

CMPT 728/420 Deep Learning

School of Computing Science

Simon Fraser University

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Assignment 3:

This assignment consists of two parts : conceptual exercises + a project.

You should submit a assignment3.zip package including :

- Answers to the conceptual exercises part in .PDF version,
- Your code of project part in both .PDF (or .html) and .ipynb (jupyter notebook) version.

A. Conceptual Exercises (50 points)

Exercise numbers refer to the textbook (Introduction to Deep Learning).

1. (15 points) Explain why, if you are using L1 regularization, it is a bad idea to compute the total loss (error), as opposed to computing only the gradient.
2. (15 points) Solve Exercise 4.4
3. (20 points) Vanishing/exploding gradient
 - 3.1 Explain the vanishing/exploding gradient phenomena, and why it happens in RNN models.
 - 3.2 Why LSTM prevent the vanishing gradient problem.

B. Project Part (100 points)

Please see the assignment3_proj.pdf and assignment3_proj.ipynb files.