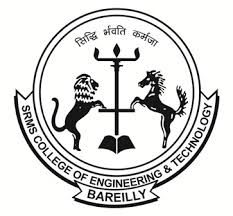
Shri Ram Murti Smarak College of Engineering & Technology, Bareilly (U.P.)

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**Design And Development of**

**A Personality Based Neural Chatbot**

**[Synopsis]**

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1. **Introduction**

A generative ChatBot based on Sequential Neural Network and Deep Learning which can be trained on any desired dataset for specific purposes. Instead of ordinary ChatBots which are based on hard-coded responses, it can understand context and respond accordingly.

The fame of Deep Learning is at its epitome today. This here is a simple demonstration of what elementary level Deep Learning can achieve. Our project is a generative chatbot that works on a sequential neural network.

Chatbot represents one of the several possibilities that are possible by training a sequential neural network. Going into the specifications, it is constructed of three layers of the sequential neural network each containing 128 neurons. The encoder and decoder have a vocabulary size of 20,000 each. The corpus used for training is a collection of dialogues from 617 movies containing about 220,000 conversations (Cornell Movie Dialogue Corpus).

Automation allows all kinds of amazing things, but it is all done with virtually no personality. Building a chatbot with the ability to be conversational with emotion is crucial to getting people to gain trust in the technology. And now there are plenty of tools and resources available to rapidly create and launch chatbots with the personality customers want and business’s needs. This bot also helps the introverts to increase the ability for realistic conversation and helps them to feel confident in social conversations. This is a step towards the mankind.

The real "catch" about our chat bot is that it can be trained on any data we like, it can learn however we want it to. It gives contextual answers instead of hard-coded responses. It draws information from previous conversational exchanges and is thus, closer to how humans interact. The ability to be trained on any data is not only limited to English, it can be trained in any language we want it to any that is the real beauty of it.

The bot performs extremely well on casual conversations that are prevalent in movies given the fact that we had a relatively short time to train it and thus, several parameters had to be compromised (number of neurons in each layer etc.). Talking about future improvements, we can train it on even a bigger dataset and use more layers or more number of neurons in each layer. Also, we could add the feature of training it simultaneously while using it which would further increase its accuracy with experience.

1. **Methodology**

In this project, we are using a Recurrent Neural Network model for handling sequences. This model is really well suited for various NLP tasks, and exactly in the text generation context. We trained a seq2seq model at word level and instead of using vanilla RNN we preferred a long/short term memory layer which helps in better control over the memory mechanism of the network.

In this project we are using following programming languages/technologies/libraries for designing this project

* Python 3
* NLTK
* Tensorflow
* Keras

1. **Project Significance**

This project makes marketing more powerful as it interacts with people with a human like personality which helps humans to rely and build trust over the technology. Also this can help people with social anxiety issues to cope up and develop their personalities and public speaking confidence. This project helps people suffering from depression problems to open up and share their views without the fear of getting judged and leakage of their thoughts and views over society.

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