

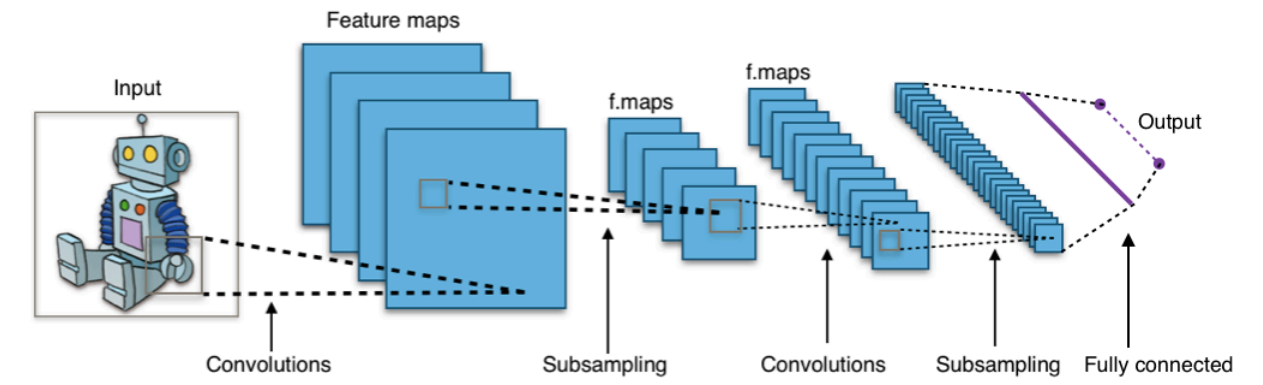
Deep Learning

Lab Assignment – 2

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Introduction:

Text Classification using CNN (Convolved Neural Networks)



Objectives:

Implementation of CNN using Tensor Flow, Numpy and pandas machine learning libraries.

Approach:

Though we have several different approaches like Artificial Neural Networks, Recurrent Neural networks. Our approach for classifying the given text is by proceeding through Convolved Neural Networks.

Method:

Convolved Neural Networks

Workflow:

1. Importing the required libraries
2. Importing Numpy, Pandas, OS, time, datetime, datahelpers, textCNN, Tensor Flow
3. Loading the parameters like Data, Model and Training
4. Pre processing the data

5. Loading the required data
6. Building the vocabulary
7. Shuffling the data randomly
8. Train data and test data split
9. Performing the Cross validation
10. Training the data
11. Defining the training procedure
12. Keeping the values of gradient descent and sparsity
13. Outputting the directories for summary and models
14. Loss and accuracy summaries
15. Train and Development summaries
16. Checkpoints
17. Generating batches and training the loop for each batch
18. Evaluating the parameters
19. Providing the epochs number of operations
20. Getting the Tensor Boards

Datasets:

Data1.txt
Data2.txt

Parameters:

- Data Loading Parameters:
 - Tf.flags.DEFINE_float,
 - Tf.flags.DEFINE_string
- Model Hyper parameters:
- Training Parameters:

Evaluation & Discussion:

1. Defining the data parameters
2. Defining the evaluation parameters
3. Miscellaneous parameters
4. Mapping the data on to our vocabulary
5. Evaluation
6. Loading metadata, getting placeholders, evaluating the tensors by generating the batches and collecting the predictions
7. Printing the accuracy
8. Outputting the values into a .csv file

Conclusion:

2017-11-16T22:36:38.900055: step 132, loss 1.16083, acc 0.546875
2017-11-16T22:36:39.953747: step 133, loss 1.50515, acc 0.453125
2017-11-16T22:36:41.080531: step 134, loss 1.45178, acc 0.53125
2017-11-16T22:36:42.213950: step 135, loss 1.45034, acc 0.484375
2017-11-16T22:36:43.507479: step 136, loss 1.07257, acc 0.5625
2017-11-16T22:36:44.638457: step 137, loss 1.08576, acc 0.640625
2017-11-16T22:36:45.758606: step 138, loss 1.3974, acc 0.59375
2017-11-16T22:36:47.159619: step 139, loss 1.33299, acc 0.546875
2017-11-16T22:36:48.431695: step 140, loss 1.2421, acc 0.609375
2017-11-16T22:36:49.803814: step 141, loss 1.28343, acc 0.640625
2017-11-16T22:36:51.072085: step 142, loss 1.21866, acc 0.5625
2017-11-16T22:36:52.636532: step 143, loss 1.40517, acc 0.53125
2017-11-16T22:36:53.708945: step 144, loss 1.71074, acc 0.578125
2017-11-16T22:36:54.783425: step 145, loss 1.23792, acc 0.6875
2017-11-16T22:36:55.960213: step 146, loss 1.5561, acc 0.515625
2017-11-16T22:36:57.099314: step 147, loss 1.0951, acc 0.609375
2017-11-16T22:36:58.241026: step 148, loss 1.69484, acc 0.484375
2017-11-16T22:36:59.710059: step 149, loss 1.07738, acc 0.6875
2017-11-16T22:37:01.194129: step 150, loss 1.32563, acc 0.53125
2017-11-16T22:37:02.461059: step 151, loss 1.18229, acc 0.578125
2017-11-16T22:37:03.611901: step 152, loss 1.34421, acc 0.5625
2017-11-16T22:37:04.781476: step 153, loss 1.19889, acc 0.578125
2017-11-16T22:37:05.975638: step 154, loss 1.24415, acc 0.5625
2017-11-16T22:37:07.223734: step 155, loss 1.46927, acc 0.5