

Configuration Manual

MSc Research Project
MSc. Artificial Intelligence

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MSc Project Submission Sheet
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Student Name: Abin Binoy Abraham
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Programme: MSc. Artificial Intelligence **Year:** 2024-2025
Module: Practicum 2
Lecturer: Abdul Razzaq
Submission Due Date: 15th September 2025
Project Title: Bi-Partisan And Broader Political Spectrum Bias Detection using Transformer Based LLM Models
Word Count: 500 **Page Count:** 3

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: Abin Binoy Abraham
Date: 15th September 2025

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:	
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1 Unzipping File

Unzip the Code Artefacts File

The below table shows the notebook files according to the models and Datasets.

Fine Tuned Models	File Name  Fine_Tuned_QBias  LIAR_FINE_TUNED  UK_News_Fine_Tuned	
Baseline Models	File Name  embedding_QBias_Classification  LIAR_EMBEDDING_CLASSIFIER  UK_News_Dataset_Embedding	

The preprocessed datasets are already in the same folder.

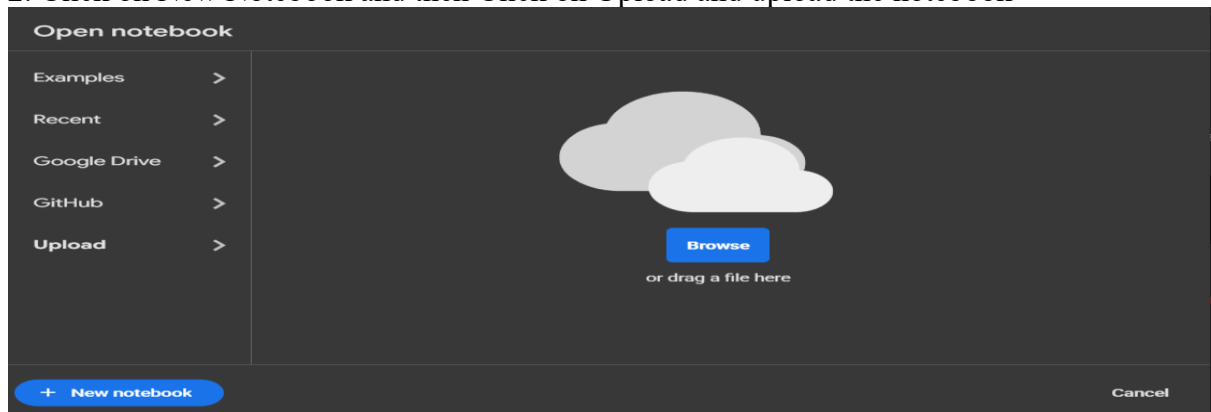
2 System Setup

To replicate the code

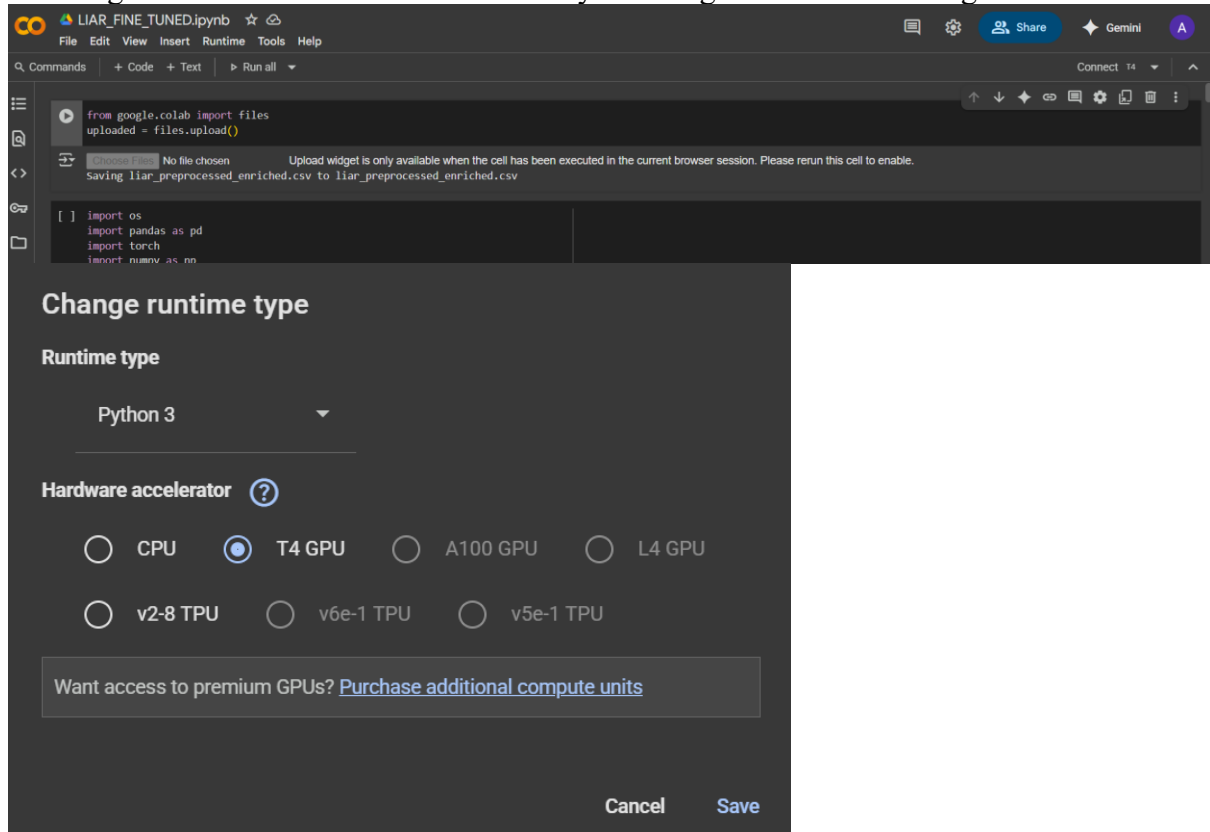
1. Open colab (<https://colab.google/>)



