

MATH 189Z Homework 4:

Automatic Differentiation Software + RNN's

In this homework, you will be learning to use pytorch to construct both a feedforward and a recurrent neural network. After learning about RNNs, you will read a paper where they are used in practice for classification. The provided Jupyter Notebook will guide you through all of the assignment and your deliverable will be a document. However, this time please also submit your Jupyter Notebook on GitHub. The requirements for each task are outlined below. When you have completed your assignment, upload your files to your GitHub repository in a folder clearly labeled Homework 4.

Read: [The VIDHOP paper](#)

You can check out the [github repository](#) for the paper if you are interested. You are welcome to try it out yourself if you want, but this is not a requirement for this homework.

Deliverables:

Feed Forward Tasks:

- Graph of loss curve for 5 different learning rates
- Graph of loss curve for 5 different numbers of hidden nodes
- Graph of loss curve with an additional layer
- (Optional) Graph of training and validation loss

RNN Task:

- The loss curve of your RNN
- A screenshot of your RNN classifying at least 5 sequences of different lengths