

IMPERIAL

Machine Learning for Imaging

Coursework Introduction

Coursework: Masked Auto-Encoder

The coursework is divided into four parts:

- **Part A:** Create a dataset and a data module to handle the PneumoniaMNIST dataset.
- **Part B:** Implement MAE utility functions.
- **Part C:** Implement and train a full MAE model.
- **Part D:** Inspect the trained model.

Important:

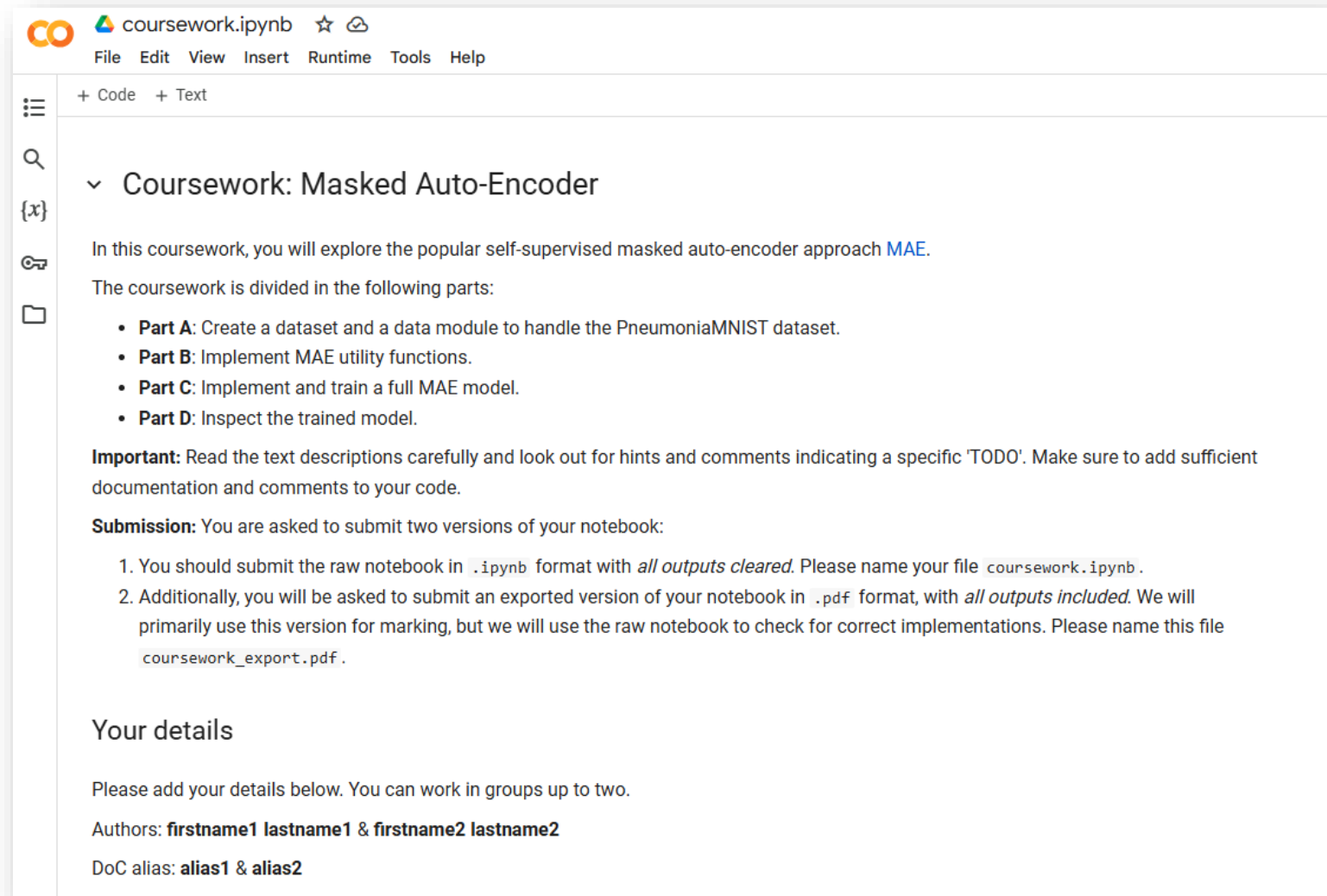
- Read the text descriptions carefully and look out for hints and comments indicating a specific 'TODO'.
- Make sure to add sufficient documentation to your code.

Submission: You are asked to submit two versions of your notebook:

1. Submit the raw notebook in .ipynb format with *all outputs cleared*.
Please name your file `coursework.ipynb`.
2. Submit an exported version of your notebook in .pdf format, with *all outputs included*.
Please name this file `coursework_export.pdf`.

Coursework notebook

Available on Scientia



The screenshot shows a Jupyter Notebook interface with the title 'coursework.ipynb'. The left sidebar contains icons for file explorer, search, and other notebook functions. The main content area is titled 'Coursework: Masked Auto-Encoder' and contains the following text:

In this coursework, you will explore the popular self-supervised masked auto-encoder approach [MAE](#).

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1. You should submit the raw notebook in `.ipynb` format with *all outputs cleared*. Please name your file `coursework.ipynb`.
2. Additionally, you will be asked to submit an exported version of your notebook in `.pdf` format, with *all outputs included*. We will primarily use this version for marking, but we will use the raw notebook to check for correct implementations. Please name this file `coursework_export.pdf`.

Your details

Please add your details below. You can work in groups up to two.

Authors: **firstname1 lastname1** & **firstname2 lastname2**

DoC alias: **alias1** & **alias2**

Coursework submission

Deadline
Thursday, 27 February, 19:00