

# Database Interaction Using Automatic Speech Recognition

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**ABSTRACT:** Interactions with standard databases are possible on condition that we all know about the quality SQL queries. This paper focuses on interacting with the DBMS with speech. Here users can interact with the database with their voice for retrieving details from it. Hence it's not necessary that user must have a previous knowledge about the SQL queries. Information Retrieval deals with the straightforward access to the data supported the user's request, which is able to be presented within the variety of a question .A dialog system that understands spoken language queries asks for further information if necessary and produces a solution to the speaker's query. Most of the research works in Information Extraction focus only on communication processing, within which some are dedicated to the study of voice communication Information Extraction **KEYWORDS** – Word Recognition, Keyword search, Query Processing, pattern matching, Speech recognition, database, performance evaluations, Speech to SQL, SQL generator.

## I.INTRODUCTION

Natural Language Processing could be a subfield of computing that's accustomed creates intelligent machines which will communicate with humans within the same way that humans do. It closes the gap between man and machine. The most goal of language Query Processing is to own a machine translate English sentences. Despite all of the difficulties, it's commonly used.

## II.RELATED WORK OR LITERATURE SURVEY

[1] "Conversion of language Query to SQL Query" Author: Abhilasha Kate, SatishKamble, AishwaryaBodkhe. Every person will get pleasure from the employment of tongue. Using plain English, this device can assist T&P officers in retrieving and managing data from student databases. The buyer isn't required to be told a posh source language like SQL.The system's user-friendliness stems from its ability to require data in speech format.

[2] A Speech Recognition and Speech Corpus System supported Matlab Author: Qiang He, Youwei ZHANG Mat lab handles memory maintenance and other tasks, been fully understood, Successfully improved, or a brand new collection of algorithms has been created; it's possible to migrate them to a different language as quickly as possible. Allowing users to consider the core of the HMM training and recognition algorithm. This causes you to save plenty of your time.

[3] Voice Based language Query Processing Author: Puja Munde, Sayali Tambe. This device was created using speech recognition technology.User speech is are in putand then converted to text and then text to SQL query and results are displayed in tabular format. To urge leads to tabular format, techniques like analyzer, parser, matching, and dictionary mapping are used. The NLP technique assists within the resolution of both basic and sophisticated questions.

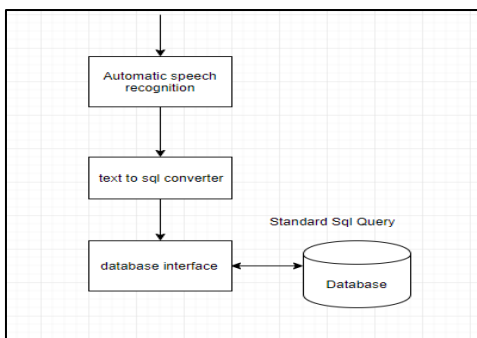
[4] Key-Word Based Query Recognition during a Speech Corpus By Using Artificial Neural Networks Author: Raji Sukumar.A, Sarinsukumar A Because of the universal availability of the web, people feel that there's nothing less difficult than searching the net. Despite this, a major portion of the world's population lacks access to computers or the net. As a consequence, speech query processing systems are extremely necessary. The scheme includes a linguistic communication question supported a grammar, which describes how words are combined during a meaningful way using well-known laws

[5].Speaker Independent Speech Recognition System for Paite Language using C# and Sql database in Visual Studio. Author: KapangLegoh, Chingmuankim **SPEAKER INDEPENDENT SPEECH RECOGNITION SYSTEM IS A SYSTEM TRAINED TO RESPOND THE USERS REGARDLESS OF WHO THE SPEAKER IS.** With the rapid increase and advancement in technologies, individuals can now interact with laptops, computers, and smart phones. Speech Recognition System serves as the main interface between human and computer. Much Research has been done in major Indian languages



[6]. Effective XML Keyword Query Processing Author: Prashant R. Lambole, Dr. Prashant N. Chatur We proposed an efficient XML keyword query processing technique supported ELCA query semantic for better knowledge discovery over XML data during this paper. Taking under consideration the matter of missing keywords during a query and also the sparse distribution of keywords in an XML text, our proposed technique provides meaningful results even when standard ELCA computation algorithms return NULL or root node by locating ELCA nodes for subqueries generated employing a subset of keywords within the query. Application for a Virtual room.

