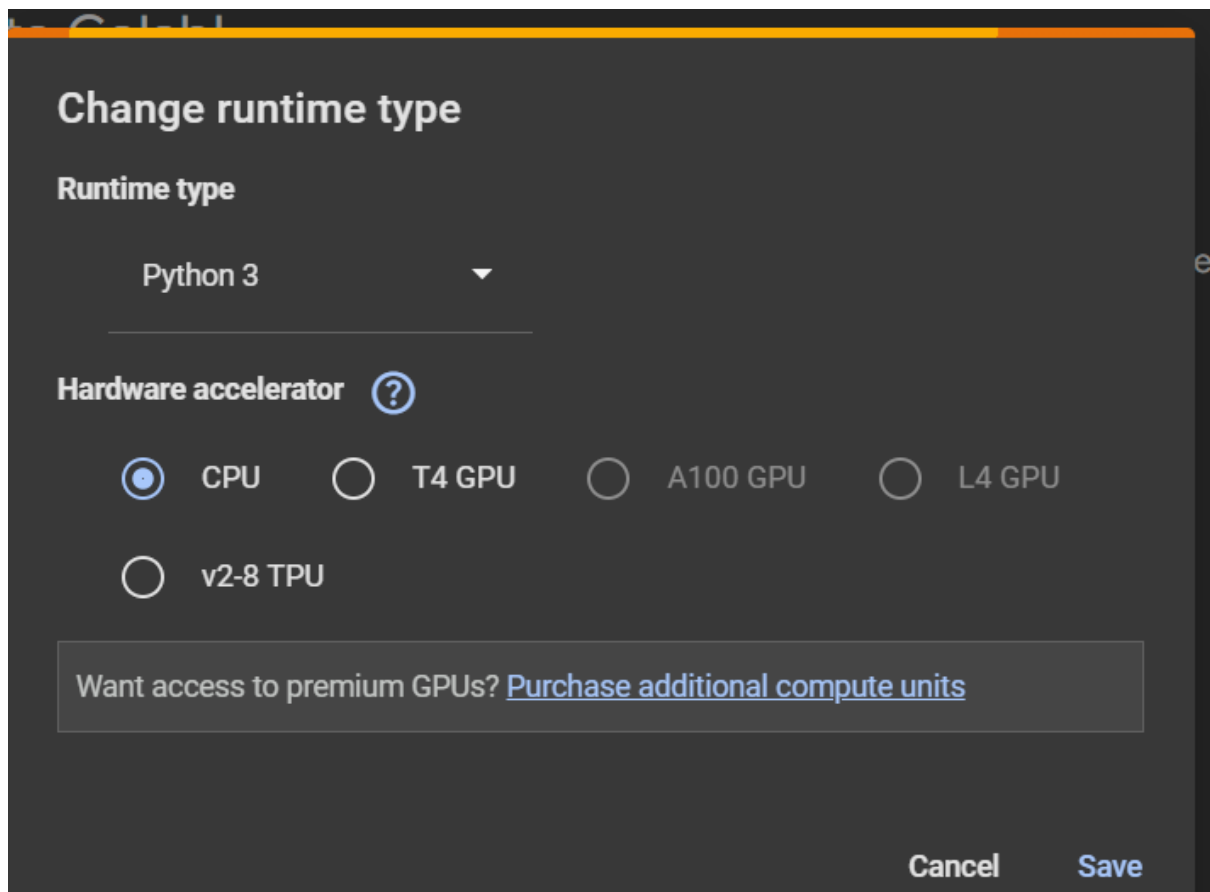
Step 4:Enabling the GPU Acceleration (in this change the runtime)

