

# Speech Recognition for Cinema Ticket Booking System

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**Abstract:** - This Paper basically deals with using best available Speech Recognition Engine for Speech Recognition in cinema ticket booking system. So, we are trying to implement the system that will use speech as an input to perform the required action. After research on speech recognition engine, we found Microsoft's speech recognition is best suited for our system as we don't have to implement engine and use various models available for speech recognition. Microsoft's speech recognition is one of the best engine's available for speech recognition and has various in-build functions like Confidence value, input volume level, multiple language support, etc. which is explained later in this paper. We are trying to implement system which will automate the ticket booking outside Cinema Halls which in-turn will provide better User Experience as the Computer itself will be doing reasoning and ticket booking task.

**Keywords:** - Artificial intelligence, Speech-to-text, Speech recognition, Speech recognition engine.

## I. INTRODUCTION

Currently in cinemas only staff can book ticket/s for customer. So, there is always need for number of staff to do repeated work i.e. Ticket booking. In today's world it can be automated using artificial intelligent. this will provide better user experience as computer will be doing reasoning and ticket booking task. This artificial intelligence will make various task such as searching for latest movies or ongoing movies fast. For example, user may ask system for "which movie is in demand today?", so system will show on demand movies using its intelligence. One such idea was working model of an educational oriented app that will make teaching easier and learning more pleasant by using speech recognition as one of its pillar and will address the basic knowledge of geometry to the students. Even the blind people can be benefited as they can convey the word and the computer will listen to it and will perform the required action. Also, the students with physical disabilities can be benefited in writing their school or college stuff by just saying the required words and the computer just itself writing it for them [1].

Speech Recognition is a way by which humans can interact with computers through voice. It is also called as Automatic speech recognition (ASR) or Speech-to-text (STT). In Speech Recognition human's voices are captured/inputted through microphone and converted into digital format which is then feed to Speech recognition engine which then performs Speech recognition [3]. As Microsoft's Speech Recognition Engine is best suited for our system. So, we are using Microsoft's Speech Recognition Engine for speech

recognition in our system. Features of Microsoft's Speech Recognition Engine are,

### 1) It can be packaged with our system

Unlike Windows system. speech namespace, microsoft. Speech can be packaged into application itself.

### 2) No need for user training

It does not require training as there are language packages already available. We are using Indian English Language Package.

### 3) Can Be installed separately

It can be installed separately so that our speech recognition engine does not depend on windows for speech recognition rather it depends on package which can be upgraded or installed when needed or in case of error.

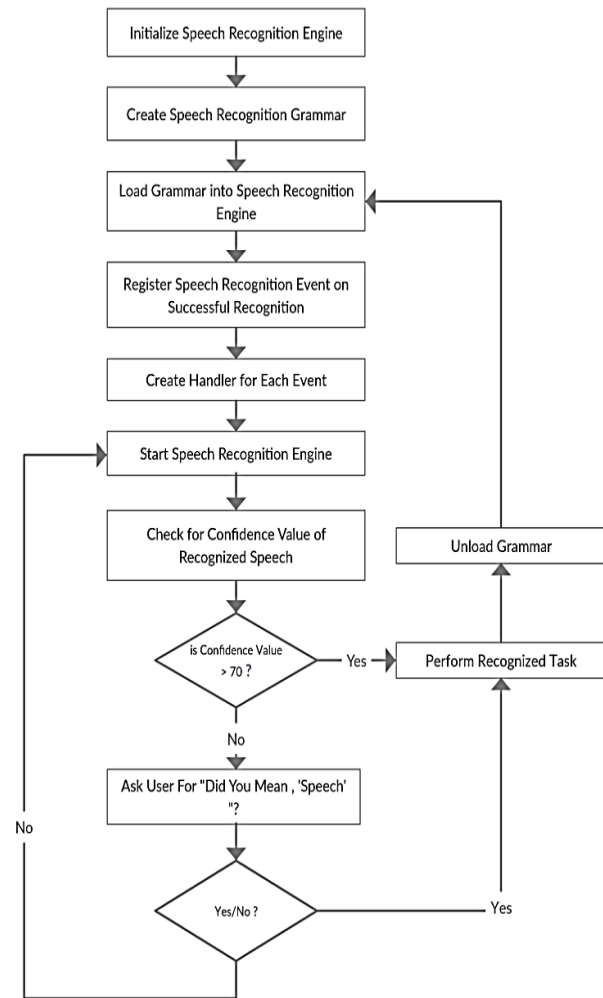
## II. LITERATURE SURVEY

[4]Researchers proposed a Voice Separation and Recognition System that uses a microphone sensor array along with signal processing. The aim of this project explained in this paper was to have a correct voice recognition rate above 70% and they are trying to improve the rate in the near future. [5]In this paper Researchers explain the overall process of the system. They explain how the system accept the input from the user in the form of speech, recognizing that inputted speech, creating its word-semantic model, storing it into the database and trained. So that if again the same input is given it will recognize that input by comparing it with the word-semantic model stored in the database using feature extraction method. They used microphone to accept the input from the user.

