University of Dallas in Texas

BUAN6342

NLP

Final Project – Due on the Project Presentation Day

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Group # \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Introduction:**

Natural Language Processing (NLP) has been extensively utilized in resolving a variety of real-world problems related to text data. These include sentiment analysis, text classification, topic categorization, text conversion, and chatbot applications, amongst others. In this project, you will be applying the concepts and techniques of NLP to address one of these real-world problems. Your task involves illustrating and presenting all aspects of the project as outlined below.

**Requirements:**

To commence, you have the option to either select a commonly used industry use case or choose from the list of suggested topics provided below. Your project plan should include the following steps:

1. Use Case: Provide a brief 4-5 sentence description of the use case.
2. Methodology:
3. Corpus Used: Specify the type of dataset utilized in a few words.
4. Data Preparation/Data Cleansing: Describe the data pre-processing functions you intend to use for stop-word removal, etc.
5. Python Code: Outline the significant sections of your code in brief, such as preprocessing steps, creating data sets, creating data models, etc.
6. Testing the Model
7. Python Code: Submit your Python code, preferably in Jupyter notebook format, with any necessary visualizations.
8. Conclusion or Summary: Present a brief summary or conclusion in a single paragraph.
9. References

**Deliverables:**

The project deliverables consist of a word document or PowerPoint presentation, the Python code (ipynb), and the corpus file used.

Suggested Topics and Project Examples:

1. Sentiment Analysis

<https://towardsdatascience.com/almost-real-time-twitter-sentiment-analysis-with-tweep-vader-f88ed5b93b1c>

1. Deep Learning for NLP (Iris – Keras) Face Recognition Neural Network with Keras <https://www.guru99.com/keras-tutorial.html>
2. Text Generation with LSTM/RNN in Python with Keras <https://machinelearningmastery.com/text-generation-lstm-recurrent-neural-networks-python-keras/>

<https://medium.com/@david.campion/text-generation-using-bidirectional-lstm-and-doc2vec-models-1-3-8979eb65cb3a> <https://keras.io/examples/lstm_text_generation/>

1. Chatbot

<https://www.gamedev.net/forums/topic/663348-chatbot-in-18-lines-of-code-python-help/> <https://www.kdnuggets.com/2019/05/build-chatbot-python-nltk.html>

Data set resources:

http://archive.ics.uci.edu/ml/index.php