CAPSTONE PROJECT

Text Generation Using RNN

Final Project

Presented By

SANDHIYA K P B

711721244045

III Btech CSBS

KGiSL Institute of Technology

PROJECT TITLE

Text Generation using Recurrent Neural Networks

AGENDA

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5. The Wow Factor in Your Solution
6. Modelling
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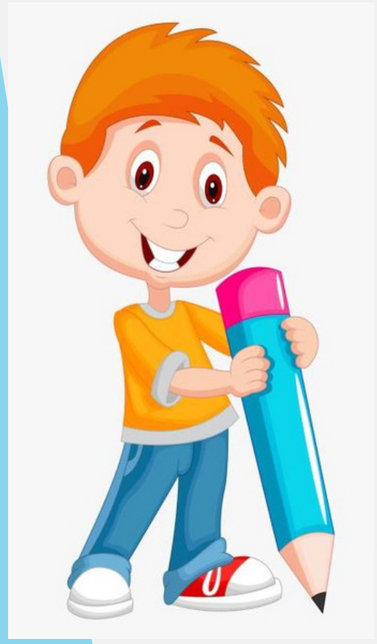


PROBLEM STATEMENT

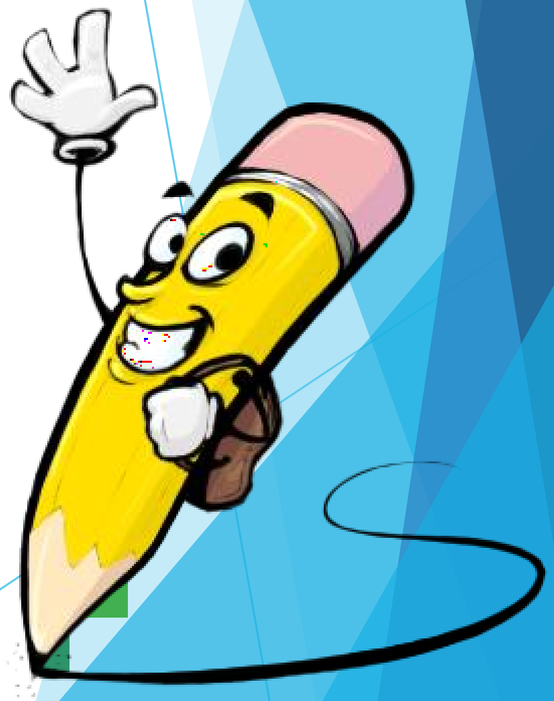
- Create a text generation model based on RNNs to generate text that is both logical and pertinent to the situation.
- Take up the task of producing text that is human-like in both fluency and semantic coherence.
- To teach the model the complex patterns and structures seen in natural language, use a sizable corpus of text data.

PROJECT OVERVIEW

- Create a text creation system that addresses shortcomings in current approaches by leveraging Recurrent Neural Networks (RNNs) to solve difficulties in generating coherent and contextually appropriate content.

- To handle sequential data and extract complex language patterns, use RNN architecture. Utilize preprocessing techniques to optimize learning by training the model on a variety of text corpora.

- Develop a sophisticated text generation model that can produce text that is similar to that of a human. This will advance the field of natural language processing and have potential uses in content creation, creative writing support, and personalized chatbots.

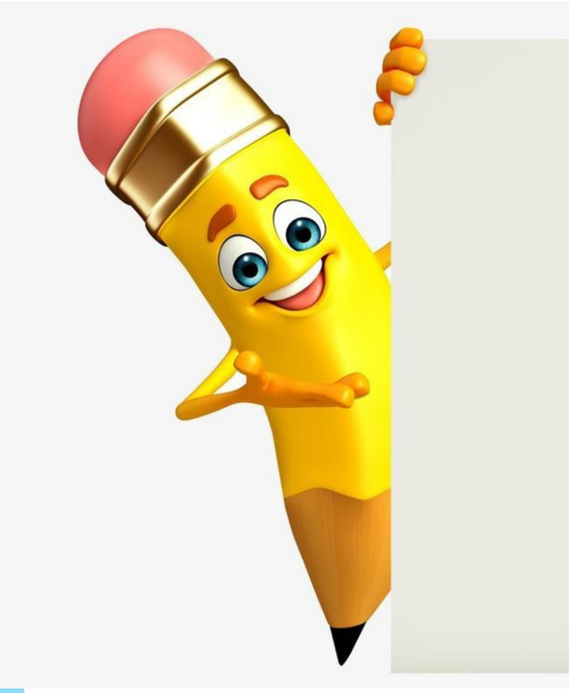


WHO ARE THE END USERS?

