*Journal of Advances and Scholarly Researches in Allied Education*
*Vol. 15, Issue No. 11, November-2018, ISSN 2230-7540*

# An Overview on Voice and Speech Recognition Motion Techniques

**Rajendra Kumar Mahto[1]* Dr. Shankar Rammoorthy[2]**

[1] Research Scholar, Swami Vivekananda University, Sagar (MP)

[2] Professor, Computer Science Department, Swami Vivekananda University, Sagar (MP)

***Abstract – From the outcomes obtained its proficiency is satisfying it was concluded that the algorithm actualized in Lab View is working effectively. Be that as it may, since the algorithm does not extract the vowels from the speech, the value obtained for Formant 1 weren't totally right as they were obtained by processing all the samples of the speech. It was also seen from trials that by increasing the unvoiced part in the speech, similar to the sound of _s', the value of pitch increases consequently hampering the sex detection in case of Male samples. Likewise by increasing the voiced, similar to the sound of _a', decreases the value of pitch yet the framework takes care of such plunge in value and results were not affected by the same. Also, extraordinary speech by the same speaker talked in the near to identical conditions generated the same pitch value establishing that the framework can be used for identification of speaker after further work.***

----------X----------

## INTRODUCTION

Speech Recognition is the major type of communication among human beings. Speech recognition is the way toward converting the speech signals created by human being to machine recognizable frame by means of the algorithm created by the client. There can be distinctive sorts of speeches.

**ISOLATED WORD** In the case of isolated word, the utterances are very on the two sides of the sample window. This type of speech recognition accepts words or single utterances at once

**CONNECTED WORD** In this type of speech recognition, words are separated by pauses. Like isolated word speech recognition, the basic speech recognition unit is the word.

**CONTINUOUS SPEECH** In continuous speech recognition, words are connected together instead of being separated by pauses. Continuous speech recognizers allows client to speak almost naturally, while the algorithm determine the continuity. Automatic speech recognizer with continuous speech capabilities are probably the most hard to create because they use special method to determine utterance boundaries. Subsequently in this method, boundary information about words, surrounding phonemes and rate of speech impact the performance.

## SPONTANEOUS SPEECH

At a basic dimension, it tends to be thought of as speech that is natural sounding and not rehearsed. This sort of framework ought to be able to handle a variety of natural speech feature, for example, words being run together. Automatic speech recognition is gaining importance these days as the vast majority of the cell phones are worked with this application that make the client easy to make a call or type a message Automatic speech recognition framework contains the following modules

1. Speech signal acquisition
2. Feature extraction
3. Acoustic modeling
4. Language modeling

## SPEECH SIGNAL ACQUISITION

In this module, sound recording is done. The motivation behind this module is to capture the most ideal signal.

## FEATURE EXTRACTION

Feature extraction is the most important advance in automated speech recognition. The performance of the recognition of the speech very relies upon the

feature extraction phase. The speech feature extraction in a categorization issue is about reducing the dimensionality of the input vector while maintaining the discriminating intensity of the signal. As we probably am aware from fundamental formation of speaker identification and verification framework, that the quantity of training and test vector required for the classification issue develops with the dimension of the given input so we require feature extraction of speech signal. Researchers have used many feature extraction techniques like PCA, LDA, ICA, linear prescient scoring and so on.

**ACOUSTIC MODELING**

This is the main component of an Automatic Speech Recognition framework. This model takes care of the performance of the framework. This particular module takes care of the talked phonetics. This module in particular uses the audio recordings of the speech and utilize the text contents to gather them into a statistical representation of the sounds that creates the word.

**LEXICAL MODELING**

Lexicon is a module in which pronunciation of each module is structured according to the given language. Various combinations of speeches are defined to give valid words for the recognition.

**LANGUAGE MODELS**

This module is trained on many words. This module is produced so the connection between the words in a sentence is planned with the assistance of pronunciation dictionary.

Automated speech recognition is an emerging strategy that helps in recognizing the human speech by the machine. There are numerous research going on in building a model for recognizing speech and converting into text. The paper summarizes the various kinds and methods pursued.

