

# Indian Institute of Technology, Guwahati



Department of Computer Science and Engineering

Project report

On

**“Speech Based Playlist Application”**

Based on

Speech recognition system

Course: CS566 Speech Processing

Submitted to  
Prof. P. K. Das

Submitted by:  
Rahul Chorotia (214101039)  
Kumar Sandip Roy(214101026)

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**Abstract:**

This project is based on Hidden Markov Model(HMM). It has been developed using C++ and Visual Studio (2010) IDE. The main goal of this project is to recognize the language spoken by the user and open the folder containing the playlist of the respective language.

Currently, the application supports the recognition of the languages namely Telugu,

Hindi, English, Bengali and Tamil. It can be extended to support many other languages.

## **EXPERIMENTAL SETUP**

This project is divided into following modules:

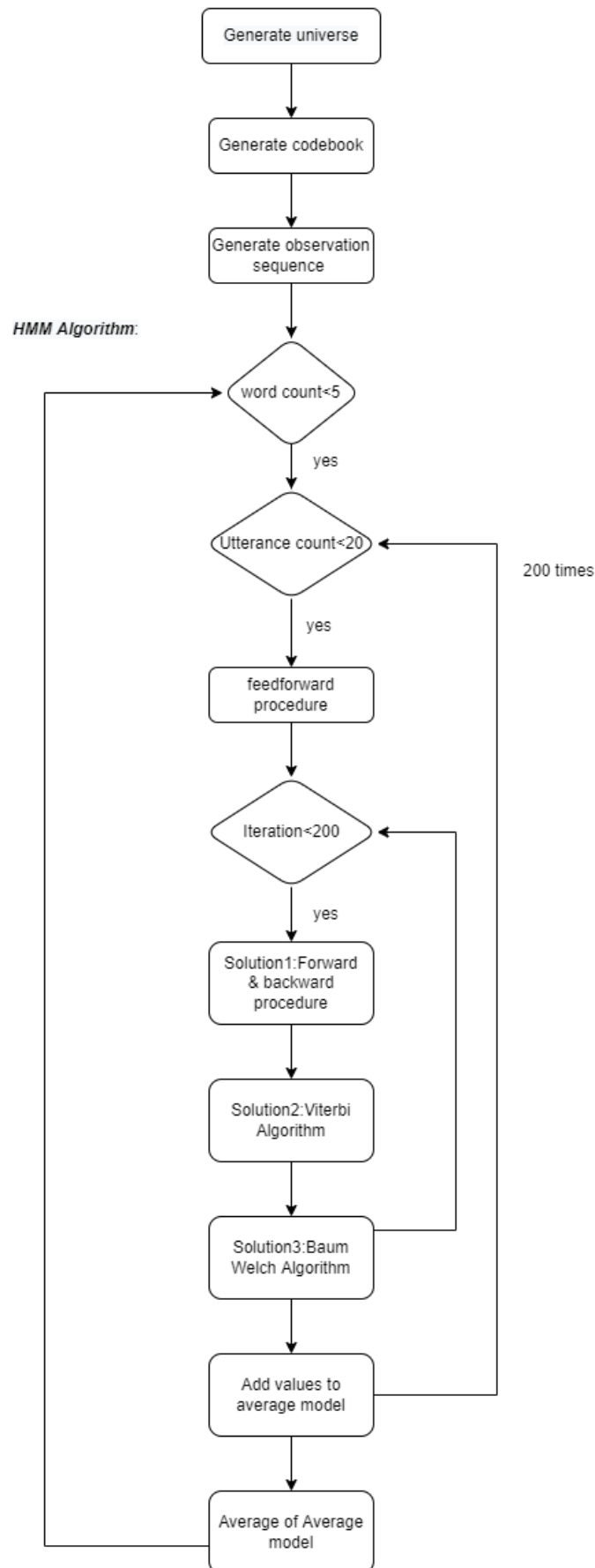
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### **1. Training Module:**

The flow for training over data is as follows:

- i. Record the data as 20 utterance of each word
- ii. Extract frames for every utterance
- iii. Using Tokhura distance analysis (in vector quantization) calculate the observation sequence.
- iv. Pass this observation sequence to HMM for model designing.
- v. Now enhance the model using HMM re-estimation algorithm.

Now the reference model is ready for our project. The training of data is not integrated with GUI application. This is different module which will just evaluate the reference model.



### Training Module Flow

## **2. Testing Module**

System will give instruction what is going on and user is required to follow it.

The flow of testing is as follows:

- i. Live recording of data is done when system instruct.
- ii. Testing the data with pretrained models.
- iii. Language name detected.
- iv. then it will open the available songs of that particular language.

## **3. Live Training Module:**

If user want to train the model with his own voice then follow the steps

- 1.click on the train module button.
- 2.put the word(0-4) number and the utterance number(1-20).
- 3.record all the utterances of all the word.
- 4.click on the train model.
- 5.then finally click on the update model button.