**SoC Summer 2021 Final Documentation**

**Unscripted**

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*Keyword- Machine Learning, Speech Recognition, Summarizer, Fine Tuning, Tokenizer, NLP, Unscripted*

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**Brief Description**

| This project **UNSCRIPTED-CHAT** takes a chat between 2 people and tries to summarize it so that you can get a gist of what the conversation is about. It first takes the voice sample as an input and converts it to text . Then it takes the text and tries to summarize it out. |
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**Progress**

| *PHASE1-* ***INITIAL LEARNING ABOUT BASICS OF MACHINE LEARNING***  In this phase we learnt about various tools and techniques used in machine learning like colab, jupyter notebook, matplotlib, pandas, scikit, and the basics of neural network. We learnt it by self learning course and reading book machine learning by Sebastian Rachaka.  *PHASE2-* ***IMPLEMENTATION OF BASIC MACHINE LEARNING SKILLS***  In this phase we focused more on implementation and tried to do a basic hands on application on machine learning. I personally tried out the iris program to take in the petals/sepals data and predict the variety of iris flower.  *PHASE3-* ***LEARNING PHASE ABOUT NATURAL LANGUAGE PROCESSING AND SPEECH RECOGNITION***  In this phase we read about various techniques of speech recognition and various metrics to judge the quality of output generated like wer, rogue, bleu. We further read about how to make a good dataset and most importantly how to train a machine learning model for prediction using a hugging face course and other resources.  *PHASE4-* ***FINAL IMPLEMENTATION PHASE***  In this phase we finally tried to implement our knowledge from all previous learnings and generate a good dataset and a machine learning to satisfy our initial aim- **UNSCRIPTED** |
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**Results**

| YOU CAN FIND THE FINAL RESULTS HERE- [github](https://github.com/ayushgopal/Unscripted_Personal)  GOOGLE COLAB NOTEBOOK- [colab](https://colab.research.google.com/drive/1rVVLZ-16ThtH1m4TCky64GcF1dGnhzJK#scrollTo=ZtNs9ytpCow2)  WEEKLY DOCUMENTATION- [PROGRESS-WEEKLY](https://docs.google.com/document/d/14fDqPcek9DBA5z_AoaB8K9uuPA-EMCAu4fW4dqC54UM/edit#) |
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**Learning Value**

| By the end of this project I find myself comfortable in machine learning and natural language processing. I feel that through this course I have built a basic foundation in it and I am all ready to take this to the next level by taking courses on these particular topics. |
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**Software used**

| PYTHON, GOOGLE COLAB, JUPYTER NOTEBOOK, PYTORCH, PYDUB, PICKLE, WANDB, TENSORBOARD, GOOGLE SPEECH TO TEXT, T5-BASE TOKENIZER |
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**Suggestions for others**

| The main addition someone can make is to make an app that can take in call recordings and generate a brief summary on it. Further you can use my model as starting point and make amends to it by using latest datasets so that it can improve the model to its fullest. |
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**Disclaimer**

| *1)Fair use of text summarization model created by Priya Diwedi for Medium-* [*https://towardsdatascience.com/fine-tuning-a-t5-transformer-for-any-summarization-task-82334c64c81*](https://towardsdatascience.com/fine-tuning-a-t5-transformer-for-any-summarization-task-82334c64c81)  *2)This project can be used under MIT licence for further distribution, development, etc.*  ***Copyright (c) <2021> <Aayush M Gopal>***  ***Permission is hereby granted, free of charge, to any person obtaining a copy***  ***of this software and associated documentation files (the "Unscripted\_ChatSummarizer"), to deal***  ***in the Software without restriction, including without limitation the rights***  ***to use, copy, modify, merge, publish, distribute, sublicense, and/or sell***  ***copies of the Software, and to permit persons to whom the Software is***  ***furnished to do so, subject to the following conditions:***  ***The above copyright notice and this permission notice shall be included in all***  ***copies or substantial portions of the Software.***  ***THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR***  ***IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,***  ***FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE***  ***AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER***  ***LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,***  ***OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE***  ***SOFTWARE.*** |
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