Step 5 : change the hardware accelerator to T4 GPU

Setp 6 : Repeat same things for the QLORA

Do the above steps and SAVE the selection and the google colab session is set





2 Setting up the Session

Step 1: open the google colab session

Step 2: Sign in to your Gmail

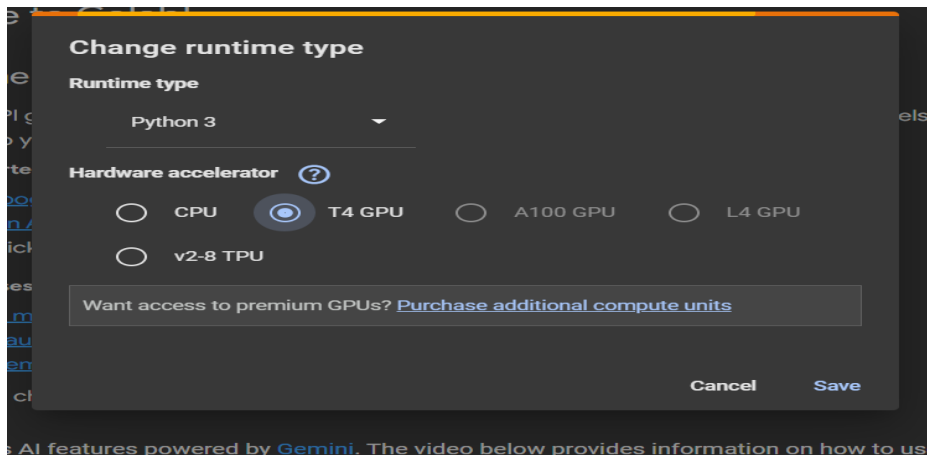
Step 3: start a new note book

Step 4 : Activate the GPU acceleration

Step 5: Create a folder on the website

Step 6 : Upload the file LORA file first

Step 7 : Repeat the same steps for the QLORA as well



3 Import of the data

Step 1: For the data replace the `api_key` with your own key for the dataset access

Step 2: The data will be download with given `api_key` into the model

```
9
10 # =====
11 # CELL 2: Download Dataset from Roboflow
12 # =====
13 from roboflow import Roboflow
14 rf = Roboflow(api_key="4ib36y3lDDYxwmbeFoRn")
15 project = rf.workspace("facemaskdetectionv1m").project("finalfacemaskdetection-kg93h")
16 version = project.version(1)
17 dataset = version.download("florence2-od")
18
19 # =====
```

4 Results (For all Models)

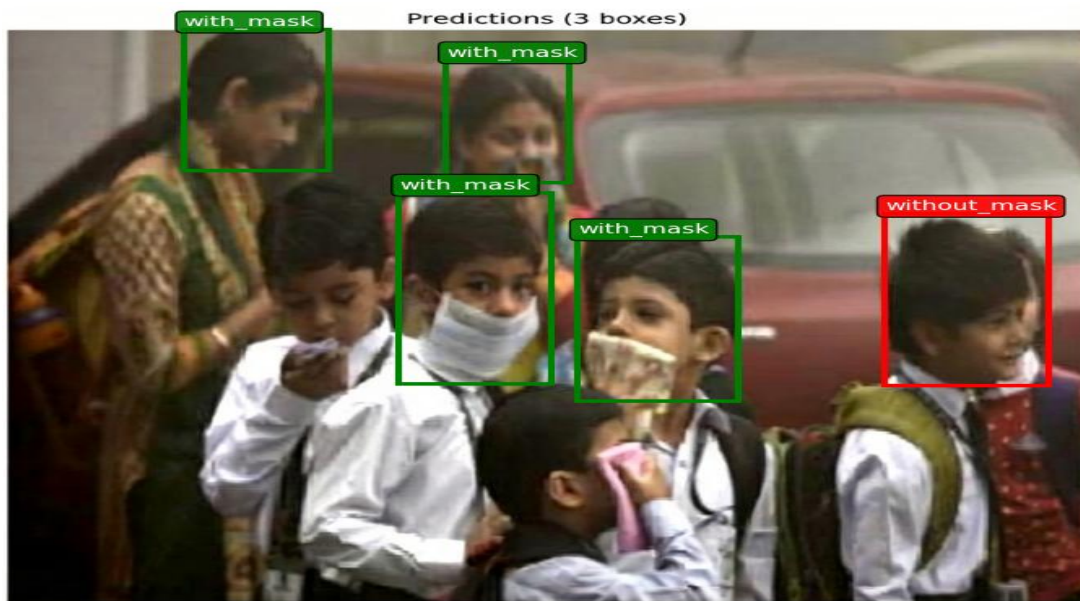


Figure 1 Results with LORA



Figure 2 Results with YOLO

Predictions (3 boxes)



