APAI Lab01: DNN Definition and Training

Davide Nadalini, Lorenzo Lamberti, Alberto Dequino, Luca Bompani, Francesco Conti.
(University of Bologna)

d.nadalini@unibo.it

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

In this Hands-on session:

A first-time user of Pytorch framework will learn how to :
- define a Neural Network in PyTorch;
- train a NN;
- test a NN.

Tasks:

1. PyTorch definition of a NN model;
2. Count network's parameters and MAC operations;
3. Data loader for Fashion-MNIST
4. Code for testing a neural network on Fashion MNIST dataset;
5. Code for training a neural network on Fashion MNIST;
6. Save and load model's trained weights;

All the details about the tasks are explained in the pdf document attached.

How to deliver the assignment

- Use Virtuale platform to load your file

- update only the .ipynb file, **named as follows**:

  LAB1_APAI_yourname.ipynb

Important: the notebook must be pre-run by you. Outputs must be correct and visible when you download it.

LAB1 DEADLINE:
04/10/2024
(midnight)

Module 1 - Lab

LAB1 Assignment (due 4/10/2023)

Assignment 1 (due 25/11/2021)

Submission status

Submission status	Draft (not submitted)
Grading status	Not graded
Due date	Thursday, 25 November 2021, 4:00 PM
Time remaining	9 days 5 hours
Last modified	Tuesday, 16 November 2021, 10:56 AM
File submissions	name of the file LAB1_APAI_Lorenzo_Lamberti.ipynb 16 November 2021, 10:56 AM
Submission comments	▶ Comments (0)

edit submitted files

Edit submission   Remove submission
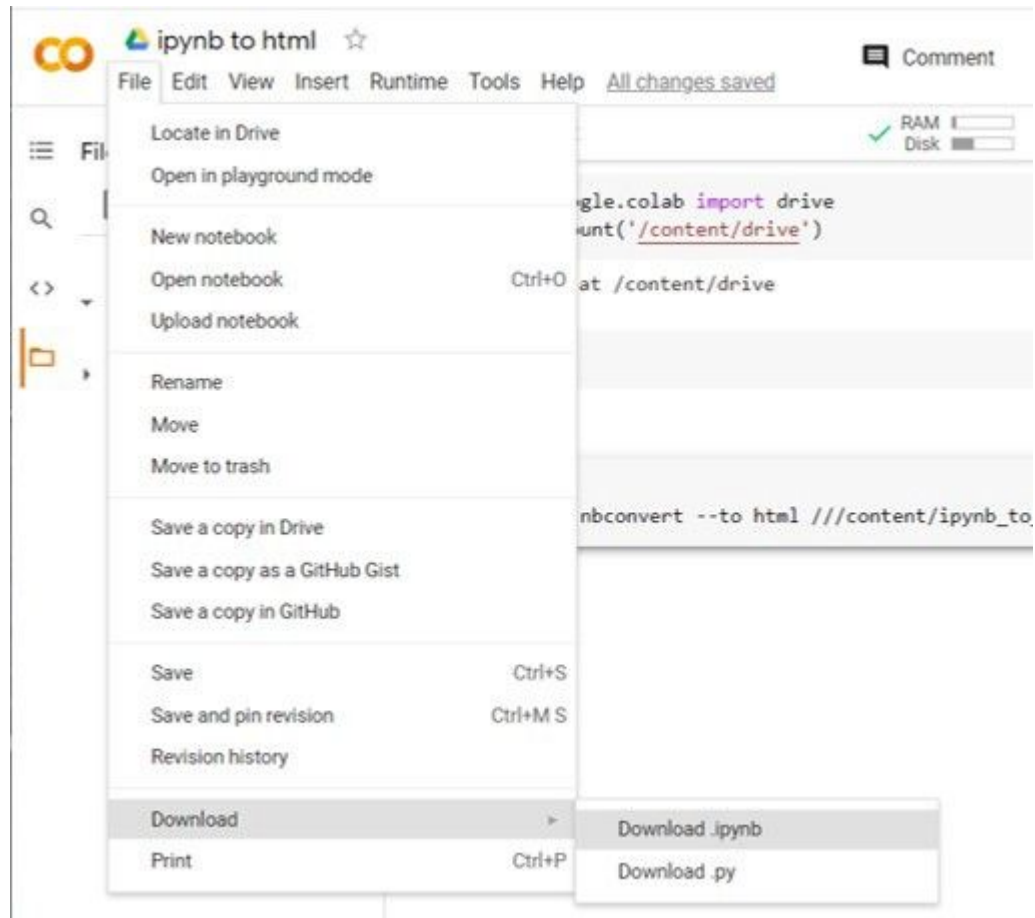
You can still make changes to your submission.

