

## Personal Assistance using Artificial Intelligence for Computers

Bharathi K

Assistant Professor, Dept. of CSE  
Vivekananda College of Engineering and Technology  
Puttur, India  
e-mail: [bharathik.cse@vcetputtur.ac.in](mailto:bharathik.cse@vcetputtur.ac.in)

Prathmi Naik V, Shamanth A P, Shreyas S, Shyam  
Thejaswi

UG Scholar, Dept. of CSE, Vivekananda College of  
Engineering and Technology, Puttur, India

**Abstract-** Machine makes life easier so men always keen to develop new machine and software which makes life easier. Since the invention of computers or machines, their capability to perform various tasks went on growing exponentially. Humans have developed the power of computer systems in terms of their diverse working domains, their increasing speed, and reducing size with respect to time. So the objective of the proposed work is to control the computer in easier way that is through the voice commands. The system is based on one of the major application of artificial intelligence “Speech Recognition”. This Software “Personal assistance for computer using artificial intelligence” can be used as personal assistance to user working in personal computer. Software with cognitive abilities similar to those of the human brain so that it can understand human language thinks, infer, reason and learn. It use the android application to take the input from user and the command given by the user will sent through the Bluetooth for the MATLAB interface in computer. The command is processed and the action for specific command is executed. So in simple way through voice command we can do the work in PC

**Keywords-** computer system; artificial intelligence; speech recognition; personal assistance; android application;

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### 1. INTRODUCTION

Machine makes life easier so men always keen to develop new machine and software which makes life easier. Since the invention of computers or machines, their capability to perform various tasks went on growing exponentially. Humans have developed the power of computer systems in terms of their diverse working domains, their increasing speed, and reducing size with respect to time. A branch of Computer Science named **Artificial Intelligence** pursues creating the computers or machines as intelligent as human beings. According to the father of Artificial Intelligence John McCarthy, it is “*The science and engineering of making intelligent machines, especially intelligent computer programs*”. Artificial Intelligence is a way of **making a computer, a computer-controlled robot, or a software think intelligently**, in the similar manner the intelligent humans think. The project is based on one of the major application of artificial intelligence-“Speech Recognition”. This Software-**Personal assistance for computer using artificial intelligence** can be used as personal assistance to user working in personal computer. Software with Cognitive abilities similar to those of the human brain so that it can understand human language thinks infer reason and learn. It performs the task in PC ordered by user and replays the user back. The knowledge of the software increases as the number of times user uses.

### 2. LITERATURE SURVEY

Artificial intelligence has gained tremendous boost in the past two decades, as it has been applied in extensive areas and fields of life. It has been revealed from the profound analysis of the research of that the techniques of artificial intelligence have been advocated by several developers and researchers. One of the major objectives behind this activity was to enhance and improve the software development processes, in order to compete with today’s fast paced and volatile environment. Speech recognition is one of the difficult issues, as it needs to have highly integrated and considerate techniques. Speech recognition, issues are often occurred due to the lack of ample vocabulary. In the current era, the approach of speech recognition has been used in different areas, including automated telephony systems, mobile phones, etc. However, the accomplishment of error free speech recognition, specifically for continuous speech, has remained an unsolved and difficult issue. Recent research on Speaker Recognition<sup>[1]</sup> shows that different contemporary technologies have been developed by the researchers, which have made it possible to attain reasonable accuracy of words. Precisely, emerging approaches and technological paradigms are playing a commendable role in steadily enhancing the integrity of speech recognition. But the fact is these technologies are not capable enough to compete with the accuracy of human listeners. Therefore, it is one of the most challenging tasks for the researchers to design and develop flawless and highly efficient speech recognition techniques. In such circumstances, the approach of artificial intelligence can be considered as one

of the greatest opportunities, in terms of recognizing the patterns of speech, accurately. It is due to the fact that artificial intelligence incredibly transforms the speech into well structured algorithms. Most important stages, which are involved in speech recognition through artificial intelligence includes representation of speech units, formulation and development of recognition algorithms, as well as demonstration of correct inputs (speech).<sup>[2]</sup>In the past decade, much works have been done in the field of speech recognition and speech synthesis for communication. One promising study at California State University at Northridge explored the performance of teaches disabled college students using voice recognition technology to complete the university's written proficiency exam. With the use of this innovation, the learning disabled students achieved the same distribution of scores on the exam as their nondisabled peers.<sup>[3]</sup>Another exploratory study focused on a single subject-a sixth grade student with learning disabilities. Wetzel was interested in whether middle school students could learn to use a voice recognition system, in this case IBM Voice Type, and whether this system would enhance their communication skills. Wetzel found that the student was able to learn to use the software, but that difficulties with the system's recognition accuracy and the complexity of editing compromised this student's success.

