### Assignment 3

**Due: 11/29**

**Instructions:**

1. **Problem 1:**
   - Part A: Use random initialization to initialize the network. You should set the initial weights to be normally distributed with a mean of 0 and a standard deviation of 0.1. The bias terms should be initialized to 0.01.
   - Part B: Use a pre-existing initialization method, such as Xavier or He initialization, to initialize the network. You can find more information about these methods in the Course Notes.

2. **Problem 2:**
   - Re-implement the backpropagation through time (BPTT) algorithm for a recurrent neural network (RNN). Your implementation should be able to handle variable-length sequences. You can find more information about BPTT in the Course Notes.

3. **Problem 3:**
   - Use the learned weights from Problem 1 to classify images from the CIFAR-10 dataset. You can use any deep learning framework of your choice. You should report your accuracy on the test set.

**Evaluation:**

No discussion forums for this assignment.

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**Course Notes**:

- BPTT: Backpropagation Through Time
- Xavier initialization
- He initialization

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**Submission:**

Submit your code, along with a short write-up of your approach and results, to the course's electronic submission system by the due date.

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**Grading:**

- 50% from Problem 1
- 30% from Problem 2
- 20% from Problem 3