- Content creators, chatbot developers, creative writers, language learners, and academics are the end users of the text creation system that uses recurrent neural networks (RNNs).

- They use it to enhance the conversational capabilities of their apps and to produce content more effectively.

YOUR SOLUTION AND ITS VALUE PROPOSITION



- Our Recurrent Neural Network (RNN)-powered text production technology simplifies content development procedures and enables users to produce excellent writing fast and easily.
- The system generates text that is both cohesive and contextually relevant, guaranteeing that the content satisfies professional writing standards and successfully conveys the intended message.
- Our system offers essential assistance in multiple domains of natural language processing and caters to a wide range of user needs, including content generation, chatbot building, and creative writing aid.

THE WOW IN YOUR SOLUTION

- Our approach generates writing with a fluency and coherence that rivals that of human-generated content.
- Users may quickly produce text of excellent quality, which expedites their content development procedures and saves them important time.
- Our solution meets a broad spectrum of user needs, from content production to chatbot building, with applications spanning sectors and domains.
- Our system, which offers users unmatched results, demonstrates the latest developments in natural language processing and is powered by cutting-edge Recurrent Neural Networks (RNNs).

MODELLING

- Recurrent neural networks (RNNs) are used in RNN architecture to capture sequential dependencies in text data, allowing for the creation of coherent text.
- To improve the model's comprehension of language, dense word embeddings are used to reflect the semantic links between words.
- Using a variety of text corpora, the model is trained to anticipate the following word in a series. Iterative learning is used to improve the model's text production skills.
- Regularization techniques and hyperparameter adjustments are used to maximize model performance and guarantee reliable, high-quality text creation.

RESULTS

```
Epoch 1/20
31/31 [==============================] - 119s 4s/step - loss: 7.5491
Epoch 2/20
31/31 [==============================] - 109s 4s/step - loss: 6.8368
Epoch 3/20
31/31 [==============================] - 113s 4s/step - loss: 6.8139
Epoch 4/20
31/31 [==============================] - 116s 4s/step - loss: 6.8114
Epoch 5/20
31/31 [==============================] - 108s 3s/step - loss: 6.8082
Epoch 6/20
31/31 [==============================] - 109s 3s/step - loss: 6.8025
Epoch 7/20
31/31 [==============================] - 107s 3s/step - loss: 6.7876
Epoch 8/20
31/31 [==============================] - 107s 3s/step - loss: 6.7686
Epoch 9/20
31/31 [==============================] - 111s 4s/step - loss: 6.7472
Epoch 10/20
31/31 [==============================] - 110s 4s/step - loss: 6.7218
Epoch 11/20
31/31 [==============================] - 112s 4s/step - loss: 6.6976
Epoch 12/20
31/31 [==============================] - 110s 4s/step - loss: 6.6708
Epoch 13/20
31/31 [==============================] - 119s 4s/step - loss: 6.6414
Epoch 14/20
31/31 [==============================] - 110s 4s/step - loss: 6.6078
Epoch 15/20
31/31 [==============================] - 109s 3s/step - loss: 6.5824
Epoch 16/20
31/31 [==============================] - 113s 4s/step - loss: 6.5499
Epoch 17/20
31/31 [==============================] - 109s 3s/step - loss: 6.5215
Epoch 18/20
31/31 [==============================] - 111s 4s/step - loss: 6.4985
Epoch 19/20
31/31 [==============================] - 111s 4s/step - loss: 6.4747
Epoch 20/20
31/31 [==============================] - 113s 4s/step - loss: 6.4508
romeourging plantagenet poor mast and fellow beat to to supper him therefore have made vengeance and 's the truth of it shall 'tis like too blest and had my won first round might himself gloucester be change rather here go at mother haste makes
```

```
Enter starting string (or type 'quit' to exit): beautiful
Generated text:
beautifulprocess guile resolute is in i are up romeo speak done juliet and i years dispute bear it it whatsoe'er all let stand and she your more for reverend if the thy thou art what
Enter starting string (or type 'quit' to exit): quit
Exiting...
```

https://shorturl.at/lwAGL