submit

Submit assignment

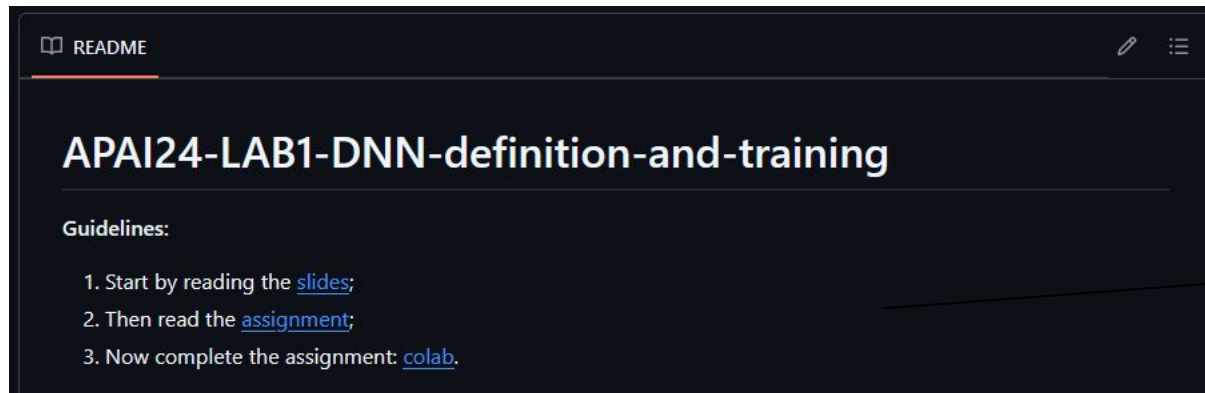# How to download the .ipynb file

Setup

1

Links to COLAB exercise:

GitHub

Solution is coming after the deadline

Open github link (assignment file)

2

📖 README

APAI24-LAB1-DNN-definition-and-training

Guidelines:

1. Start by reading the slides;
2. Then read the assignment;
3. Now complete the assignment: colab.

Open Jupyter notebook

Open the .ipynb file in COLAB to modify it !
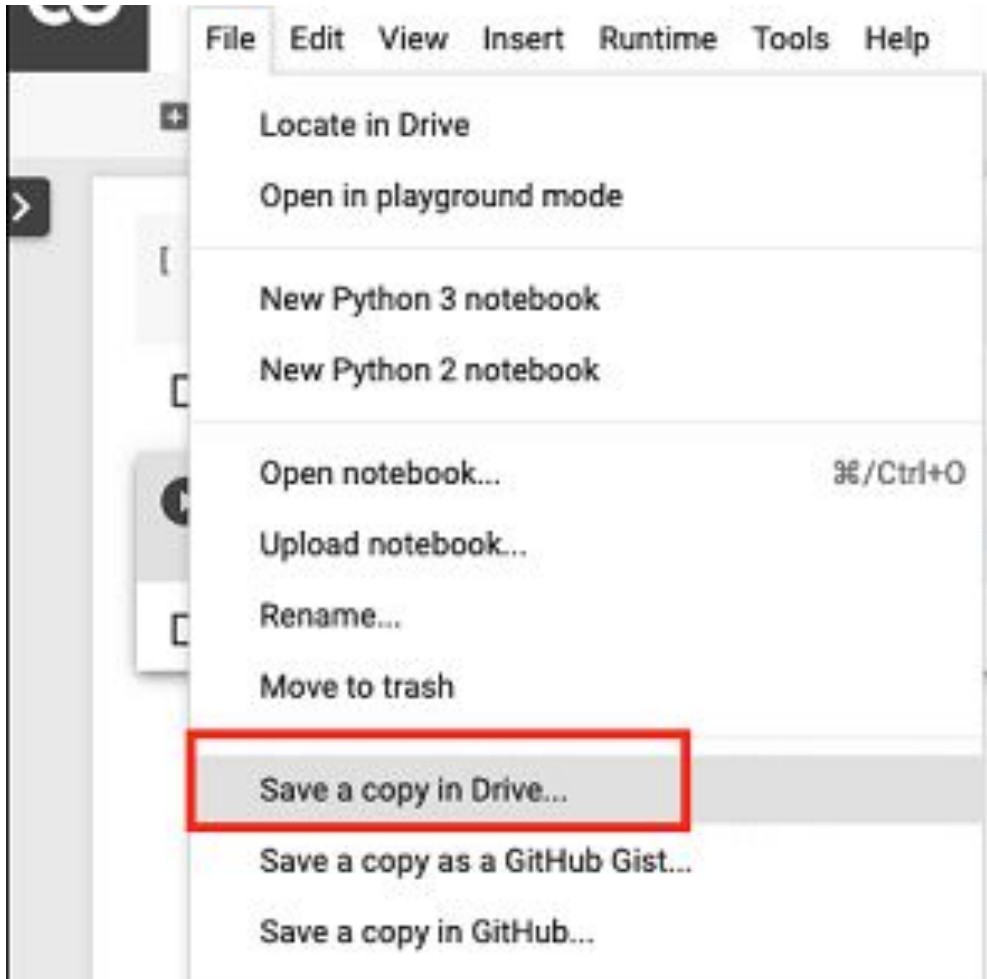
CO Open in Colab

