**ESSAY STRUCTURE**

**Essay assignment:**Investigate how Transformers are defined and how to operate. Study, assess, and criticize NLP models that rely on Transformers (such as BERT and GPT-3), and explore applications of Transformer to computer vision. Discuss what other applications of such networks might be on the horizon.

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| **Section header** | *Transformers* | |
| Introduction (what is the algorithm trying to solve? |  |  |
| Motivation (why is it an important problem?) |  |  |
| *Discussion of the algorithm* | *BERT* | *GPT3* |
| Explain Steps of the algorithm |  |  |
| Elaborate on how the algorithm is derived from theoretical principles |  |  |
| *Results* | *BERT* | *GPT3* |
| Define the problem to be solved |  |  |
| Algorithm performance (tables and figures with metrics). Eg:   * Accuracy, precision, recall, F1-scores * MSE * computational complexity * memory requirements |  |  |
| *Discussion* | *Transformers* | |
| Compare BERT and GPT3 results |  |  |
| Pros/cons of the algorithm   * technical * quality control * ethics and biases * privacy |  |  |
| Applications to Computer Vision |  |  |
| Other applications of Transformers that are on the horizon |  |  |
| **Conclusion** | | |