[6] In this paper one application which Researcher named as Voice Geometry Painter using speech has been proposed. They developed a app that helped the children to learn and draw various geometric figures by just saying the required commands.

**III. PROPOSED SYSTEM**

The speech recognition process is shown in Figure 1. For speech recognition following steps are to be followed



**Fig 1: Speech Recognition Process Block Diagram**

**1. Initialize Speech Recognition Engine:**

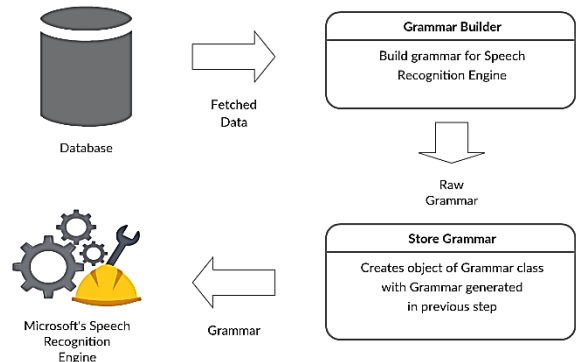
Declare object of speech recognition engine with language to use which is US English i.e. ‘en-us’ and select default microphone device as input to engine [2].

**2. Create Grammar for speech recognition engine:**

Step to create grammar for speech recognition engine is shown below in figure 2.

As Shown above following steps are done to create grammar.

- i. Fetch data from Database
- ii. Feed fetched data to grammar builder
- iii. Create instance of Grammar class with build grammar from grammar builder.



**Fig 2: Process of creating Grammar.**

**3. Load Grammar into Speech Recognition Engine:** Feed or load generated grammar from previous step to instance of Speech recognition engine.

**4. Register for event on successful Speech Recognition:** Declare function that will be called on successfully recognition of speech so further actions can be taken.

**5. Create event handler for each event:** Create event handler i.e. function which will be called on successful speech recognition. This event handler contains code for action to be performed for that particular recognized speech.

**6. Start Speech Recognition Engine:** Start Speech recognition engine in synchronous mode to start recognition of speech. In synchronous mode, task for recognized speech is performed then and only then next speech is recognized.

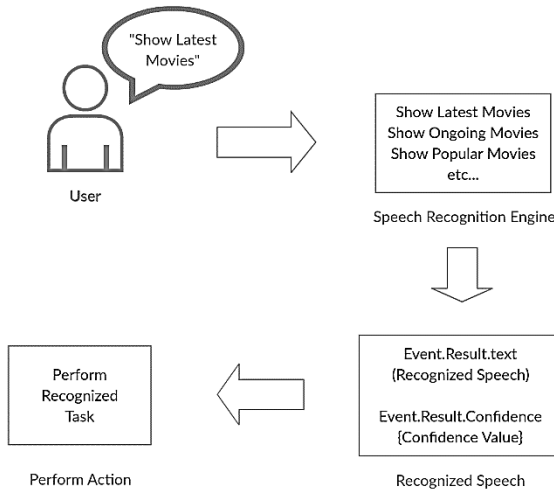
**7. Check for confidence value:** Before performing desired task for recognized speech, Confidence value (it is nothing but probability of that speech to be same with this result) is checked. If its value is less than 70% or 0.7 (out of 1) then a window is popped-up asking whether user meant predicted result and if user says no then result is discarded and ready to recognize next command.

**8. Perform recognized task if confidence value is as required:**

Recognized task is finally performed and then current grammar is unloaded and loading of new grammar is done for recognition of next command.

**IV. DESIGN OF CINEMA TICKET BOOKING SYSTEM**

Cinema ticket booking system takes voice input i.e. speech from user via microphone and converts it to digital form. This digital voice is used by speech recognition engine which then compares this digital voice with loaded grammar at that time and then performs action for that particular recognized speech which is shown below in figure 3.



**Fig 3: Working of System**

Working of our system is follows:

**1) User Gives Command**

User is one who is going to book ticket for himself. User ask or gives voice command to our system through microphone

**2) Feed input to Speech Recognition Engine**

Voice input from microphone is then converted into digital format which is feed to Speech recognition engine which performs speech recognition by using grammar created from all possible commands that are created from data fetched from database.

**3) Use output from speech recognition engine to perform task**

Output from speech recognition engine which is a string that represents some command possible at that particular state of system is used to call function for action to be performed.

**4) Perform recognized task**

After recognition of command, function for performing required task is called and required task is performed.

**V. CONCLUSION**

Microsoft.speech namespace i.e. Microsoft’s speech recognition engine is best speech recognition engine available and is most suitable for our system for speech recognition. Microsoft’s speech recognition engine also has very good recognition accuracy and is recently more advanced with Deep Learning.

Thus we have designed our Cinema Ticket Booking System with Speech Recognition for booking ticket outside cinemas. This Speech Recognition module can be used for many existing systems to improve user experience and automate things.

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