

Best Speech

RECOGNITION

Software



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1 Abstract

The purpose of this paper is to inform consumers about different types of speech recognition software. The following page has organized information about speech recognition as well as software comparisons of some of the leading providers in the industry. Years ago, the idea that one could control a machine simply by speaking to it was a thing of science fiction. Today, this technology is possible and readily available for mass markets. The software ranges from the simple, which consists of simple voice-to-text features, to the more complex software designed for businesses, with the ability to understand complicated commands and fill out forms on the internet. Suitable for businesses, students, or home use, speech recognition software can make daunting tasks simpler. Although most of these software providers promote their software as a way to boost productivity there is some evidence supporting the contrary argument. Decide for yourself, can speech recognition software make things easier for you?

2 About Speech Recognition Software

Advancements in speech recognition software have altered the way people use computers and other machines. The development of speech recognition technology began in the 1950s with successful attempts to have a computer understand spoken word numbers. This system was created by Bell Laboratories and was called the Audrey system. About ten years later, IBM created a machine that could understand sixteen English words.

Over the next two decades, significant strides in this technology were made which resulted in [machines that could understand over a thousand words](#). In the 1990s, speech recognition software became more accessible and usable for the mass market. Dragon was the first company to produce such a product available to the public for a price of nine thousand dollars. Things have changed significantly since that first attempt at integrating speech recognition software into everyday life.

Today, speech recognition software can even be downloaded free or come standard with cell phones. These types of software basically work by taking natural language, spoken words or commands and translating them into a language easily understood by the computer. This occurs when the computer picks up your voice through a microphone and then [converts your voice into an analog signal](#). It is then processed by your computer's sound card and from there is translated into a binary code so that your computer can understand it. Through that process, the software either turns the voice to text or uses it to carry out the consumers command.

Speech recognition software can help a wide range of people from the busy teenager, to the disabled. Disabled individuals, who are unable to operate computers through mouse or keyboard use, can now control their computers with ease and confidence. Software is now available that supports completely hands-free controlling from everything to computer games to sending important business emails. The option to ask your computer how to perform tasks can help those who have trouble using computers.

Speech recognition software can be incorporated into all of our lives. We have all seen the commercials for speech recognition software, a depiction of a college student writing an entire paper just by speaking into their PC, or a busy mom asking Siri to set a reminder for an important event. Speech recognition is a part of many people's everyday life and maybe it is time for you to discover how it can make your life easier.

3 How to Choose Speech Recognition Software

There are a few key things to keep in mind when choosing a speech recognition software:

- Do I need this software for work or home use?
- Do I need a personal assistant type of software that will be able to help me on the go?
- How important is voice to text accuracy?
- Am I willing to spend a lot of money on this software?
- What type of operating system do I have?
- Do I want to use this software for gaming?

Ask yourself these questions before purchasing speech recognition software. Depending on your specific needs, you may want to purchase a high-end software with guaranteed accuracy, or speech recognition software primarily used in your home for entertainment purposes. For quick notes and information on the go, an app for your smartphone could be perfect. There are many apps available at app store. Speaktot and Vlingo are among the highest rated free virtual assistant apps. There are many different software providers, some software is designed for specific operating systems or devices, so be sure to read the fine print.

3.1 Standard Features of Speech Recognition Software

- Supports Multiple Languages
- Simple Dictation
- Grammar Checks
- Easy Installation and Set up
- Ability to Understand a Wide Range of Accents and Dialects
- Commands Compatible

3.2 Definitions

Acoustic Model – This is used to understand speech and commands in speech recognition software. An audio recording of a word complied with a text transcript of that same word creates representations of the way letters and words sound.

GPL – Stands for General Public License. It is a software license that gives the consumer the right to use and modify the software for personal or professional use in whatever way they see fit.

Voice Users Interfaces – The interface that allows machines to be controlled by a human voice. The platform that processes verbal commands and translates them into a language a computer can understand.

Voice Commands – Requests verbalized by the user of the software. For example: Open email. Call Dave. These commands can be easily followed by many of the voice recognition software available today.

