Machine Translation

Problem Statement

Design a Machine Translation model that can be used to translate sentences from German language to English language or vice-versa

Scope

The texts which need to be converted will be stored in a txt file. A Python module will be developed which can be imported by the user and simply executed in 2-3 lines. The module will have two functionalities, one for converting German to English and the other one for converting English to German. The location of the txt file having the statements needs to be passed a parameter inside these functions. On executing the function it will return the converted text as output.

For ex.:

```
import machine_translator as mt
conv_text1 = mt.translate_eng_to_de("../Data/german.txt")
conv_text2 = mt.translate_de_to_eng("../Data/english.txt")
print(conv_text1, conv_text2)
```

Data

From each of the files, 80% of the data would be used for training and the rest 20% of the statements would be used for validation. For German to English we will consider all the data sources in German, map them to the respective English statements and train our model and vice-versa

Plan

i) Milestone 1 - Create a basic machine translation model to get an idea how machine translation works
ii) Milestone 2 - Read through some blogs/articles/research papers to understand the possible scope of improvement to current model
iii) Milestone 3 - Understand and implement transfer learning and evaluate the results
iv) Milestone 4 - Consolidate all the experiments and make a detailed report of the step by step improvements. Compare all the results and conclude with our research findings along with citations