

Paper Title: Language and Technology in Voice-Recognition Systems  
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Taken English? Yes English as Second Language? Yes  
Feedback Areas: Topic Development, Focus/Thesis Statement  
Paper Goals: The role of language and technology in voice-recognition and/or voice-production software The role of language and technology in education The role of language and technology in health care Ethical problems of language technology

## Proofing Summary:

Hi Ana,

I'm David, your composition tutor for the Writing Center. I have reviewed your submission and have several suggestions that will help you revise. Please feel free to contact us through a live chat session with any follow-up questions or for any clarification.

Below, you will find a revision plan along with margin comments within your paper. Use my suggestions as a starting point for the revision process. Also, please note that I have not edited or proofread the entire draft for minor errors, but rather, focused on overall concerns such as idea development. For a complete look at your grammar and punctuation, please use the Grammarly software available under "Writing Center" in your classroom.

You have done a nice job writing about this complex subject. You have performed extensive research and you have compiled it into a narrative.

For your revisions, I suggest focusing on:

1. Thesis Statement
2. Organization
3. References
4. Mechanics

I recommend that you create a thesis statement and place it near the beginning of the paper. Typically it is good to place the thesis statement at the end of an introduction paragraph. The thesis statement should present the purpose of the research paper and then list the key points that will be used to support the purpose.

Be careful to fully develop each topic paragraph. Many of your paragraphs are short, but they are related to previous paragraphs. Be sure to group related topic statements together into the same paragraph.

Be careful to format the reference detail per the APA style. I have provided a link on the references page which provides the detailed format requirements.

Be careful to keep sentences focused. Some of your sentences run on too long and lose the ability to focus on the intended point. Be careful of sentence fragments. These are clauses that can not stand alone because they do not communicate a complete thought. Be careful of word choice, especially word form as it relates to the context of the sentence. Be careful to avoid redundant points within a sentence or paragraph. Be sure to indent the first line of each paragraph.

Good luck in the course, and I hope we can help you with your next assignment.

Running Head: LANGUAGE AND TECHNOLOGY IN VOICE-RECOGNITION SYSTEMS 1

Language and Technology in Voice-Recognition Systems

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LNG 206 Languages and Technology

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May 1, 2017

## LANGUAGE AND TECHNOLOGY IN VOICE-RECOGNITION SYSTEMS

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Voice recognition is an evolving technology for most languages except for English where the precision is higher compared to other languages but over a period it will become very effective for all languages. Even though the local accents which change from one place to another can throw challenges to the voice recognition. However, Voice Recognition System can provide a capable mechanism for human to system interaction. By a large, exchange of data among human and system used to be done via input devices such as keyboard, joystick, touchscreen or mouse. This approach is going to change with the progress made by voice recognition software in future. The approach would be faster and more exciting if the system could just convert the spoken words with accuracy, give desired results by processing the information and language used. Another aspect of voice recognition technology is to make easy for people with physical disabilities to perform their day to day tasks simpler. There has been research going on for past few decades in this field, but in last few years there has been exponentials growth in voice recognition systems by leaps and bounds and with the advances made in Deep Neural Network technology which is applied successfully along with language semantics by corporates Apple, Microsoft, google etc. in their voice recognition systems which establishes the fact that we are heading in the right direction where will have a perfect system which will exhibit intelligence just like humans or probably surpass them.

Be careful to indent the first line of each paragraph in order to comply with the APA Style.

Be careful to keep sentences focused. I recommend that you create two sentences here in order to better focus on the points in each.

Be careful to avoid sentence fragments. This clause does not convey a complete thought on its own. I recommend joining it to the previous sentence.

Be careful to avoid redundant statements. These two expressions mean the same thing and do not need to be mentioned twice in the same sentence.

Be careful of word form. The correct word form here should be the noun, corporations.

