# CS4098D: PROJECT

## ABSTRACTIVE TEXT SUMMARISATION

GROUP-39

## PROJECT GUIDE

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# TABLE OF CONTENTS

# 1. INTRODUCTION

1. Abstractive Text Summarisation is the task of generating a short and concise summary that captures the salient ideas of the source text.
2. There are two different approaches Extractive Summarisation and Abstractive Summarisation.
3. Abstractive Summarisation generates new sentences, possibly rephrasing or using the words that were not in the original text. This ensures that the core information is conveyed through the shortest text possible. This reduces reading time and accelerates the process of searching the information.

# 2. PROBLEM STATEMENT

- To generate a short, precise summary of a longer text by retaining the key information of the text using Natural language processing (NLP) techniques.

**Input:**

1. Data(Sentence/Paragraph)
2. Original summary of data (Used for calculating accuracy)

**Output:**

A short summary is generated based on abstractive text summarisation

# 3. LITERATURE REVIEW

- Abstractive techniques need a more profound examination of the text i.e it needs deeper analysis. These techniques can produce new sentences,and improve the focus of the summary to maintain a decent compression rate[4].

- An RNN Encoder decoder based architecture, which is based on sequence to sequence model is applied to process the data in sequential manner.
  - ➢ The input of any state may depend on the output of the previous states [5,6], this scenario is most likely to occur in a sentence, where the meaning of a word is closely related to the previous words meaning.

- Sutskever et al. [7] describes an end-to-end approach to sequence to sequence learning using a Multilayer LSTM. The neural network contains encoder and decoder.

- In [8], a bi-directional RNN with LSTM in encoding layer and attention mechanism in decoding layer and the sequence to sequence model is used to generate a abstractive summary of text, thereby increasing efficiency and reducing the training loss.

- The RNN and attention mechanism were the most commonly employed deep learning techniques.we can also notice that few methods applied LSTM to resolve the gradient vanishing problem that occured when using an RNN, while other approaches applied a GRU[4]

