**NLP Assignment-3**

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**BDS-8B**

**QUESTION NO.1 – REPORT (*Green* means best performing Layer-Dropout combination)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **SimpleRNN** | **LSTM** | **GRU** | **BiLSTM** |
| Layers 2, Dropout 0.3 | Accuracy: 0.53061224489  Precision: 0.5  F1-score: 0.397905759162  Recall: 0.330434782608 | Accuracy: 0.65714285714  Precision: 0.6371681415  F1-score: 0.631578947  Recall: 0.6260869565 | Accuracy: 0.62857142857  Precision: 0.6  F1-score: 0.61276595744  Recall: 0.62608695652 | Accuracy: 0.6408163265  Precision: 0.58282208588  F1-score: 0.6834532372  Recall: 0.82608695691 |
| Layers 2, Dropout 0.7 | Accuracy: 0.51020408163  Precision: 0.47252747252  F1-score: 0.41747572815  Recall: 0.37391304347 | Accuracy: 0.66122448979  Precision: 0.6568627450  F1-score: 0.6175115207  Recall: 0.5826086956 | Accuracy: 0.62857142857  Precision: 0.625  F1-score: 0.56872037914  Recall: 0.52173913043 | Accuracy: 0.6571428571  Precision: 0.7183098591  F1-score: 0.5483870967  Recall: 0.4434782608 |
| Layers 3, Dropout 0.3 | Accuracy: 0.50612244897  Precision: 0.47272727272  F1-score: 0.46222222222  Recall: 0.452173913043 | Accuracy: 0.5795918367  Precision: 0.53  F1-score: 0.673015873  Recall: 0.921739130 | Accuracy: 0.62040816326  Precision: 0.59166666666  F1-score: 0.60425531914  Recall: 0.61739130434 | Accuracy: 0.6367346938  Precision: 0.6083333333  F1-score: 0.6212765957  Recall: 0.6347826086 |
| Layers 3, Dropout 0.7 | Accuracy: 0.48571428571  Precision: 0.458646616541  F1-score: 0.491935483870  Recall: 0.53043478260 | Accuracy: 0.63265306122  Precision: 0.63440860215  F1-score: 0.56730769230  Recall: 0.51304347826 | Accuracy: 0.61224489795  Precision: 0.578125  F1-score: 0.60905349794  Recall: 0.64347826086 | Accuracy: 0.6285714285  Precision: 0.5909090909  F1-score: 0.6315789473  Recall: 0.6782608695 |

**QUESTION NO.2 – REPORT (*Green* means best performing embedding)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **LSTM** | **Word2Vec** | **GloVe** | **Fasttext** | **Elmo** |
| Accuracy | 0.6 | 0.624489 | 0.48571 | 0.64897 | Fails to install |
| Precision | 0.5555556 | 0.576158 | 0.47577 | 0.60583 |  |
| Recall | 0.7391304 | 0.756521 | 0.93913 | 0.721739 |  |
| F1-Score | 0.63432835 | 0.654135 | 0.631578 | 0.658730 |  |