Dictation – The process by which your spoken words are recorded into a text document.

Language Model – A way of determining what words or letters are being spoken by the use of a probability formula.

Natural Language – Refers to organic languages spoken among humans as opposed to unnatural languages, for example the language in which computers process commands.

Speech Accuracy – The measuring of how precise the software is when it comes to understanding and dictating exactly what the user says.

Hands-Free Computing – The process of completing computer tasks without having to physically touch the mouse or keyboard.

Personal/Virtual Assistant – In the world of speech recognition software, the term “personal assistant” or “virtual assistant” refers to software that has the ability to replace or act as a personal assistant to the consumer with processes such as setting appointments, taking notes, and fact checking.

Speech Corpus – All available files, spoken word files and text that are used to create an extensive database of words recognized by the software.

Voice-to-Text – The process in which a person’s spoken words are transformed into text in a text document, email, or form.

Transcription – Turning human language into computer language. It is the way a computer understands natural language.

3.3 Models

3.3.1 VoxForge

Pros

This software is free and readily available as an online download. It is complete with standard dictation and transcription features.

Cons

The software is basic and understands limited commands.

Conclusion

VoxForge is good for basic talk to text needs. The software works by just simply translating your voice, which is spoken through a microphone, or recording device and then turning it into text. This program works with all operating systems whether you have a Macbook or a Windows Vista.

If you do not need all the extra features and are just looking to turn your voice into text documents, this is the right software for you. You can download the software right from the website and have it up and running in a matter of minutes.

Best of all, this software is totally free. Other talk-to-text dictation software can cost a couple hundred dollars. Installation is quick and you can get started on that paper, email, note recording etc. right away.

3.3.2 Dragon

Pros

This software does it all from dictation to guaranteed accuracy when it comes to voice-to-text. Ideal for students or business professionals.

Cons

Higher costs.

Conclusion

Create or edit documents with this perfect for school or work software. Dragon Speech Recognition software works with the users' voice over time and can improve 20% to eventually reach a 99% voice-to-text accuracy. This software very quickly translates your spoken words into text documents.

It is pricier than some of the other speech recognition software out there. Although their most expensive software can cost almost a thousand dollars, there are cheaper options. They have sales from time to time and offer more basic packages that start around a hundred dollars. Online tutorials and easy installation make the set up for this software quick and simple.

There are many different types of software offered by Dragon, some geared more towards specific industries such as the medical industry, while others are best for students and writing papers.

3.3.3 Mac Speech Scribe

Pros

Offers grammar and spell check, along with accurate voice-to-text. Which makes it perfect for

writing papers and taking down notes.

Cons

This software is only available for Mac users.

Conclusion

MacSpeech Scribe is ideal for students or businessmen and women who take many notes, or write long papers. The speaker can record their voice with a variety of devices ranging from a digital recorder to a cell phone. By transferring their recorded voice file to their computer via USB, the user can convert information recorded on the go into text files. This software can translate the audio reordering into text files. Whether you are recording a few quick notes or recording an entire paper, this program will work for you. It is a good way to keep your files organized.

It is a fairly basic software, which is good because it means it is user-friendly, but it is limited in the commands it can understand and is best suited for simple text document creation. Unfortunately, this software is available only for Mac users. If you have a Mac and are looking for a straightforward voice recognition software to turn your voice into text, this is a good option for you.

3.3.4 Siri

Pros

Comes free with the iPhone 4s, iPhone 5, iPad with Retina display, iPad mini, and the 5th generation iPod touch.

Cons

Not as user-friendly as it is marketed to be. Issues reported with understanding accents and different dialects.

Conclusion

Siri was created for the new generation of iPhones and other Apple products. The goal of preinstalling this software onto these products was to make Siri a part of consumers' everyday life. It is designed to make tasks simpler and to save time.

Send text messages, look up directions, check facts online, set reminders, set alarms, add to your calendar and more, all by voice with the help of Siri. This can be useful at times when scrolling through your contacts or typing out text messages is not safe. Having the option to look up directions, text, or make calls when you are driving is probably one of Siri's most usable features.