3

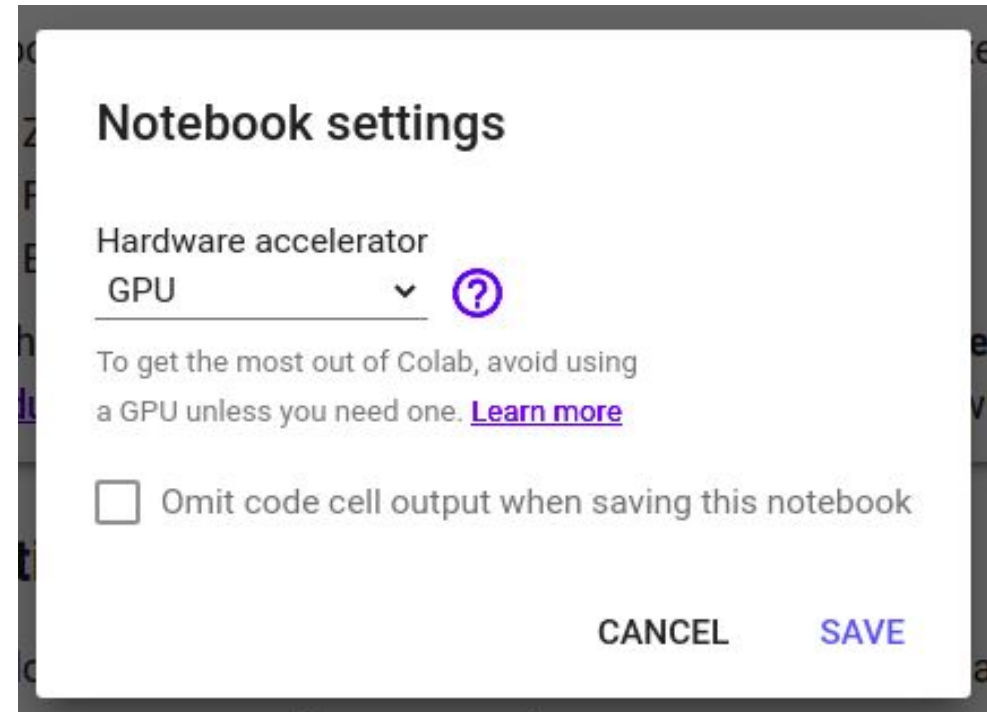# LAB1 APAI: DNN Definition & Training

Setup

IMPORTANT:

Create your own copy of the COLAB notebook!

Others:

- Activate/deactivate GPU: Runtime -> Change runtime type
- **Note:** If you use for too much time the GPU, your account will be limited to CPU for 24h.

RULES of the labs

- 4 LABS in total

- +1 point at the exam (only Module I - Prof. Garofalo part) for each lab assignment delivered and correct.

- You can get up to +4 points.

The LAB starts now !