NEXT WORD PREDICTION

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Overview

Introduction

- Next Word Prediction model uses pre-trained language models such as LSTM (Long Short-Term Memory) and BERT (Bidirectional Encoder Representations from Transformers) and GRU (Gated Recurrent Unit) to generate the next possible word.
- This helps user to frame sentences by following word to word prediction means.

Literature Survey

S. No	Title of the paper	Authors and Journal Details	Description
1	NEXT WORD PREDICTION USING LSTM	Afika Rianti, Suprih Widodo, Atikah Dhani Ayuningtyas, Fadlan Bima Hermawan - 2022	The papers describes the application of LSTM for Next Word Prediction with model run with 200 epochs and obtained 75 percent accuracy and 55 percent loss‘
2	Next Word Prediction Using Deep Learning	K. Chakradhar,K. Sai Kiran, ,K.Shanmukh, K. Sharath Kumar ,K. Dinesh Sagar - 2022	The papers talks about N-Gram modelling, LSTM, GRU, BLSTM and BLSTM-GRU algorithms for NWP with the average accuracy of 79 percent.

S. No	Title of the paper	Authors and Journal Details	Description
3.	Advancing natural language processing (NLP)applications of morphologically rich languageswith bidirectional encoder representations fromtransformers (BERT)	Akın Özçift, Kamil Akarsu, Fatma Yumuk, Cevhernur Söylemez - 2021	The paper talks about experimenting the use of MLM task of BERT model on turkish language domain to decrease the training time period while keeping prediction performances high.
4	A Comparison of LSTM and BERT for Small Corpus	Aysu Ezen-Can - 2020	This paper discusses the comparison of the performance of simple bidirectional LSTM model with a pre-trained BERT model for a small dataset.

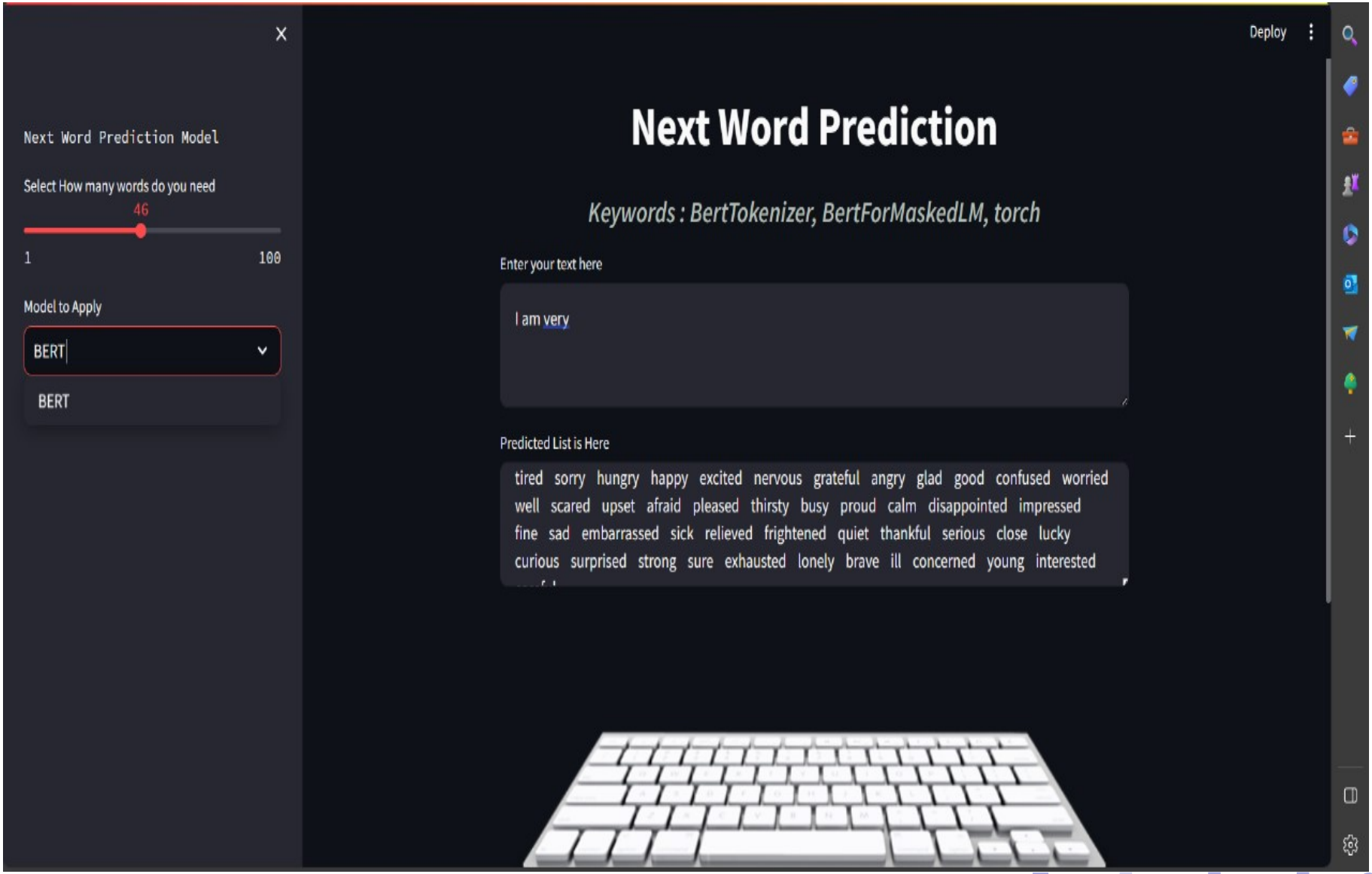
Problem Statement

- Design and implement a model that can effectively predict the next relevant word for a given input sentence using SWAG (Situations With Adversarial Generations) dataset

Proposed Method

- The main aim of our project is to predict the most probable word or sequence of words that follows a given input context using BERT, LSTM and GRU models by comparing their accuracy and loss using SWAG dataset.

Result


Next Word Prediction Model
Select How many words do you need
46
1
100
Model to Apply
BERT
BERT
Deploy
Next Word Prediction
Keywords : BertTokenizer, BertForMaskedLM, torch
Enter your text here
I am very
Predicted List is Here
tired sorry hungry happy excited nervous grateful angry glad good confused worried
well scared upset afraid pleased thirsty busy proud calm disappointed impressed
fine sad embarrassed sick relieved frightened quiet thankful serious close lucky
curious surprised strong sure exhausted lonely brave ill concerned young interested

Conclusion & Future Scope

- Helps individuals with motor or cognitive disabilities, enabling them to communicate more easily.
- Enhanced Communication: Next word prediction assists users in quickly composing messages, emails, and other forms of communication by suggesting words that align with their intended content.
- Language Learning: Language learners can benefit from contextual suggestions that expose them to new vocabulary and proper sentence structures.
- With availability of additional GPU we could have used total dataset to get more accurate results

Thank you