Homework 4

Due: 2020-11-15

Introduction

In this assignment you will master basic neural network adjustment skills and try to improve deep neural networks: Hyperparameter tuning, Regularization and Optimization, Batch Normalization.

- this time you will be given two subtasks: Regularization, Batch Normalization.

• Setup

- **Start IPython**

  you should start the IPython notebook from the homework_4 directory, with the jupyter notebook command.

• Experiments

There are ### START CODE HERE / ### END CODE HERE tags denoting the start and end of code sections you should fill out. Take care to not delete or modify these tags, or your assignment may not be properly graded.

- **Q1: Regularization (50 points)**
  The IPython Notebook Regularization.ipynb will walk you through implementing the weight Initialization.
- **Q2: Batch Normalization (50 points)**
  The IPython Notebook BatchNormalization.ipynb will walk you through implementing the Gradient Checking.

- **See the code file for details.**

• Submission

You need to accomplish the following files:

1) **Improve deep neural networks**
   - ➢ Regularization.ipynb
   - ➢ BatchNormalization.ipynb

2) **Report**
   - ➢ Please convert your experiment report to PDF format
   - ➢ You just need to upload all your code and report and do not upload datasets.