

Assignment 1

Report Submission Due: 14 Oct, 2025 (11:59 pm)

Submission: You only need to submit the report (don't need to submit code). Submit to NTULearn (Assignments → Assignment 1 → Report) with subject **"AI6127-Ass1-YourStudentID"** (do not submit via email).

Topic: Deep Learning models for Sentiment Classification

In this assignment, we will implement different deep learning models for sentiment classification task.

Code base for Assignment 1 [here](#)

In the code base, you are given a sample RNN model to classify the sentiment of sentences in the IMDB dataset.

Tasks:

1. Warm up: Read, understand, and reimplement the example in the code base.
2. Conduct experiments with different optimizers: SGD, Adam, Adagrad, and record the experimental results
3. Use Adam optimizer, conduct experiments with different numbers of epochs: 5, 10, 20, and 50.
4. Use Adam optimizer, 50 epochs, and randomly initialized embeddings, run the experiments with the following models:
 - One-layer feed forward neural network, hidden dimension is 500.
 - Two-layer feed forward neural network, hidden dimensions are 500 and 300.
 - Three-layer feed-forward neural network, hidden dimensions are 500, 300, and 200
 - CNN model (using three feature maps with the sizes of feature map are 1, 2, and 3)
 - LSTM model
 - Bi-LSTM model

Report:

- Summarize the results of experiments (better in tables)
- Analysis, comparison, and explanation about the results (e.g., why the results are different between optimizers? why this model is better than another model? Etc.)
- The format of report is free-style. Try to be concise and not more than 5 pages (including the cover page)
- The deadline is **14 Oct 2025, 11:59pm**.