On the other hand, some of the features offered by Siri are not always practical for the everyday consumer. One of the most common complaints when it comes to this software is the inability to

understand minor changes in a person's pronunciation. The marketing for Siri is well done, but maybe this software is not as helpful as we all expected.

3.3.5 Speaktoit

Pros

Look up information, directions, send text messages, update Facebook statuses and more.

Cons

Only available as an app for smartphones.

Conclusion

Looking for a Siri type software, but don't have an iPhone? Speaktoit is a good app for your phone if you are looking for a virtual assistant that makes using your smartphone easier. This software can help you complete basic tasks, such as placing a phone call or sending a text message. It can also help you with more complex operations such as looking up information, and setting reminders for important dates.

It is advertised as an alternative to the iPhone's Siri software for android phones, but it is also available for iPhones. This is available free in the app store and takes minutes to download. Although this software is free and can be helpful for those who are not totally comfortable using and operating a smartphone, most of the features seem to be obsolete.

Much like with Siri's software, Speaktoit may not be practical. For many people using a smartphone the amount of time it would take them to send a text or set an alarm by touch is so minimal that it eliminates the need for a virtual assistant. It may take more time to understand the software and to get the commands correct than it is worth.

3.3.6 Windows Speech Recognition

Pros

Free software. No installation is required.

Cons

Only available for Windows users.

Conclusion

Perfect if you are looking for an efficient way to control your computer with minimal or no keyboard and mouse use. This software allows the user to write text documents such as papers or notes with their voice. It also allows the user to browse through web pages, write emails, and fill out

forms on the internet.

Another useful feature is the ability to ask the software for help. This software comes with the standard command compatible feature but offers an additional command feature for those who need extra assistance. Users can simply ask the software “How do I...?” This will come in handy for those new to the software or new to computers in general. The program is a good alternative for those interested in MacSpeech Scribe, but do not have a Mac. It offers the same basic voice to text features.

Only available for Windows users, but unfortunately that does not mean all Windows users will have this software preinstalled on their computers. Only Windows computers with Windows Vista or newer versions come equipped with Windows Speech Recognition.

3.3.7 VoiceFinger

Pros

Inexpensive software, with an easy online download. Ideal for gamers

Cons

Only available for windows users and does not offer grammar checks.

Conclusion

This software allows users to control their computers with absolutely no physical contact. Everything can be controlled by voice. Other software require the occasional click, or transfer between two applications, but not VoiceFinger.

The complete ability to control the program by voice makes it ideal for users with disabilities who are unable to control a computer by traditional methods of typing on a keyboard or clicking their mouse. The software is also marketed to online gamers. It is ideal for serious gamers who need to multitask. VoiceFinger can control games by voice, and with instant understanding and transcription, there is no lag time between the command and the completion of the task.

The software does take some getting used to. There are specific commands required to control both the mouse and the keyboard. The mouse moves based on a grid system, the user has to tell the computer which coordinates they want the mouse to be at. The keyboard is a little more straight forward with commands like “press down” “press right” and “press right” As long as you have the time to adapt to the program, it is a cheap and effective software that can improve your overall computer experience.

3.3.8 Tazti

Pros

Control and play games using only your voice.

Cons

Only available for Windows users.

Conclusion

Tazti is a cheaper alternative to bigger name brand speech recognition software providers. Although it is less expensive, it does not cheap out on the important features. Create documents and send emails with your voice, shuffle through songs on your iTunes and even play games on your PC.

Tazti is command capable, which means it can perform Google searches as well as switch from one application to another. Additionally, the user can create custom commands. The consumer can create up to seventy-five custom commands that do not come standard with the software. This works by recording your desired command and then associating it with a webpage, file, or program through the software prompts. For example, you can create the command “open work email” and assign it to a different email interface than your personal email address that would open when you command, “open email”.

As of right now, the software is only available for Windows Vista, Windows 7, and Windows XP. The correct commands may also take some time to master but for those willing to spend the time this is a good and inexpensive way to control your computer by voice.

3.3.9 VoxCommando

Pros

Play games, watch movies, scroll through your iTunes. Also has the capability to read your emails aloud.

