

VOICE BASED RETRIEVAL FOR TRANSPORT ENQUIRY SYSTEM

Miss. Amruta P. Deshmukh¹, Prof. V. B. Bhagat²,

¹Student, Computer Science and Engineering, P. R. Pote (Patil) COET Amravati, Maharashtra, India

²Prof., Computer Science and Engineering, P. R. Pote (Patil) COET Amravati, Maharashtra, India

Abstract - Now this is the age of speed. Everything happens in the speed of supersonic. The data can be transferred at the speed of light in the digital medium, can travel in the supersonic speed, hence there is a need of information inflow in the same speed. Here is one such need of information fast enough. We have experienced in waiting to a transport terminals for transport controllers to get the information about the transport facility. We encounter so many times there will be no person for providing these information which significantly wastes the time just to know whether there is any facility or not. Here is one solution for such a problem which less the human intervention in providing such information in the transport terminals. Voice Based Automated Transport Enquiry System is the enquiry system which operates based on the voice input given by the user. There is no communication which is understood more appropriately than voice. This system too uses the voice commands and gives the required information in the form of voice. This system is can be installed in any transport terminal like Bus stands, Railway terminals or airports.

Key Words: Enquiry System, Speech to Text, Voice based,

1. INTRODUCTION

Voice is the basic, common and efficient form of communication method for people to interact with each other. Today speech technologies are commonly available for a limited but interesting range of task. This technologies enable machines to respond correctly and reliably to human voices and provide useful and valuable services. As communicating with computer is faster using voice rather than using keyboard, so people will prefer such system. Communication among the human being is dominated by spoken language, therefore it is natural for people to expect voice interfaces with computer.

The call made from a user to the service number is forwarded to the automated system which provides a walkthrough to the caller to enquire the bus timings. With a welcome greeting, the verbal instructions are provided to the user to convey the source and destination locations of the travel. When a user has made a choice of the station/location the same is conveyed

back and confirmed from the user. In case of any difference, the user is allowed to reselect the station.

Once the user preferences are confirmed, the system searches the database for the requirements of the client. If appropriate results are fetched from the databases, the bus timings, number of buses and service class details are provided to the user in the form of voice. The system is built on the Microsoft .NET platform with Microsoft Speech SDK components using Microsoft C# programming language. Microsoft Sql Server 2005 and above is used as the database platform to create, query the database and retrieve the necessary data from the database.

2. LITERATURE SURVEY

Speech is an exceptionally attractive modality for human computer interaction: it is "hands free"; it requires only modest hardware for acquisition (a high-quality microphone or microphones); and it arrives at a very modest bit rate. Recognizing human speech, especially continuous (connected) speech, without burdensome training (speaker independent), for a vocabulary of sufficient complexity (60,000 words) is very hard. However, with modern processes, flow diagram, algorithms, and methods we can process speech signals easily and recognize the text which is talking by the talker. From the technology perspective, speech recognition has a long history with several waves of major innovations. Most recently, the field has benefited from advances in deep learning and big data.

The advances are evidenced not only by the surge of academic papers published in the field, but more importantly by the worldwide industry adoption of a variety of deep learning methods in designing and deploying speech recognition systems. Dynamic time warping is an approach that was historically used for speech recognition but has now largely been displaced by the more successful HMM-based approach. Dynamic time warping is an algorithm for measuring similarity between two sequences that may vary in time or speed.

3. PROPOSED SYSTEM ANALYSIS AND DESIGN

3.1 Analysis

Speech Recognition (is also known as Automatic Speech Recognition (ASR), or computer speech recognition) is

the process of converting a speech signal to a sequence of words, by means of an algorithm implemented as a computer program. Although many technological progresses have been made, still there remains many research issues that need to be tackled.

This project “Voice Based Retrieval For Transport Enquiry System” provides us a simple interface for enquiry and maintenance of travel information. It can be used by educational institutes or colleges to maintain and achieve the records of travels easily. Achieving this objective is difficult using a manual system as the information is scattered, can be redundant and collecting relevant information may be very time consuming. All these problems are solved using this project. Throughout the project the focus has been on presenting information in an easy and intelligible manner. The project is very useful for those who want to know about Travel Information Systems using Voice Command and want to develop application based on the same concept. The project provides facilities like search the bus by city name using voice command user get timing of available buses, show map of routes of different buses. There is no communication which is understood more appropriately than voice. This system too uses the voice commands and gives the required information in the form of voice.