# 4. BASIC DESIGN

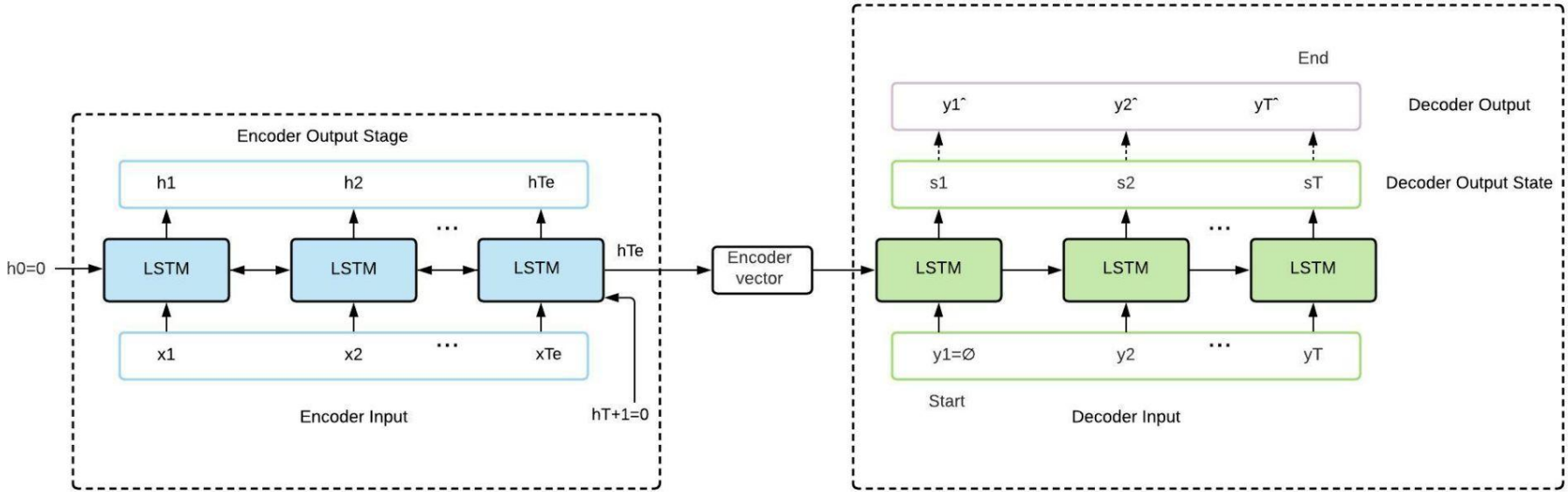


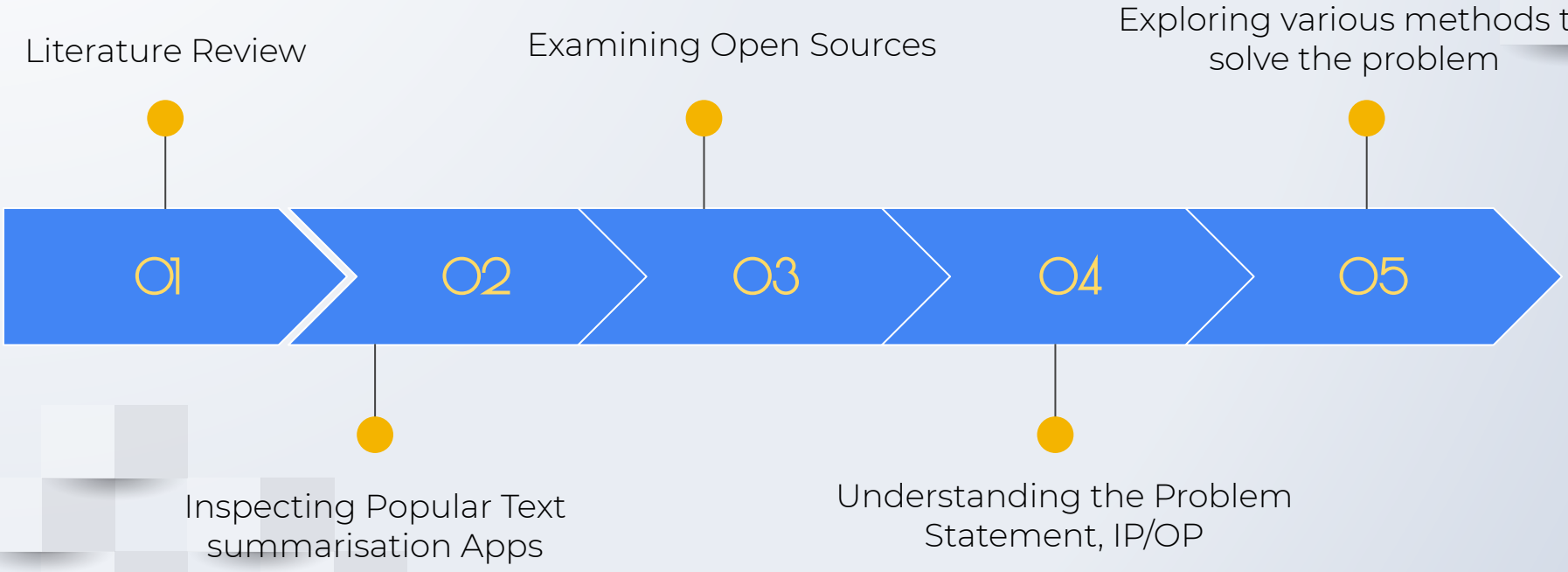

Fig. 1. Seq2Seq Model

# EXPLANATION:

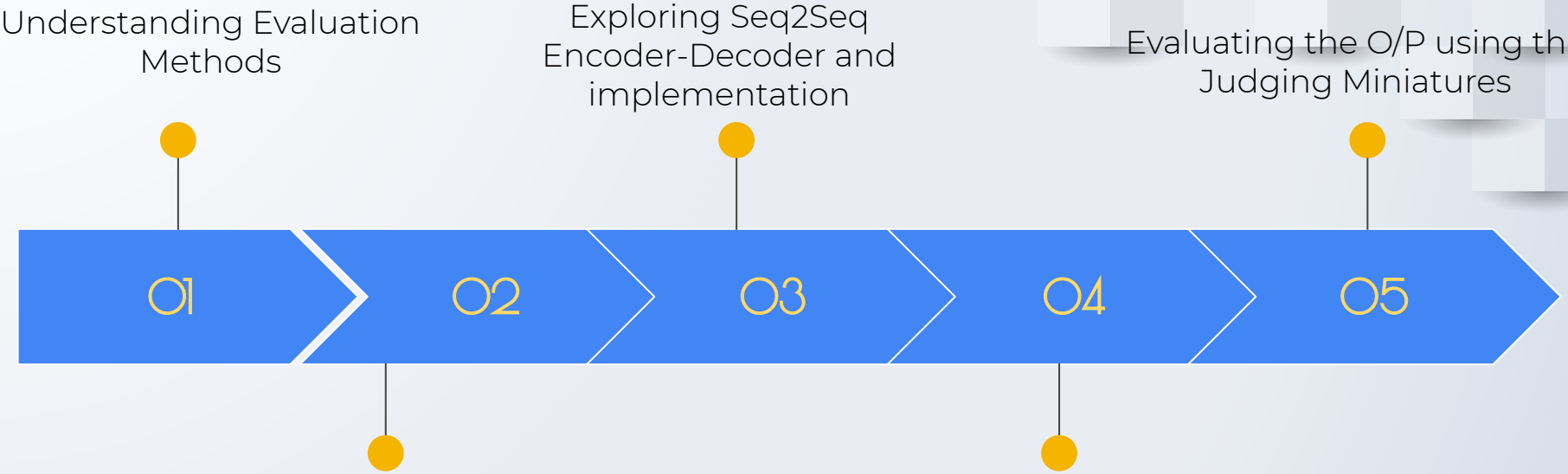
- The above shown Encoder-Decoder Architecture is a Simple seq2seq model. The encoder has a input range of Te units and after evaluation the decoder has delivered the output of range T units following the condition T¡Te. Every encoder in the state ht, can receive the previous encoder’s hidden state ht-1, this is valid in both unidirectional and bidirectional LSTM but the bidirectional LSTM has an additional feature of accessing the next encoder’s hidden state which is ht+1.

# 5. WORK DONE & WORK PLAN

## WORK DONE



# WORK PLAN


Understanding Evaluation Methods
Exploring Seq2Seq Encoder-Decoder and implementation
Evaluating the O/P using the Judging Miniatures
01
02
03
04
05
Setting up Repositories and local machines
Further Improvisation by designing new model to improve accuracy

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[12] https://github.com/neural-dialogue-metrics/BLEU


THANK
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