Cons

Not suited for workplace use.

Conclusion

If you are looking for speech recognition software to use for home entertainment purposes, then VoxCommando might just be perfect for you. This software is also suited to work with computer games, play songs from iTunes, watch movies and Skype all with your voice.

VoxCommando is not designed for use in the workplace or for students. It does not offer grammar checks and can also only read or dictate emails from Gmail. Instead, this software is designed as a fun and easy way to control your computer from home. The software comes with the option to customize commands, and like Dragon, becomes more accustomed to the users voice and grows

more accurate over time.

If you are still unsure if VoxCommando is right for you, don't worry. They offer a free trial on their website. The trial works by allowing the user to try twenty-five commands. After the twenty-fifth command, the trial expires and you are free to decide if this software is right for you or not. The software is also advertised as very user-friendly and states that with a good microphone, consumers can begin using the software immediately after installation. There are examples and tutorials on the website for those who may need a little extra help familiarizing themselves with this new software.

4 Speech Recognition Software Matrix

4.1 Capabilities

	VoxForge	Dragon	Mac Speech Scribe	Siri	Speaktoit	Windows Speech Recognition	Voice Finger	Tazti	Vox Commando
Mac Compatible	yes	yes	yes	no	no	no	no	no	yes
Linux Compatible	yes	yes	no	no	no	no	no	no	yes
Windows Compatible	yes	yes	no	no	no	Yes-windows 7/7+	yes	Yes-windows 7, windows vista and windows XP	yes
Large Speech Corpus	yes	yes	yes	yes	yes	yes	no	yes	yes
Customize Voice Options	no	yes	yes	yes	yes	no	yes	yes	yes
Speech Verification	no	yes	yes	yes	yes	yes	no	no	no
Dictation	yes	yes	yes	yes	yes	yes	yes	yes	yes
Services for Mobile Phones	no	yes	no	yes	yes	no	no	no	no
Grammar Checks	yes	yes	yes	yes	yes	yes	yes	yes	no
Personal Assistant	no	yes	yes	yes	yes	yes	no	no	no

Multiple Languages Support	yes	yes	yes	yes	yes	yes	yes	yes	yes
Command Compatible	no	yes	yes	yes	yes	yes	yes	yes	yes
Free	yes	No	no	Free with purchase of iPhone 5, iPhone 4S, iPad with Retina display, iPad mini, and iPod touch (5th generation)	yes	yes	Free version available/\$20 advanced version	no	no

4.2 Pricing

VoxForge	Dragon	Mac Speech Scribe	Siri	Vlingo	Speaktoit	Windows Speech Recognition	Voice Finger	Tazti	Vox Commando
Free	Range from 100-900	149.99	Free with purchase of iPhone 5, iPhone 4S, iPad with Retina display, iPad mini, and iPod touch (5th generation)	Free app download with any smart phone	Free app download with any smart phone	Free with Windows	Free version and 20\$ advanced version	39.99	Inquire for Pricing

4.3 Contact

Provider	Vox Forge	Dragon	Mac Speech Scribe	Siri	Vlingo	Speaktoit	Windows Speech Recognition	Voice Finger	Tazti	Vox Commando
Website	http://www.voxforge.org/	http://www.nuance.com/dragon/index.htm	http://www.nuance.com/for-individuals/by-product/dragon-for-mac/mac-speech-scribe/index.htm	http://www.apple.com/ios/siri/	http://www.vlingo.com	http://www.speaktoit.com/	http://www.microsoft.com/enable/products/windowsvista/speech.aspx	http://voicefinger.cozendey.com/	http://www.tazti.com	http://voxcommando.com
Contact Email						contact@speaktoit.com		voicefinger@cozendey.com		
Contact Page		http://www.nuance.com/company-overview/contact-us/index.htm	http://www.nuance.com/company-overview/contact-us/index.htm	http://www.apple.com/contact/		http://www.speaktoit.com/contact.html	http://support.microsoft.com/contactus/?ws=mscom		http://www.tazti.com/contact_us.html	