

Talking While Not Talking

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Abstract:

In today's world, typically we've got to speak loudly on the cellular phone within the middle of the disturbance or traveling in train or buses, within the theaters. "Talking while not talking" technology is the resolution to the present drawback. Talking while not talking technology is an astonishing to answer those that had lost their voice, however, would like to talk over phones, mobiles and different modes of communication. This technology works on two basic principles- Image processing and Electromyography. Talking while not Talking technology targets to note all lip movements and rework them into sounds that help the general public who are dumb to talk and permit the general public to form silent calls while not troubling others .It identifies all lip movements associate degrees internal changes an electrical pulse into sound signals and sends them, omitting all different close sounds or unpleasant sounds that cause disturbance noise. It can use various languages as English, French & German, but not used in those languages having different tones holding different meanings. This new technology becomes sparingly useful to a person who loses his voice and wants to make silent communication without worrying others.

Keywords: Talking while not talking, Electromyography, Image Processing, Cell Phone.

Introduction

Talking while not Talking technology permit communication to require place once a perceptible acoustic signal isn't on the market. Receiving device information from components of the human vocalization procedure – from the articulation, their neural pathways, or the brain itself – it generates a digital illustration of speech that synthesizes directly and translated as information or ordered during a communication network. By acquiring sensor data from elements of the human speech production process – from the articulators, their neural pathways, or the brain itself – it produces a digital representation of speech which can be synthesized directly, interpreted as

data, or routed into a communications network[1]

While upgrading aids for the speech-impaired are a target of medicine engineering for several years. The most recent will increase from interest in Talking while not talking technology emerges conjointly from a second, quite completely different category in implementations providing privacy for radiotelephone communications. It's loosely united that cell phones disturb in conferences or quiet areas. Today in several public place's cells phone use is interdicted. Very often the cell phone user, too, isn't comfy having contented of his oral communication becomes public. At an equivalent time, the flexibility to field to associate degree imperative or necessary move into anywhere in several instances could be a slender helpful service. This technology is tiny enough to integrate into a cellular phone, resolve these issues by sanctioning users to speak taciturnly, while not bothering the public around them. The marketplace for this conceivably becomes necessary if such an inspiration gained public acceptance and approval technology collide.

There are several technologies that try and decrease the sound pollution and build setting a much better place to measure in. Our paper talking while not Talking Technology that place associate degree finish to sound pollution. It's a technology that helps US and transforms the knowledge or data will not victimize the vocal cords. This technology aims to note all the lip movements & convert them into a laptop generate sounds that sent over a phone. Therefore, someone on the opposite end of phones receives the data concerning the audio. The thought of translating silent speech electronically or with a laptop has been around and popularized within the 1968 filmmaker science-fiction film 2001-A area Odyssey. [2]

The device, trained by the Karlsruhe Institute of Technology (KIT), uses the diagnostic technique watching of minute muscle movement that happens after we speak and translating them into electrical pulses that turned into speech, while not a sound verbalized. Talking while not Talking technology goals to note each movement towards the lips and convert them into voice signals that facilitate the public UN agency lose voices to talk or dumb, and permits public to form silent calls while not perturbing others, rather manufacturing any sounds, the telephone ought to decipher the movements turn out orally by activity muscle activity, then convert this into speech that the person on the opposite end of the decision will hear. So, primarily it reads the lip "We used electrodes that attach to the skin. Within the future, such electrodes assembled into cell phones," said Michael wand, from the KIT [3]. Thus, public speaking with their cell phones at the crowded place with none disturbance as shown in figure.



Fig.1- Common people talking at the same place without disturbance

It works with the computers, characteristic components that a private pronounces from non hearing sources of data concerning their speech by lip movements. These are then want to recreate the speech mistreatment speech synthesis.

Methods

Talking While Not Talking Technology is processed through some ways in which our way. They are:

Diagnostic procedure/Electromyography (EMG)

Electromyography (EMG) is also a way of estimating and recording the electrical activity created by skeletal muscles. Marjoram is victimization Associate in Nursing instrument named as an Associate in Nursing diagnostic procedure, to produce a record named as an Associate in Nursing EMG. Associate in Nursing diagnostic procedure identifies the electrical potential generated by muscle cells once these cells

are electrically or neurologically triggered. The signals can be used to acknowledge medical abnormalities, activation level, and accomplishment order or to measure the biomechanics of human or animal activities.

Diagnostic procedure (EMG) is also a procedure for evaluating and recording the electrical signal generated by skeletal muscles. Associate in Nursing diagnostic procedure detects the electrical potential created by muscle cells, once these cells are electrically or neurologically stimulated. Discovered signals are converted into electrical pulses that will then become verbal signals, whereas not a sound is expressed. It is a manner that monitors very little muscular movements and pulses generated by it. The transducers involved in converting the pulses of electrical signals. The electrical offer is that the muscle membrane potential for concerning -90 MV. Measured myogram potential varies from however fifty μ V and up to twenty to thirty MV, looking at the muscle below observation. In Figure (refer with Fig.2) the diagnostic technique, sensors hooked up to the face or hand record the electrical signals generated by the facial or hand muscles, compare them with a recorded signal pattern of spoken words or parts.