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This paper endeavors to give a memorable point of view on key developments that have empowered advance in speech recognition and dialect understanding and quickly audits a few innovations which act as turning points and a set of the challenges that lie in front of us (Juang & Lawrence, 2004, p. 2). Various languages by and large make it conceivable to express a similar meaning in various distinctive ways, incorporating contrasts in how the

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general message to be communicated is allocated in semantically feasible structure, and the extensive variety of syntactic developments and lexical decisions which can be made using those available semantic structures (Juang & Lawrence, 2004, p. 10).

Below is a brief account of the progress of voice recognition technology over the past 40 years. In the 1970's we could perceive medium vocabularies utilizing straightforward template-based, pattern recognition strategies. (Juang & Lawrence, 2004, p. 20) Back in the eighties, voice recognition was described by a change in paradigm from the more instinctive layout based approach towards a more thorough measurable demonstrating structure. Although the fundamental thought of the covered-up Markov Model(HMM) was known and seen from the get-go in a few of the research facilities (Juang & Lawrence, 2004, p. 20). In the 1990's we could accumulate expansive vocabulary frameworks with unconstrained language models, and other syntax models which were used for understanding continuous speech recognition (Juang & Lawrence, 2004, p. 10). By 2001, voice recognition technology ranked high in terms of precision, and, close to the finish of the decade, the innovation's advance appeared to be slowed down peaking up again in recent years. The frameworks did well and kept on developing as the Internet boom continued to explode.

The prior experiments to develop frameworks for voice recognition software were guided by the theory of acoustic-phonetics, which characterize the phonetic constituents of a language spoken and try to clarify how they are acoustically acknowledged in a voice expression (Juang & Lawrence, 2004, p. 9). "Some of the widely-used speech recognition systems are Types of Speech Recognition Systems. Some of Speaker Dependent Systems,

Be careful to articulate all of the words necessary to convey your intended thought. It appears that a word is missing here. Did you mean "... 'these' types of speech recognition...."?

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Speaker Independent System, Isolated Word Recognizer, Connected Word Recognizer, and Spontaneous Recognition System” (Nitin & Sandeep, 2015, p. 1).

The arrangement of linguistic grammatical principles was called a language model such as n-gram Model. An n-gram is a continuous sequence of n items from a given sequence of text or speech which characterized the likelihood of the event of a requested arrangement of n words, was the most regularly utilized variation.

Take for example, the sentence "*Impact of language and technology in voice recognition systems*".

Suppose if is set  $n = 2$ , then the n-grams would be:

- Impact of
- of language
- language and
- and technology
- technology in
- in voice
- voice recognition
- recognition systems

the above sentence in the example has 8 n-grams (when is set to 2 it is called as bigram).

Similarly, whenever  $N=1$ , it is called as unigrams and this is basically the individual words in a sentence. Whenever  $N=2$ , this is called bigrams and when  $N=3$  this is called trigrams and so on (Jurafsky & Martin, 2014, Ch. 4 p. 2).

You have made good use of topic introduction sentences. You did a good job describing these complex concepts.

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The N-gram model, like numerous factual models, is subject to the training corpus. One ramification of this is that the probabilities regularly encode certainties about a given training corpus. Apart from this ramification, N-grams make a superior job of demonstrating the training corpus as we increment the estimation of N (Jurafsky & Martin, 2014, Ch. 4 p. 9).

Computational linguistic such as the examination of spoken words, the interpretation of and speech starting with one dialect then onto the next, the utilization of human dialects for correspondence amongst designed system's and individuals, and the simulation of semantic and lexical theories that various languages incorporate (Fromkin, et al, 2011 p. 407). It also elaborates about computational etymology which is linked with the communication amongst language and system by slicing and dicing it, from phonetics to pragmatics, from spoken expressions to written structures (Fromkin, et al, 2011 p. 407). Also how for processing language comprehensions successfully requires a lot of operations called "parallel processing"— including the accompanying sub-operations: dividing the ceaseless discourse motion into phonemes, morphemes, words, and phrases(Fromkin, et al, 2011 p. 407).

