**Developing a simple Conversational chatbot using Tensor flow neural network**

**Introduction**

The ability of the system (the chatbot in this case) to learn from the inputs it experiences is what is meant by the term "machine learning." One method they use to accomplish this is called natural language processing (NLP), and it describes any time a computer interacts with human language.

However, NLP is just the beginning. Conversational AI, or a chatbot, must possess the following three core abilities in order to be considered truly intelligent: Give a detailed response. - Don't lose track of what's being said. - Pass for a human without a second look.

**Dataset**

The datasets used for the implementation and deployment of the simple conversational chatbot was obtained from kaggle dataset repository. The data is classified into input, tags and responses.

Input: These are exactly the messages that the user is going to be sending to the bot.

tags : tags are used to categorise the inputs and map them to a particular type of response

responses : once, we have mapped an input to an appropriate tag, we can select one of the response to give back to the user.

**Training**

Although there are lot of Machine Learning model (such as naive bayes, support vector machine,etc.)that could be used for creating a chatbot model, but a neural network model will be used for This task owing to the fact that they have proven to be very effective and perfectly syncs well with the chatbot use case and the intent\_json conversational data that will be used.

Therefore, for this task the datasets was used to train a neural network model using Stochastic Gradient Descent.

Stochastic gradient descent is an optimization algorithm for minimizing the loss of a predictive model with regard to a training dataset.

**CONCLUSION**

The tensor flow deep neural network performed optimally and gave a high accuracy on training, which was further justified by testing the model. The implementation further revealed that a chatbot's effectiveness is dependent on the quality of data supplied during the training of the model.