In propose system user can search the information of travels using the voice command. In our propose system provide the search engine for searching by City name he/she get the information about available buses there timing and routes. Similarly we can search staff data by using the voice command using the search engine by staff name or staff department wise search. For searching the information user have user voice command. These command processing the in database and finding the proper result record which is store in database and showing the results to users. Here we used apriori algorithm for processing the data. Apriori is an algorithm for frequent item set mining and association rule learning over transactional databases. It proceeds by identifying the frequent individual items in the database and extending them to larger and larger item sets as long as those item sets appear sufficiently often in the database. In proposed system there are administrator model who have rights to inserting the data of all travels. Using the registration form we providing the registration form for travel separately. Admin have to submit the data in forms of travel name, department and related information of travels.

3.2 System Design

3.2.1 Basic Idea

Architecture of the system that shown in figure 3.2.1 This project “Voice Based Retrieval For Transport Enquiry System” provides us a simple interface for

enquiry and maintenance of travel information. It can be used by educational institutes or colleges to maintain and achieve the records of travels easily. Achieving this objective is difficult using a manual system as the information is scattered, can be redundant and collecting relevant information may be very time consuming. All these problems are solved using this project. Throughout the project the focus has been on presenting information in an easy and intelligible manner. The project is very useful for those who want to know about Travel Information Systems using Voice Command and want to develop application based on the same concept. The project provides facilities like searching of buses/travels thus reducing paperwork and automating the record generation process in an educational institution.

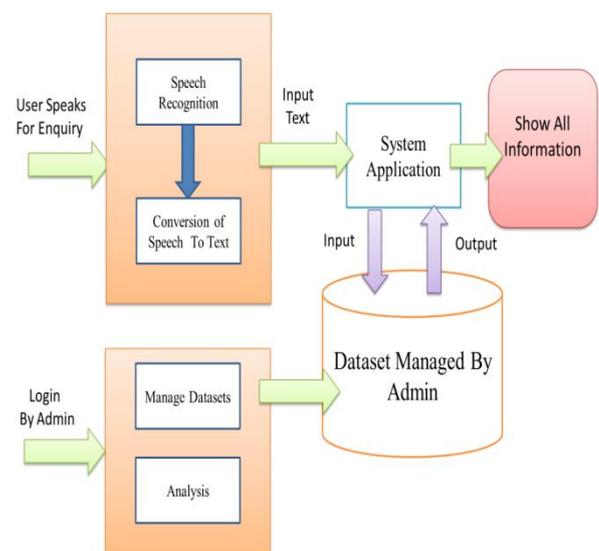


Fig 3.2.1 Architecture of Voice based Enquiry system.

Components included in the architecture are: Commands, Speech, Search and Administration. In speech recognition, the main goal of the feature extraction step is to compute a parsimonious sequence of feature vectors providing a compact representation of the given input signal.

- **Commands:** This is one of the major components of the current system which recognizes the commands given by the user. This component is responsible for recognizing the commands and interpreting the command and sending appropriate request to the Search component.
- **Search:** Search components take the input as the request from the Command component and retrieve the appropriate result from the database. It gives back to the display component and the speech component.
- **Speech:** This component is used to deliver the result in the form of the voice using Microsoft speech control. This takes input from the Search component.

- Administration: Through this component the maintenance personnel can update the information. In our system Admin have these all rights. Administer can fill the data or information of travels and using the form designed. With the help of registration form data is store in database tables.

3.3 Modules of Proposed System:-

1) Admin module:

In our propose system admin is one of the module how have all rights to access the system and data related to it.

- Admin is an authorized person, admin can login to system with his/her authenticate userid and password.
- Admin have rights to inserting the information about buses, there timing and roots.

2) User module:

User module is the second part of our propose system. In user module user can performs some action which is describe as follows:

- User can search buses using voice command.
- After searching user get information of available buses, there timing and their roots.
- This system helps user to retrieve data more easy.

4. System Implementation

4.1 Setting Environments

To implement this concept smoothly, we need to have one of the various versions of windows operating system which can be XP or onwards and we need to install the Microsoft Visual studio 2010 or onwards software tool to support complete functionality of the product. Here SQL database is used to store the data. We can run the product in the any browser

We can test this product module wise by checking the functioning of the various buttons for which we have done the programming. However in case of integrated testing we can run whole project & observe its execution details against the desired results.