**DISCUSSION**:

Memory scores of the experimental gathering after receiving the Neurobic Exercise to be higher than before receiving the Neurobic Exercise. This hypothesis has been bolstered as the average memory scores of the experimental gathering after receiving the Neurobic Exercise Program were statistically and significantly higher than before receiving the Neurobic Exercise Program at a dimension of $p < .001$. In addition, the researcher compared the distinctions in mean memory score on memory aspects for the experimental gathering using the Mini-Mental State Examination method - Thai 2002 and the Memory test. As the consequences of the greater part of the memory scores on memory aspects of Mini-Mental State Examination were observed to be higher aside from on composed command, writing and visuoconstruction. The memory scores in memory aspects of the Memory test too were observed to be higher with the exception of on drawing the assigned. In the Neurobic Exercise Program, the experimental gathering was encouraged to utilize six faculties of sight, hearing, smelling tasting, touching and emotional sense and breaking a routine activity in a surprising way to strengthen of nerve cell stimulation [12]. Neurobic Exercise Program in each sense can activate brain functions and nerve connections as mentioned underneath:

1) Using the feeling of vision by closing the eyes, identifying things and non-verbal communication. These will stimulate occipital flap, which forms visual information and diencephalon (thalamus and hypothalamus) that the activities in the cortex which is important in relaying tactile information to the cerebral cortex. All tactile information (aside from olfactory information) will sift through unnecessary tangible information and synchronize important tactile information in the thalamus.

2) Using the feeling of hearing by listening to music, facilitates temporal flap and limbic framework which are involved in emotion, motivation, and emotional association with memory. The limbic framework plays its job in the formation of memory by integrating emotional states with put away recollections of physical sensations.

3) Using feeling of smelling by smelling essential oils, aroma and herb, for example, lemon grass, garlic, red onions, lime, mangos, roses, jasmines, espresso and tea, which are familiar to the older folks. It activates temporal projection that is involved with the faculties of smell and sound. The processing of semantics in both speech and vision and plays a key job in the formation of long-term memory. Somewhere inside the temporal flap is the region of the limbic framework, which includes hippocampus, amygdala, thalamus and hypothalamus which are of particular relevance to the processing of memory. The hippocampus acts as a temporary transit point for long-term recollections as it doesn't store information. Be that as it may, it is essential to the consolidation of information from here and now to long-term memory. It is also an area that delivers the chemical acetylcholine which facilitates learning and memory. Additionally, amygdala also plays out a primary job in the processing and memory of emotional reactions. In this way, the scents may be all the more rapidly and more strongly associated with

recollections than the other faculties, and recollections of a smell may persist for longer.

4) Using feeling of taste by tasting treat (Tong yod and Kanom-chun), lime, sugar, salt, espresso, tea and treat. It stimulates parietal projection, which involved in integrating tangible information from various faculties, cognition and information processing of time, place orientation and memory.

5) Using the feeling of touch by massaging, clay molding, objects identifying by touching, for example, coins, spoons, glasses, pens, rulers, brushes, tooth brushes, and so on. Those are the articles which the more established adults have been using regularly. It activates frontal and parietal projection. Frontal projection is involved in conscious idea and higher mental functions, for example, decision-making, particularly in that part of the frontal flap known as the prefrontal cortex. It also plays an important part in processing here and now recollections and retaining longer term recollections. These are recollections associated with emotions gotten from input from the limbic framework. In addition, the parietal flap also plays a job in tangible regulation [13].

6) Using of the emotional sense combined in five faculties, for example, play card, listen to music, massage and smell aroma and so forth. Emotional sense will motivate diencephalon, especially hypothalamus, which regulate emotion and encode memory by laying down a memory attention. It is also stimulate limbic framework, which plays a job in the formation of memory by integrating emotional states with put away recollections of physical sensations, it included amygdala and hippocampus. The amygdala is responsible for determining what recollections are put away and where the recollections are put away in the brain and plays a job in the modulation of emotional memory consolidation. The hippocampus involved in memory forming, organizing, and storing. It is important in forming new recollections and connecting emotions and faculties, for example, smell and sound. The hippocampus acts as a memory indexer by sending recollections out to the appropriate part of the cerebral cortex for long-term storage and retrieving them when necessary.

During the session of Neurobic Exercise Program, the participants got the program to utilize faculties in combining at least two detects a day. Accordingly, the combination of at least two faculties stimulated the function of brain, which involved with memory process, including the frontal, parietal, temporal, occipital projection, diencephalon and limbic framework. In this way, the Neurobic exercise program by using various combinations of physical faculties stimulated the function of neural system which involved with here and now and long term memory of the participants. Most kinds of recollections are put away in the cortex because almost 90% of the neurons are located in the cerebral cortex which is connected to cerebellum and spinal string. In the medial temporal projection of cerebral cortex where the hippocampus is located and the amygdala is located adjacent to it. These two parts play a key job in short – term memory. Memory begins with the sense taking in an upgrade at the cerebral cortex and transformed into tactile memory. On the off chance that the information is repeated, it will be transferred to limbic framework in hippocampus and put away as a working or here and now memory. Here and now memory will hold a snippet of information temporarily, which would lead to long-term memory later. The permanent storage in long – term memory can be facilitated by the repetition of the information.

