Spring 2022: CSEE5590/490 – Special Topics

Python and Deep Learning Module-2 - ICP-12

Lesson Overview:
In this lesson, we are going to discuss types of ANNs and Recurrent Neural Network.

Use Case Description:
1. Sentiment Analysis on the Twitter dataset

Programming elements:
1. Basics of LSTM
2. Types of RNN
3. Use case: Sentiment Analysis on the Twitter data set

Source Code:
Provided in your assignment folder and assignment repo.

Assignment:

1. Load the provided CSV file "Sentiment.csv" and process this file as needed to handle text data.
2. Build the Keras model that you have in the PPT use case.
3. Train and save the model and use the saved model to predict on new text data (ex, "**A lot of good things are happening. We are respected again throughout the world, and that's a great thing**.@realDonaldTrump")
4. Apply the code on spam data set available in the source code (text classification on the **spam.csv** data set)

Transfer Learning:

1. Apply any of the transfer learning techniques we discussed in the PPT.
2. You can either choose between applying transfer learning to your project dataset or to the dataset you have for ICP-10.
3. In ICP-10 we built a model on Cifar-10 try to apply transfer learning from that model or any of Keras application models.
4. If you don't have a dataset, try to build one or find a dataset like (cat/dogs) for example.

** Follow the IPC rubric guidelines.

Submission Guidelines:

1. Once finished document your code and make sure all parts of the assignments are completed.
2. Push your code to your GitHub repo and update the ReadMe file, add your info, and partner info.
3. Submit the assignment on Canvas.
4. Present your work to TA during class time to prove the execution and complete submission.

After class submission:

1. Once finished document your code and make sure all parts of the assignments are completed.
2. Push your code to your GitHub repo and update the ReadMe file, add your info, and partner info.
3. Submit the assignment on Canvas before the deadline.
4. Record a short video (3~7) minute, proof of execution and complete assignment.
5. Add video link to ReadMe file.

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