CMP6228 - Deep Learning Project

Title TBC - Find a dataset.

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CMP6228 - Deep Neural Networks

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Word count excluding figures, references and appendices: XXXX / 3000

Contents

Abstract

The brief for this assignment mandates an abstract detailing the main findings of the report, as seen previously in CMP6202 - AI & ML.

Introduction

"This section should summarise and highlight the aim of the report, a brief description of the selected dataset and the achievements of the report, and finally describe how the report is organised."

Problem statement

"Provide a detailed description of the dataset and the deep learning problem."

It's likely that you can lift most of this from the proposal. The feedback from the proposal should be out before this report is due. Therefore, you get a slight advantage on this section. Reference literature heavily here, as your use of literature is 25% of this assignment (20% overall) on its own.

Proposed method

"Provide a full description of the proposed methodology including the pre-processing phase."

2.1 Data ingestion

Maybe not necessary to be its own section - if it is, it'll have to be brief given the heavily limited word count on this assignment.

2.2 Data pre-processing

Experimental results

"Provide a detailed description of the parameter settings, evaluation process, and obtained results."

3.1 Hyperparameter tuning

- Epochs

  - Number of times the data is sent through the network in training.

- Batch size

  - Data isn't all sent into the model at once but rather in partitioned batches where the size is dictated by this parameter.

- Learning rate

  - Considered by some to be the most important hyperparameter. Dictates the amount that the model's weights are updated by during training. If too small, the model can get stuck. If too big, it may identify a poor solution in one iteration that then has significant influence on further iterations.

3.2 Evaluation

Appears that some graphs are expected here. **The raw image files of said plots seem to be expected as part of the submission alongside the code.**

Overfitting can be addressed through regularisation. It can also be addressed by adding dropout layers to the network, which help to ensure the model learns rather than memorises data. Dropout will ignore some neurons while training.

3.3 Results

Conclusion

May also be called the "summary" according to the brief.