Going through the several internet articles we can generalize that-“The glamour of speech recognition is that, like a human, a machine can act as a personal dictation service. This should save us time and improve our interactions with machines. “Speech recognition” is a glamorous term because it suggests that language is being understood. That’s what speech is about — sending ideas by voice. A better term would be “sounds to text,” to describe what today’s statistical systems are doing. The compromise to focus on engineering has produced limited results, but we need machine interaction to be much more natural.”.

### 3. COMPARISION WITH THE EXISTING SYSTEM

There are several applications based on speech recognition but most of them are not compatible with the entire platform and also doesn’t work on artificial intelligence domain. For example,

- Siri - works in Ios
- Cortona - works in Windows 10
- Google Now, Google Voice search - works in Android Smart phones.

And many more are most popular existing speech recognition systems. Our system mainly works as personal assistance for all the versions of Windows Operating System. Thus it serves as the general purpose system

### 4. PROPOSED SYSTEM

“Personal assistance for computer using artificial intelligence” is intended to be user friendly interface that accepts multiple voice commands to perform respective action in PC and it reply back to user. It works on Artificial intelligence domain so the knowledge of the software gradually increases with the frequent usage. For example if user given command to open a browser as voice input, it will open the browser in the computer and also reply that – “opening the browser”.

### 5. OVERVIEW OF THE SYTEM DESIGN

Main modules of our project are shown in diagram:

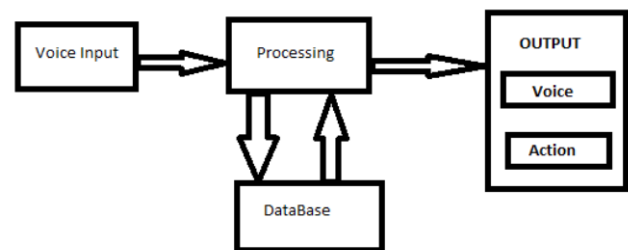


Figure1: Functional requirement of the

**Voice Input:** The user will give the commands in terms of voice to the android application in users mobile which will convert the speech in to text and pass the data through the Bluetooth.

**Processing or Speech Recognition:** This is the main phase of the project, using the program we will try to recognize the given input and it should match with the predefined commands which present in the database. During the process we will recognize the input and actually what the user asking to do. According to the input interpret the commands and process the command.

**Output:** Output phase gives the final outcome to the user; here we are concentrating on two types of outputs:

- Voice
- Action

Voice output is the description about the action. The task specified in the voice input will be done in computer for this we say the term action.

**Database:** We use<sup>[4]</sup> MATLAB to write the code in which the MATLAB language works with a single object type: the MATLAB array. All MATLAB variables (including scalars,

vectors, matrices, character arrays, cell arrays, structures, and objects) are stored as MATLAB arrays.

## 6. APPLICATION AREAS

The system can be used in various fields of development where speech recognition is of vital important. Such fields to which this system can be extended are:

**Home automation:** System intending to control all lights and electrical appliances in a home or office using voice commands.

**Data security:** Verification to provide secure and authorized data transmissions between networked computer systems.

**Blinds and visually impaired people:** several generations of graphical interfaces (Xerox, Apple, Microsoft) have brought less or no benefits for the blind users. Some elderly people still recall the times of DOS and command line, when both the system and application software levels were almost equally accessible. Nowadays, multiprocessor operating systems are extremely complex and perform hundreds of routine tasks which are not necessary to be supervised or adapted for the user control at all. Scientific PDF Document Reader with Simple Interface for Visually Impaired People, Automatic Annotation of Geographic Maps, Fully Automatic Braille Note Production System on suitable commands. There are many such fields where this system can gain its importance.

## 7. RESULT

Outcome of the proposed system is the action mentioned in the command which is given by user in voice mode. The android app convert user speech into text and pass that through the Bluetooth the string obtained by MATLAB and it will process and give the actions and voice from microphone that user can understand what is the action.

## 8. CONCLUSION AND FUTURE ENHANCEMENT

Going through the several internet articles we can generalize that—"The glamour of speech recognition is that, like a human, a machine can act as a personal dictation service. This should save us time and improve our interactions with machines. "Speech recognition" is a glamorous term because it suggests that language is being understood. That's what speech is about — sending ideas by voice. A better term would be "sounds to text," to describe what today's statistical systems are doing. The compromise to focus on engineering has produced limited results, but we need machine interaction to be much more natural." The normal user can use the computer in simpler way in his daily life. For blind people it's a boon to use the computer in effective manner.

Currently we are giving for limited number of command for computer control through the voice; it can be extended for whole computer control by enhancing the program. Applying specific algorithms like DSP will increase the accuracy of the processing. The system can easily be extended for the Home automation project by adding the relevant hardware devices.

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