BVRIT HYDERABAD
College of Engineering for Women
Department of Information Technology
Major Project - Academic Year 2022-23

TEAM 3

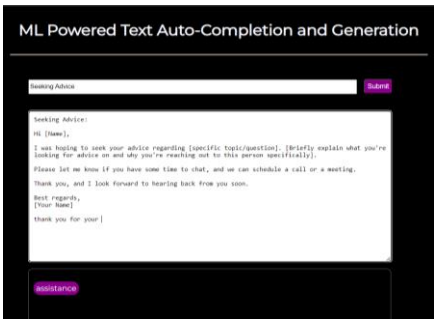
ML Powered Text Auto-Completion and Generation

Abstract

Natural Language Processing (NLP) is a sub-field of artificial intelligence that assists computers with understanding human language. It combines the power of linguistics and computer science to contemplate the guidelines and structure of language and make intelligent systems fit for comprehension, breaking down, and separating significance from text and speech. Using this concept, the project proposes a system which helps in minimizing the human effort by providing the features like text auto-completion and generation. Auto-completion refers to the completion of a word, or a phrase, as we start typing in a document. The prediction is based upon the selection of the most likely word from a set of frequently used words. The text prediction task consists of editing text with the minimum number of keystrokes feasible. This method is suggesting words that the user intended to write, and the system predicts the next word related to the previous work. Text generation is a feature which is an enhanced version of Gmail's Smart Reply. This feature helps in generating a template of the mail by classifying the subject line. The purpose of our intelligent system is to help differently abled people by increase their typing speed, as well as to help them decrease the number of keystrokes needed in order to complete a word or a sentence. The proposed system is also very useful for multi-domain professionals who are involved in sophisticated writing.

Modules

Data Collection
Data Pre-Processing
Building the RNN Model
Training the model
Testing the Model



Architecture

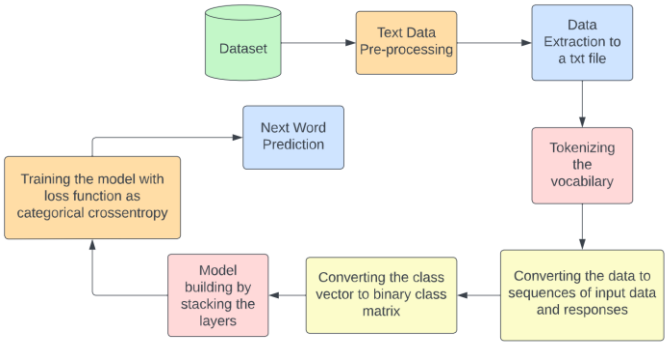


Fig 1. Project Flow of Text Auto-Completion Module

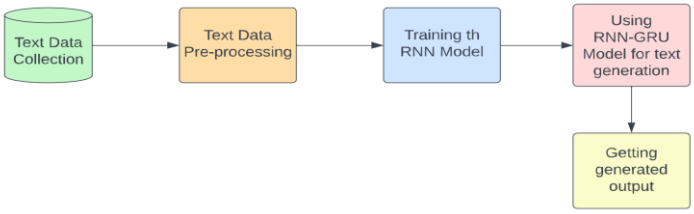


Fig 2. Project Flow of Text Generation Module

Tools and Technologies

- **Python 3.9**
- **Tensorflow**
- **Keras**
- **N-Grams**
- **LSTM**
- **GRU**

Conclusion and Future Scope

The proposed model has the capabilities of Text Generation and Auto-Completion. These features help in reducing the keystrokes while writing/drafting any text. Our future scope would be adding the feature template generation for reply by storing the useful information from previous conversations.

Guide

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Github Links

1. https://github.com/19wh1a1207/MLPoweredTextAuto-CompletionandGeneration
2. https://github.com/19wh1a1216/MLPoweredTextAuto-CompletionandGeneration
3. https://github.com/19wh1a1218/MLPoweredTextAuto-CompletionandGeneration
4. https://github.com/19wh1a1246/MLPoweredTextAuto-CompletionandGeneration