Exam

Neural Networks

Overview

This exam requires you to analyze the provided Emotions Dataset and develop a deep learning model to predict emotional labels.

The exam must be completed individually, and all submissions are due by **20/01/2025**.

Exam Objectives

You are required to:

1. Explore and preprocess the data.
2. Build a neural network to predict the label for each text.
3. Evaluate model performance using the correct metrics.
4. Explain your methodology, your findings about the data, your results and the techniques you tried to improve your neural network performance.

Instructions

I. Dataset Description

emotions_dataset.csv

- **text:** A string field containing various textual expressions of emotion.
- **label:** A string field representing the emotional label associated with each text (e.g., fear, sadness).

II. Deliverables

You are expected to submit the following files:

1. **Code Files:** Jupyter notebooks used for data analysis and modeling. Name your file as "exam_<your_name>.ipynb".
2. **Report:** A short PDF document explaining the steps, challenges, model performance and conclusions. Name your file as "exam_<your_name>.pdf".

You don't need to include the model files (.h5, etc.) if your Jupyter Notebook has been saved with the cell outputs.

III. Evaluation Criteria

Submissions will be evaluated based on the following criteria:

1. **Data Preprocessing and Exploration (20%)**
   Quality and relevance of preprocessing steps.

2. **Building and Evaluating Models (50%)**
   Constructing neural networks, showcasing multiple techniques covered in the course, and applying methods to improve performance as much as possible while evaluating their effectiveness using appropriate metrics.

3. **Report (25%)**
   Commentary on your findings, including what you discovered in the data, the reasons behind your choices for building and training the neural networks, and an interpretation.

4. **Code Quality (5%)**
   Organization, readability, etc.

Rules of Evaluations

- **Plagiarism** is strictly prohibited and will result in a failure of the exam.
- Students who **submit identical or near-identical work**, indicating copying or collaboration, will receive a score of 0 and face disciplinary actions as per the institution's policies.
- The use of **generative AI tools** is tolerated to assist you in answering the project, but direct copy-pasting of answers is not allowed. Similar GenAI-generated answers between students will be treated as copying and subject to the same penalties.
- **Late submissions** will incur a penalty of 10% per day, up to a **maximum of 3 days**. Submissions beyond this period will not be accepted.

Good Luck ! 😀