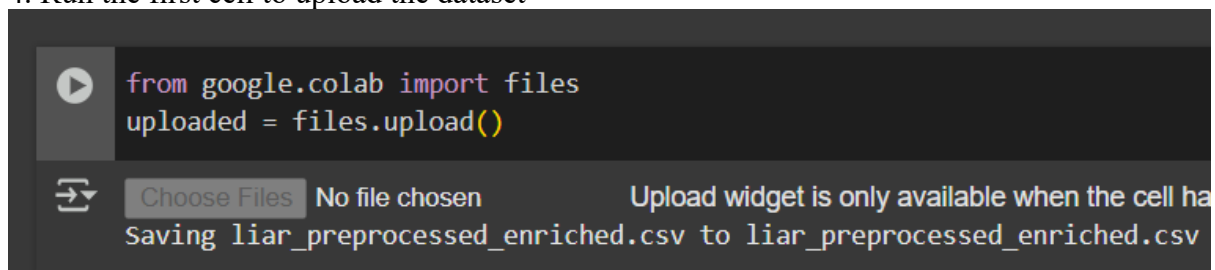
2. Click on New Notebook and then Click on Upload and upload the notebook



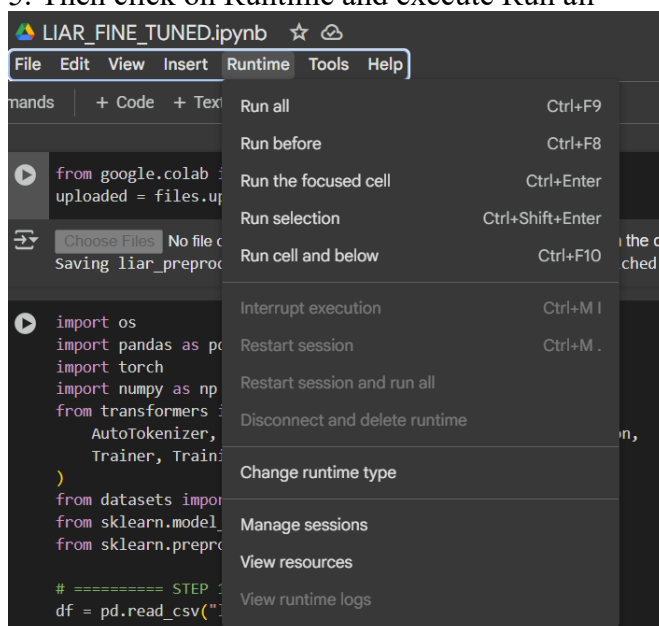
3. Change the Runtime to execute on GPU by selecting T4 GPU and saving it.



4. Run the first cell to upload the dataset



5. Then click on Runtime and execute Run all



3 Modules and Libraries required.

The below listed modules are required for executing and replicating the results in the notebook. If the packages or libraries are not installed try installing them using command;

‘pip install package_name’

If the packages are still installed and need an upgrade try

‘pip install --upgrade package_name’

Library / Package	Purpose
transformers	Fine-tuning BERT, RoBERTa, and DeBERTa models, handling tokenization, and training setup
datasets	Creating and managing dataset objects compatible with Hugging Face pipeline
google.colab	Uploading/downloading files in Google Colab environment
sklearn.metrics	Calculating evaluation metrics such as accuracy, F1-score, confusion matrix, ROC curve, and AUC
sklearn.model_selection	Splitting data into training and validation sets
sklearn.preprocessing	Encoding class labels and binarizing labels for evaluation
torch	Core PyTorch functions for model training and tensor operations
torch.nn	Building neural network layers and defining architectures
torch.utils.data	Creating and loading datasets for training/testing
matplotlib.pyplot	Plotting graphs such as ROC curves and confusion matrices
seaborn	Creating visually appealing and informative statistical plots
numpy	Numerical computations and handling arrays (e.g., embeddings)
pandas	Data loading, preprocessing, and manipulation
tqdm	Displaying progress bars during data processing and training
os	Handling file paths and environment operations

References

Wang, W.Y. (2017) “‘Liar, Liar Pants on Fire’: A New Benchmark Dataset for Fake News Detection”, in *Proceedings of the 55th Annual Meeting of the Association for*

Computational Linguistics (Volume 2: Short Papers). Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics (Volume 2: Short Papers), Vancouver, Canada: Association for Computational Linguistics, pp. 422–426. Available at: <https://doi.org/10.18653/v1/P17-2067>.

Haak, F. and Schaer, P. (2023) ‘Qbias - A Dataset on Media Bias in Search Queries and Query Suggestions’, in *Proceedings of the 15th ACM Web Science Conference 2023. WebSci '23: 15th ACM Web Science Conference 2023*, Austin TX USA: ACM, pp. 239–244. Available at: <https://doi.org/10.1145/3578503.3583628>.