



CAPSTONE PROJECT

Text Generation Using RNN

Final Project

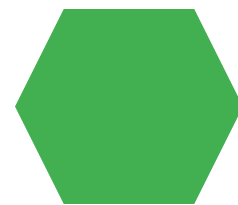
Presented By

Mani D

711721244049

III Btech CSBS

KGiSL Institute of Technology



PROJECT TITLE

Time Series Forecasting of Maximum Temperature using Recurrent Neural Networks: A Case Study of Seattle Weather Data

AGENDA

1. Problem Statement
2. Project Overview
3. End Users
4. Solution and Value Proposition
5. The Wow Factor in Your Solution
6. Modelling
7. Results



PROBLEM STATEMENT



- Build an RNN-based text generation model to produce text that makes sense and is relevant to the given context.
- Take on the challenge of writing prose that has the same fluency and semantic coherence as human language.
- Use a large corpus of text data to teach the model the intricate patterns and structures seen in natural language.



PROJECT OVERVIEW

- Develop a text generation system that leverages Recurrent Neural Networks (RNNs) to overcome challenges in producing coherent and contextually relevant information, hence addressing inadequacies in existing methods.
- RNN architecture can be used to manage sequential data and extract intricate language patterns. Train the model on a range of text corpora using preprocessing techniques to maximize learning.
- Create an advanced text generation model that can generate text that resembles human writing. Natural language processing will progress as a result, and personalized chatbots, content production, and writing assistance could all benefit from this.



WHO ARE THE END USERS?



- Our temperature forecasting model caters to diverse industries such as agriculture, events, energy, emergency response, and urban planning.
- Stakeholders include farmers, event organizers, energy providers, emergency responders, and urban planners, who rely on accurate temperature predictions for decision-making and risk management.

YOUR SOLUTION AND ITS VALUE PROPOSITION



- With the help of our Recurrent Neural Network (RNN)-powered text production technology, users may easily and quickly produce quality writing while streamlining content development methods.
- The method ensures that the content meets professional writing standards and effectively communicates the desired message by producing coherent and contextually appropriate prose.
- Our solution meets a variety of user needs, such as content creation, chatbot development, and assistance with creative writing, and provides critical support in various domains of natural language processing.

THE WOW IN YOUR SOLUTION

- Our method produces text that is as coherent and fluid as human-generated stuff.
- Users can generate high-quality writing quickly, which speeds up their content production processes and saves them valuable time.
- Our system has applications across industries and areas and may be used for a wide range of user needs, from content creation to chatbot development.
- Our technology is driven by state-of-the-art Recurrent Neural Networks (RNNs) and provides customers with incomparable results while showcasing the newest advancements in natural language processing.



MODELLING

- In RNN architecture, sequential dependencies in text data are captured by recurrent neural networks (RNNs), which enables the production of coherent text.
- Dense word embeddings, which capture the semantic relationships between words, are utilized to enhance the model's language comprehension.
- To predict the next word in a sequence, the model is trained on multiple text corpora. The text production abilities of the model are enhanced by iterative learning.
- The utilization of regularization strategies and hyperparameter modifications optimizes model performance and ensures dependable, superior text generation.

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...
```

[Demo Link](#)