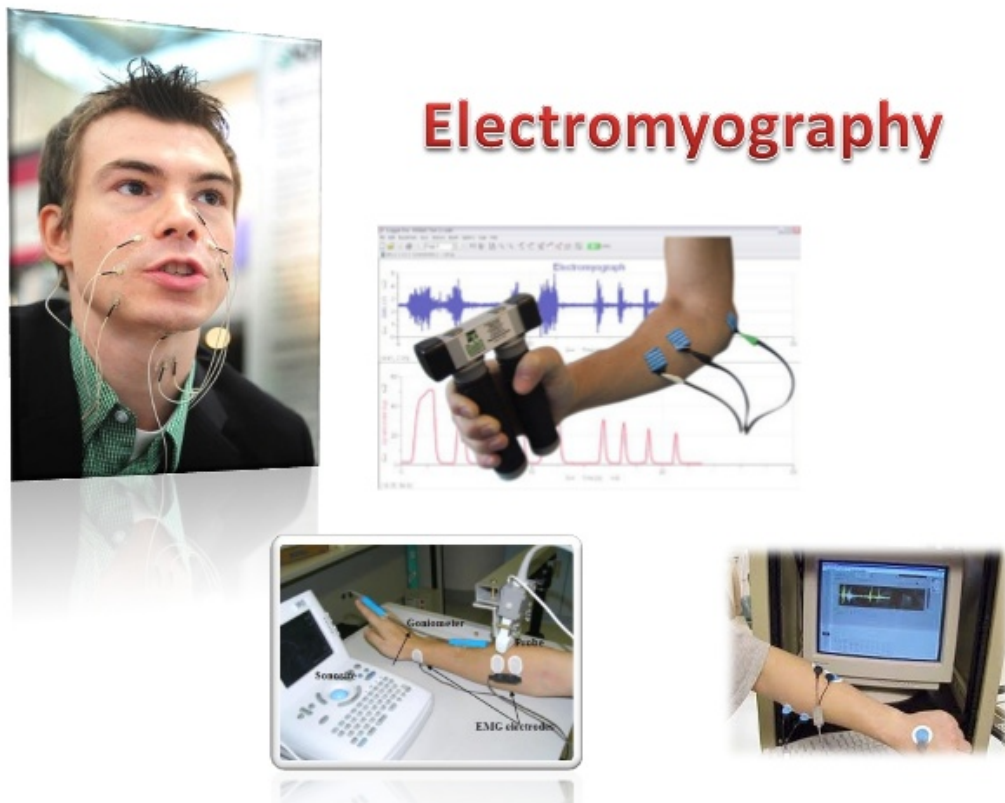


Fig.2 Electromyography sensors attached to the face and body

Image Processing

In engineering and applied science, image processing is any pattern of signal process for

the input is a picture, like a photograph or video frame; the output of image process might either a picture or, a group of characteristics or parameters associated with the image. Most image-processing techniques embody considering the image of a 2-D signal and implementing customary signal-processing techniques thereto. The only kind of digital image processing converts the digital information tape into a movie image of marginal corrections and arrangements. Then a giant mainframe computer or worker for refined interactive handling of the information. Within the gift context, overhead prospective is worker in sight and analyze the image. Analysis of remotely detected information is completed mistreatment varied image processing techniques and ways that includes.

1. Analog image processing
2. Digital image processing

Application of technology

The Technology discloses plenty of applications like mentioned:

- As within the house, there isn't any medium for sound to travel so this technology are going to be acceptable for the employment by astronauts.
- It is helpful for those that do not have vocal cords or those who area unit affected by encephalopathy .Also serving to those that have lost their voice as a result of a ill health or accident.
- It is easy to create silent calls even if we've got an inclination to face live in some huddled place. It permits people to create silent calls whereas not distressing others.
- It has become simpler to inform a secret identification number or Master card no. on the phone as there's nobody eavesdrops any longer.
- Talking while not Talking Techniques is applied in Military to act secret/confidential matters to others.
- Since the electrical signals square measure universal, they will be translated and remodeled into any language. Native speakers will convert it before causation, it to the opposite aspect. Thus, it will be translated into any language of the selection.

From a security purpose of reading, recognizing whom you're reprimanding gets difficult sometimes. Even differentiating between folks and emotions can't be done. This suggests you'll invariably feel you're reprimanding a machine i.e. Robot. Presently, this device desires 9 ends up in hooking up or incorporated into our face, that is makes it quite troublesome and impractical to use.

Research & Future Prospect

Talking without Talking technology gives way to a bright and innovation for future of speech recognition technology from simple voice commands to memorandum imposed over the cell phone. All this may possibly in noisy public places. Without having electrodes drooping and gutting all around the face, these electrodes will

integrate and combine into cell phones or on the latest gadgets or gimmicks used for communication. This may have features like lips reading based on image recognition, & processing rather than electromyography. Nano technology will be a mention able step towards making these devices handy, compact and portable.

With all the a lot of phones in distribution, there's Brobdingnagian potential for increasing and growing union By saving 'Lost calls' - phonephone calls that aren't answered or inexperienced as a result of the user isn't in an exceedingly scenario to speak - not simply in business conferences, however everyday things. per analysis, these 'Lost calls' square measure value \$20 billion p.a. worldwide. For the cellular operator, these square measure probably earning that's presently being left on the table. once these 'lost calls' become answerable, and might connect while not creating a sound, there's an incredible potential for enlarged and expanded profits. Now, the analysis goes on, technology which will employed in Associate in Nursing workplace surroundings too.

Conclusion

It will be one in every of the artistic, inventive, ingenious and helpful technologies. In future this technology is of use in day- to - day life. So Talking while not Talking Technology, one in every of the recent trends within the field of data technology implements 'Talking while not Talking'. Engineers claim that the device is functioning with abundant PC potency. It's troublesome to match TWT technologies in a very purposeful manner. As the variety of the systems are still preliminary, therefore it might build no sense example to match speech recognition scores and synthesis quality at this stage of the method.

'Talking while not Talking' technology aims to note every and be terribly movements of the lip and remodel them into verbal signals or sound. This might facilitate people that lose voices to talk, and change folks to create silent calls while not bothering others. Instead of creating any sounds, the phone would decrypt the movements our mouth makes by estimating muscle activity

References

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