Software used:

- Operating System : Windows 7
- Front End : Asp.net
- Back End : SQL Server
- Development Tool : Visual Studio 2010
- Web Server : IIS (5.1 or Above)
- Browser : Internet Explorer/Google Chrome

Hardware Used:

- Processor : DIV/Dual/Core, Core/I3/I5/I7/Higher
- Hard Disk : 500 GB/Higher
- RAM : 1GB/Higher
- Keyboard : 108 Keys Enhanced
- Mouse : Optical

4.2 Technology

1. ASP.NET

ASP.NET is more than the next version of Active Server Pages (ASP); it provides a unified Web development model that includes the services necessary for developers to build enterprise-class Web applications. While ASP.NET is largely syntax compatible with ASP, it also provides a new programming model and infrastructure for more scalable and stable applications that help provide greater protection. You can feel free to augment your existing ASP applications by incrementally adding ASP.NET functionality to them. ASP.NET is a compiled, .NET-based environment; you can author applications in any .NET compatible language, including Visual Basic .NET, C#, and JScript .NET. Additionally, the entire .NET Framework is available to any ASP.NET application.

2. SQL Server

SQL Server is an application used to create computer databases for the Microsoft Windows family of server operating systems. It provides an environment used to generate databases that can be accessed from workstations, the web, or other media such as a personal digital assistant (PDA). SQL Server 2005 (formerly codenamed "Yukon") released in October 2005. It included native support for managing XML data, in addition to relational data. For this purpose, it defined an xml data type that could be used either as a data type in database columns or as literals in queries.

5. CONCLUSION

Voice Based Public Transport Enquiry System is a needy practical system that is useful in not only providing the bus details, it helps in travel planning and saves enormous timing of the user, which otherwise would have spent in waiting at the bus stations. Unlike with the SMS based systems, in which the user needs to send sms in predefined formats, this system is very simple to use and more accurate.

Moreover there is no requirement of human resource like in the enquiry desks. New stations and busses can be added easily and the details are readily available to the users of the system. It is also a low cost system as no SMS

gateway is required and no persons are required round the clock for running the system. A big organization like Government running public transport service can provide toll free number to the user and make user happy with free call to the system.

Applications, Volume 2, Issue 1, January-February (2015).

- [10] Prachi Khilari, Prof. Bhope V. P., "Implementation of Speech to Text Conversion", IJRSET, July 2015.

REFERENCES

- [1] vaishali pillai, Deeksha Shetty, et al. "Voice Based Enquiry System Using Raspberry Pi", IJRSET, Feb 2016.
- [2] Manjutha, Dr. P Subashini, Dr. M Krishnaveni et al, "Automated Speech Recognition System", IJETA, Apr 2017.
- [3] Gamba, Mattia, Alessandro Gonella, and Claudio E. Palazzi. "Design issues and solutions in a modern home automation system." Computing, Networking and Communications (ICNC), 2015 International Conference on. IEEE, 2015.
- [4] M.Sudhakar, Vandana Khare, D Vijay Krishna Kanth, et al. "speech to text conversion & display using Raspberry Pi", IOSR-JCE, Jul-Aug 2017.
- [5] Bojan Prtvar, Dragan Mihajlovic, Krsto Lazic, Goran Miljkovic, "Voice over BLE Case study: Using Bluetooth LE Remote Controller inside Google's Voice Search framework", 5th International Conference on Consumer Electronics Berlin (ICCE-Berlin). IEEE, 2015
- [6] Gamba, Mattia, Alessandro Gonella, and Claudio E. Palazzi. "Design issues and solutions in a modern home automation system." Computing, Networking and Communications (ICNC), 2015 International Conference on. IEEE, 2015.
- [7] Sneha Upadhyay, Mr. Vijay N. Chavda, "Intelligent System Based on Speech Recognition", IJTRE, May 2014.
- [8] Anand Arokia Raj, Tanuja Sarkar, Satish Chandra Pammi, Santhosh Yuvaraj, Mohit Bansal, Kishore Prahallad, Alan W Black on "Text Processing for Text-to-Speech Systems in Indian Languages" for International Institute of Information Technology, Hyderabad, Indian Institute of Technology, Kanpur and Language Technologies Institute, Carnegie Mellon University, Pittsburgh, USA.
- [9] Cheah Wai Zhao, Jayanand Jegatheesan, Son Chee Loon, "Exploring IOT Application Using Raspberry Pi", International Journal of Computer Networks and