### III.SYSTEM ARCHITECTURE



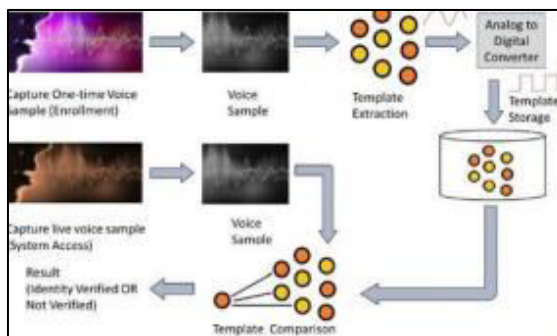
### SPEECH RECOGNITION:

Speaker Recognition is another term for speech recognition. The user must say a word or phrase into a microphone at the time of

An Analog to Digital (ADC) converter converts the electrical signal from the microphone into a digital signal. it's saved as a digitised sample within the storage device. The machine then compares and tries to suit the candidate's input voice to the stored digitised voice sample, leading to the identification of the candidate..

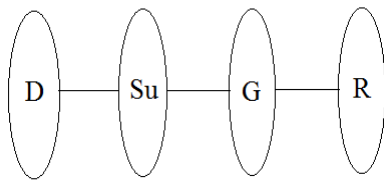
### SET THEORY

- 1) Let S be as system which input image  
 $S = \{In, P, Op, \Phi\}$
  - 2) Identify Input In as  $In = \{Q\}$  Where, Q = User entered input (text)
  - 3) Identify Process P as  $P = \{CB, C, PR\}$
- Where,  
 CB = preprocess  
 C = apply classifier algorithm  
 PR= preprocess request evaluation
- 1) Identify Output Op as  $Op = \{UB\}$



Where,

### MATHEMATICAL MODULE



Where,

D = Make user’s voice input document

Su = speech recognition of the users

G = Construct query matching graph

R = Recommend query based on users requirement.

**Failures:**

1. An oversized database will increase the quantity of your time it takes to retrieve information.
2. Failure of the hardware.
3. Failure of the program

**Success:**

1. Have a look at the Datasets for the main points you would like.
2. The patron receives a brief response supported their specifications..

**Space Complexity:**

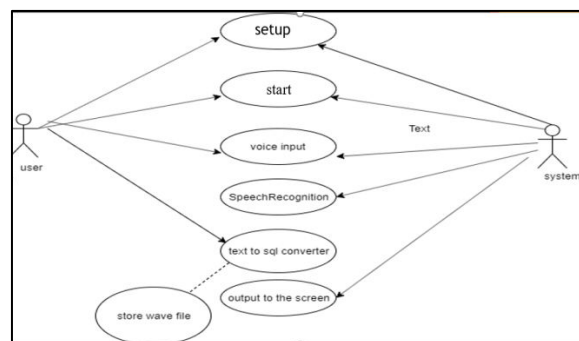
The complexity of space is decided by how discovered patterns are presented and visualized. The more data is processed, the extra space is required

**Time Complexity:**

Check the quantity of trends within the datasets= $n$  If ( $n > 1$ ), retrieving information will take a protracted time. As a result, this algorithm has an  $O(n^2)$  time complexity. The mathematical model presented above is NP-Complete.

**Use Case:**

Fig shows the utilization cases of the proposed system for the System and demonstrates differing kinds of actors involved during this system and actions related to them.

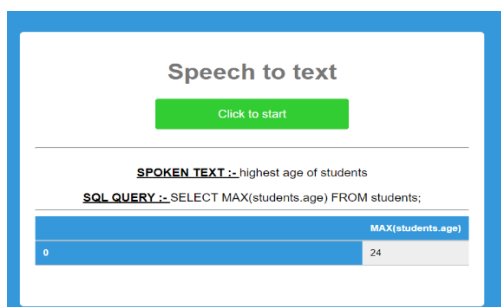


**Modules:**

- 1 Voice detection It takes user's voice input through speech recognition package.
- 2 Authentication Each user has his own profile which are secured with passwords
- 3 Pattern Matching Pattern matching constructs the query from user’s voice input and provides output to the user
- 4 Web application Web application is provided for interacting with users



#### IV.RESULTS



This is the page where user's voice input is taken and through pattern matching the required query is generated and user gets his output.

#### V.CONCLUSION

The implementation of the database toolbox DBTool and therefore the recording tool ActVoice are transparent to the user within the speech recognition educational framework mentioned above. Matlab handles memory maintenance and other tasks, allowing users to focus on the core of the HMM training and recognition algorithm. This causes you to save plenty of your time. When an algorithm has been fully understood, successfully improved, or a replacement collection of algorithms has been created, it's possible to migrate them to a different language as quickly as possible. within the mandarin syllable recognition experiment.

#### REFERENCES

- [1] L.Rabiner, B.H.Juang. Fundamentals of Speech Recognition. PTR Prentice Hall, 1993
- [2] Matlab applications programme Interface Guide Version 5. MathWorks Inc.
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- [4] Qiang HE, Youwei ZHANG. "On Prefiltering and Endpoint Detection of Speech Signal". Proc. ICSP'98, 1998, 1:749-752.
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