Figure 3 Result with QLORA

Ground Truth (7 boxes)

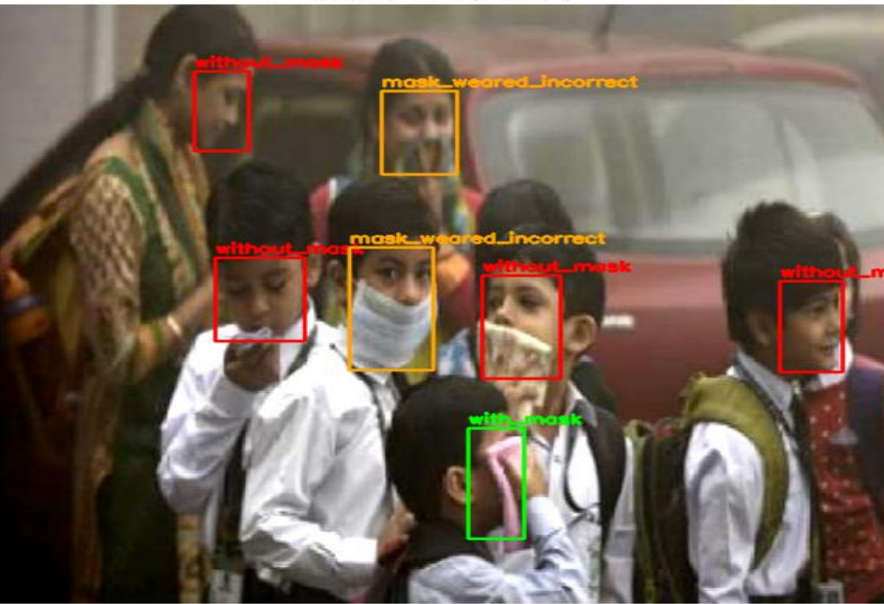


Figure 4 Ground Truth

```

***
=====
Epoch 1/25
=====
Training: 100%|██████████| 1688/1688 [09:23<00:00, 3.00it/s, loss=3.9228, lr=2.00e-06]

Epoch 1 Training Summary:
  Training Loss: 3.9140
    Time: 563.22s
  Learning Rate: 2.00e-06

Running validation...
Validating: 100%|██████████| 157/157 [00:25<00:00, 6.23it/s]
Setting 'save_embedding_layers' to 'True' as embedding layers found in 'target_modules'.
  Validation Loss: 1.7183

NEW BEST MODEL! Saving to florence2-facemask-Qlora-optimized_best

Sample Prediction:
GT: mask_worn_incorrect<loc_389><loc_188><loc_598><loc_289>...
Pred: mask_worn_incorrect<loc_8><loc_8><loc_888><loc_888><loc_8>

```

Figure 5 Epoch of Qlora

```

Cell 14: Save Model

1  import os
2  import json
3  import shutil
4  from datetime import datetime
5
6  # -----
7  # Save (QLoRA/LoRA) adapter + processor + config
8  # -----
9  run_id = datetime.now().strftime("%Y%m%d_%H%M%S")
10 save_dir = f"florence2-facemask-lora-adapter_{run_id}"
11 os.makedirs(save_dir, exist_ok=True)
12
13 # Save adapter (PEFT) and processor
14 model.save_pretrained(save_dir)
15 processor.save_pretrained(save_dir)
16
17 # Build training config (safe even if some fields don't exist)
18 config_info = {
19     "run_id": run_id,

```

Figure 6 Saving the Model

5 References

Google Colab. (n.d.). <https://colab.research.google.com/>

Chavda, A., Dsouza, J., Badgular, S., & Damani, A. (2021). Multi-Stage CNN Architecture for Face Mask Detection. In *2021 6th International Conference for Convergence in Technology (I2CT)* (pp. 1-8). IEEE. <https://doi.org/10.1109/I2CT51068.2021.9418207>