This Neurobic exercise program was not only using all senses, but also encouraged the experimental group participated in playing cards, digits recalling, mind calculating, asking time and place, phrase repetitionand picture naming. All these activities are the same as mental exercise or cognitive activities. Therefore, activities also can facilitate frontal and parietal lobe, diencephalon and limbic system which involved with memory process. In addition, Neurobic Exercise Program wasalso a fun activity. Then the participants felt relaxed and happy whilst leading to improve their memory retention as the brain circuits were alerted and activated.

Therefore, it can be concluded that Neurobic Exercise Program improved the memory retention in the elderly with dementia with statistical significance.

## CONCLUSION

1) Nursing care− nurses are required to be trained in Neurobic Exercise Program by applying six physical senses as well as non- routine experiences regularly whilst they provided nursing care to the elderly people who are suffering from dementia.

2) Nursing administration− the results of this study can be established as a nursing standard in improving memory deterioration and also in a multidisciplinary team to create a care map and a clinical

pathway that could ensure the quality control in nursing care.

3) Nursing academy− these findings may be integrated to the elderly care subject in teaching nursing students in enhancing memory impairment the dementia elders.

4) Future research− this could be used as base information on further research in the elderly with dementia or others suffering from similar disorders in improving the quality of their life.

## REFERENCES


1. Jriangprasert C. Alzheimer and Dementia (2nd ed) (2006). Bangkok: Natangsulokkwang Publisher; 2006.

2. Sriwatanakul K. (2002). How to keep away from dementia (1st ed). Bangkok: Siam sport syndicate; 2002.

3. Myers E.C. (2006). Memory loss and the brain. The new letter of the Memory Disorders Project. 2006. Available from URL: http://www.memorylossonline.com/glossary/memory.html.

4. Kairith O, Chansirikan R. (2009). Thai people are vulnerable for Dementia. The Newsletter Post 2009 March (vol. 3).

5. Pinquart M. & Sorensen S. (2003). Associations of stressors and uplifts of caregiving with caregiver burden and depressive mood: A meta-analysis. Journal of Gerontology.; 58 (2): pp. 112-128.

6. Health Information System Development Office 2009. Thaihealth Report 2007. Available from: http://www.hiso.or.th.

7. World Health Organization. 10 Fact of dementia. WHO, 2012. Available from: www.who.int/features/factfiles/dementia/en/index.html.

8. Kenny T., Kenny B., Allen H., Bonsall M.A., Cox P.J., Draper R., et. al. (2012). Memory Loss and Dementia 2012. Available from: http://www.patient.co.uk/health/Memory-Loss-and-Dementia.htmhttp://dx.doi.org/10.1093/geronb/58.2.P112

9. Tadaka E. & Kanagava K. (2004). A randomized controlled trial of a group care program for community-dwelling elderly people with dementia. Japan Journal of Nursing Science. 2004; 1: pp. 19-25.

10. Chaiwong W. (2005). Effectiveness of the Memory Training Program for the Elderly [dissertation]. Chiang Mai: Chiang Mai Univ., 2005.

11. Nicola T.L., Cox L.K., Flicker L., Foster K.J., Bockxmeer M.F. & Xiao J., et al. Effect of physical activity on cognitive function in older adults at risk for alzheimer disease: A Randomized Trial FREE . JAMA. 2008; 300(9): pp. 1027-1037.

12. Katz C. L. & Rubin M. (1999). Keep your brain alive: 83 Neurobic Exercises to help prevent memory loss and increase mental fitness. New York: Workman Publishing Company.

13. Mastin, L. (2010). The Human Memory 2010. Available from: http://www.human-memory.net.

14. Atkinson R.C. & Shiffrin R.M. (1977). Memory and cognition. In S. Warchel& W. Shebilsk (Eds.), Psychology: Principles and application (2nded.). (pp.219-258). New Jersy: Prentice Hall; 1977. http://dx.doi.org/10.1111/j.1742-7924.2004.00006.x



**Corresponding Author**

**Rajendra Kumar Mahto***

Research Scholar, Swami Vivekananda University, Sagar (MP)