**Students Data.**

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**Result With Sequences Models.**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Model | Encoding | Layers | Units | | LR | | Train | | Valid |
| BEST ONE  (LSTM with regularization)  Enhancement Preprocessing | Word Embedding | Embedding,  LSTM, Dropout(0.3),  Output(Dense) | | Dim = 300,  32 units,  3 classes | | 0.001 | | 80% | 83.65%  But Test Got 84.78% |
| LSTM with regularization | Word Embedding | Embedding,  LSTM, Dropout(0.5),  Output(Dense) | Dim = 300,  32 units,  3 classes | | 0.001 | | 87% | | 84.36% |
| LSTM | Word Embedding | Embedding,  LSTM, Dropout(0.5),  Dense,  Output(Dense) | Dim = 50,  128,  16,  3 classes | | 0.01 | | 90% | | 83% |
| LSTM | Word Embedding | Embedding,  LSTM, Dropout(0.5),  Output(Dense) | | Dim = 300,  50,  3 classes | | 0.001 | | 92% | 83% |
| RNN | Word Embedding | Embedding,  RNN, Dropout(0.5),  Output(Dense) | | Dim = 300,  64,  3 classes | | 0.001 | | 95% | 83.8% |
| BI-LSTM with regularization | Word Embedding | Embedding,  BI-LSTM, Dropout(0.5),  Output(Dense) | Dim = 300,  32 units,  3 classes | | 0.001 | | 87% | | 83.75% |
| RNN | TF-IDF | RNN,  Dropout(0.2),  Output(Dense) | Features = 5000,  50,  3 Classes | | 0.001 | | 80% | | 83% |
| RNN with regularization | TF-IDF | RNN,  Dropout(0.6),  Two Dense,  Output(Dense) | | Features = 10000,  64, 32,16,  3 Classes | | 0.001 | | 89% | 84.2% |
| LSTM | TF-IDF | LSTM,  Dropout(0.4),  Dense,  Output(Dense) | Features = 10000,  64, 32,  3 Classes | | 0.01 | | 93% | | 83% |
| LSTM | TF-IDF | LSTM,  Dropout(0.5),  Two Dense,  Output(Dense) | Features = 10000,  128, 64, 32,  3 Classes | | 0.01 | | 97% | | 82% |

**Result With Transformers Models.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Heads | Dropout rate | Feed forward units | Embedded dim | Train | Valid |
| BEST : 6 | **Encoder 0.5, FF 0.7** | **32** | **64** | **71.69%** | **81.6%** |
| 10 | **0.5** | **16** | **32** | **65.92%** | **75.8%** |