Speech recognition frameworks can be isolated into a few diverse classes by depicting what sorts of articulations they can perceive such as “Isolated Words, Connected Words, Continuous Speech and Spontaneous Speech, and details about the three approaches used for speech recognition such as Acoustic Phonetic Approach (One of the initial path taken to deal with voice recognition depended on discovering acoustics and giving suitable tags to the sounds generated.), Pattern Recognition Approach (The essence of this approach is it utilizes an comprehensive structure and sets up predictable speech patterns using model

Good topic introduction and concept introduction.

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such as HIDDEN MARKOV MODEL.), and Artificial Intelligence Approach(This is a composition of acoustic phonetic approach and pattern recognition approach.)” (Anusuya & Katti, 2009, p. 184).

Speech is the essential and the most advantageous methods for correspondence between individuals. “Regardless of whether because to technological curiosity to build machines that imitate humans or desire to automate work with machines, research in speech and speaker recognition, as an initial move toward natural human-machine communication”. (Anusuya & Katti, 2009, p. 200).

The research also explains how the voice recognition is an innovation which is constantly experiencing advancement and adjusting (Anna & Greg, 2011, p. 201). It conveys striking points of empowering writers to quickly deliver vast amounts of content independently of their capacity to sort. For example, it is observed that dictating via voice recognition software is a simple and efficient strategy to translate information and took considerably lesser time than manually written questionnaires (Anna & Greg, 2011, p. 201).

The paper specifically emphasizes on how voice recognition has made advances in the smartphones using algorithms particularly Deep Neural network, Pattern Recognition Approach, and Artificial Intelligence which has made the voice recognition systems quite interesting (Anusuya & Katti, 2009, p. 200). Algorithms based on neural nets have been proposed to address speech recognition tasks which humans perform with little apparent effort. Neural systems are a kind of Artificial Intelligence which simulates human nervous systems. For instance, at Apple, since incorporating Neural networks Siri has increased its precision significantly. Before that, Siri identified human voices utilizing simpler Artificial

Be careful to keep similar topic information combined into the same paragraph. All of these paragraphs are related to the topic introduced on the previous page and can be combined.



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Intelligence systems that have been around for a considerable length of time. (Juan, 2000, p.74)

For example, Siri the voice recognition software developed by Apple as a virtual aide that utilizes voice as an input to perform activities, for example, perusing and answering to instant messages, making calls and updates in the date-book, opening applications, proposing eateries, and looking the Internet while communicating with the client. Although Apple initially pioneered it but it was later incorporated by Google, Samsung, Sony, Microsoft etc. (Orner & Rebecca,2017, para 3).

This application made use of complex algorithms such as Deep Neural Network to recognize human dialect and translate meaning by showing signs of improvement over the course of time, with the true objective being that the virtual assistant may soon have the capacity to realize what a client needs before the client even ask (Orner & Rebecca,2017, para 4).

Take for instance Sony Smartphone's, which have incorporated with voice recognition software that would give the name and singer details based on the song played on radio or on some other music source or in the background of the movie running on television. Even if there is a noise or some distortion like a song is played in a public place where there is lot of background noise, the application can get the correct song accurately in most tested scenarios. All these applications work fine when the software is used by a regular user (owner), as the voice recognition software learns based on the pattern recognition and is adjusted to the user thus giving accurate results. But if we have a different user operating the same application than the results and accuracy varies.



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To conclude, we have made significant progress in the Voice recognition technology, even though for multi-voice communication in other languages such as French, Chinese etc. still creates the technical challenge for software to deal with as the sound wavelengths are different in each language. But as people start placing more trust on voice recognition systems, it's application will move into wide range of domains/fields. It is not difficult to envision a not so distant future when we will be instructing using voice recognition apps to command them to switch on or off appliances which are connected via the internet of things. Thus, using voice recognition technology language commands will become our go-to guy to get most if not all things done for us even though we are thousand miles away at a holiday destination but we will have a direct control on our home like never before.

This is a good conclusion of your topic. You have reinforced your initial claim.

## References

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Be sure to follow the APA style format on the References page. The author's last name should be listed first. Check out this link for details on formatting the reference entries. For help with citing in your reference list, click here: <https://awc.ashford.edu/cd-apa-reference-models.html> or see these samples here: <http://tinyurl.com/jl7n34a>

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