Silent Sound Technology

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Abstract: *This time every person has the enjoy of talking aloud within the cellular cellphone within the midst of the disturbance whilst travelling in trains or buses. There's no need of shouting anymore for this purpose. 'Silent sound technology' is the solution to this problem. When demonstrated, it appears to detect each lip movement and internally converts the electrical pulses into sound signals and sends them neglecting all different surrounding noises. it is genuinely going to be an amazing answer for those feeling irritated while different speak loud over cellphones. The purpose of "Silent Sound" technology is to track every movement of the lips and transform them into sounds, enabling people to conduct private conversations without disturbing others or assisting those who have lost their voices. Your handset would interpret the motions of your mouth by detecting muscle activity rather than producing any noises, and then translate these movements into words that the person on the other end of the conversation can hear. It basically scans your lips, then. When someone loses their voice while speaking, this new technology will come in extremely handy. It also makes it possible for people to make quiet calls without bothering Even we have the ability to disclose our PIN to a dependable friend or family without anyone listening in. The listener may clearly hear a voice on the other end. This technology's wonderful addition is that "it is an instant polyglot," meaning that gestures may be translated into the user's preferred language instantly. For languages like English, French, and German, this translation is accurate. Yet various tones can have a wide variety of meanings in languages like Mandarin. This creates a concern because it is predicted that in five to ten years, this technology will be part of everyday life.*

Keywords: Electromyography, Image Processing Muscular movements, Analog Image, Digital Image, Noisy, Vocals Recognition

1. Introduction

Silence is the best answer for all conditions …even your cellular is familiar with! The word cell telephone has to grow to be the best buzzword within the cellular conversation enterprise. There are masses and lots of technology that attempts to reduce Noise pollution and make the environment higher vicinity to stay in. I'm able to talk about a brand-new generation referred to as Silent Sound technology with a view to position a cease Noise pollutant you're in a movie theater or noisy restaurant or a bus and many others. in which there may be a lot of noise around is a massive issue while speak me on a cell smartphone. but in destiny this hassle is eliminated with "silent sounds", a new era unveiled on the CeBIT honest on Tuesday that transforms lip movements right into a computer-generated voice for the listener at the alternative cease of the smartphone. In the 2010 CeBIT's "future park", a concept "Silent Sound" technology turned into a proven ambition to be aware of every motion of the lips and rework them into sounds, which could assist individuals who lose their voices to talk and allow human beings to make silent calls without bothering others.

The Silent Sound era will put an give up to an embarrassing scenario along with a person answering his silent, however vibrating cellular telephone in an assembly, lecture, or performance, and whispering loudly, 'I'm able to communicate to you proper now'. in the case of a pressing call, apologetically rushed out of the room if you want to answer or call the man or woman returned. The Silent Sound era will put an give up to an embarrassing scenario along with a person answering his silent, however vibrating cellular telephone in an assembly, lecture, or performance, and whispering loudly, 'I'm able to communicate to you

proper now'. In the case of a pressing call, apologetically rushed out of the room if you want to answer or call the man or woman returned.

This new technology can be very beneficial on every occasion someone loses his voice whilst talking to make silent calls without worrying others, or even whilst we want to inform our PIN number to a dependent on a friend or relative while not having every other character concentrate on it secretly. At the opposite cease, the listener can hear a clear voice. Some other important benefit is that it can be translated into any language of the person's desire. This translation works for languages like English, French & German. However, for languages like the Chinese language is tough due to the fact distinctive tones can hold many distinctive meanings

2. Need of the Study

The Silent sound technology is an ideal solution for people who have misplaced their voice but desire to speak on cellular phones. This era facilitates discovering every lip movement, converts the electrical pulses into sound signals, and sends those alerts heading off the surrounding noise, which may additionally motivate a disturbance.

Silent Sound technology will put an give up to embarrassing conditions along with someone answering his silence. Still, vibrating cellular cellphones in a meeting, lecture, or overall performance, and whispering loudly, 'I can't speak to you properly now'. Inside the case of an urgent name, apologetically rushed out of the room so that you can find a solution or name the individual again.

When you upload lawnmowers, snow blowers, leaf blowers, jackhammers, jet engines, transport trucks, and horns and buzzers of all types and descriptions you've got a wall of constant noise and inflammation. Even when watching a tv program at an affordable volume stage you're blown out of your chair while a commercial comes on at the decibel degree of a jet.

The technology has a wide range of uses, such as aiding those who have lost their voice due to illness or an accident and letting a trusted friend know your PIN number over the phone in private if lip-readers aren't there. Native speakers have the ability to talk unintelligibly in their languages, and the receivers will hear the translated speech. It sounds as though the natural speaker was speaking a different language.

3. Research Methodology

With all of the millions of phones in circulation, there is great potential for increasing earnings by saving 'lost calls' – telephone calls that go unanswered or uninitiated because the user is in a situation in which he or she cannot speak-not just in business meetings, but everyday situations. According to research, these 'lost calls' are worth $20 billion per year worldwide. For the cellular operator, these are potential earnings that are currently being left on the table. When these 'lost calls' become answerable, and can be conducted without making a sound.

Silent sound technique utilizes two different METHOD.
(A) Electromyography (EMG) [5]
(B) Image Processing[3]

Electromyography (EMG)
Electromyography is a technique used in silent sound technology that video display unit of tiny muscular moves that occur while we speak and converts them into electrical pulses which could then become speech, without a sound utter. Electromyography (EMG) compares and records the electrical activity produced via skeletal muscle groups. EMG is finished using a device called an electromyograph, to provide a report known as an electromyogram. An electromyograph detects the electrical ability generated via muscle cells while those cells are electrically or neurologically activated
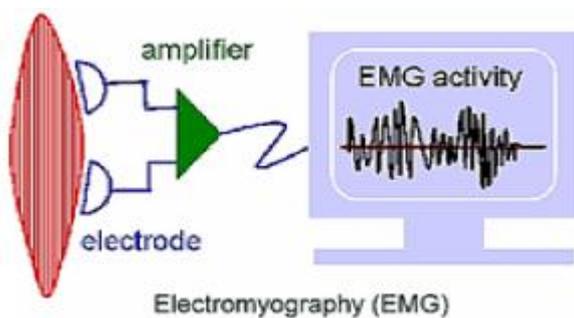
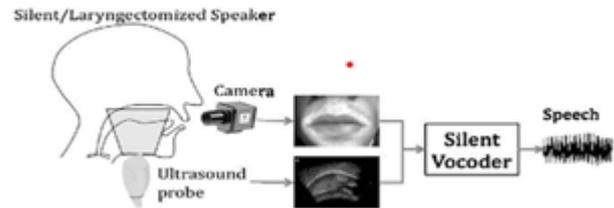(**Figure 1:** Electromyography activity[3]

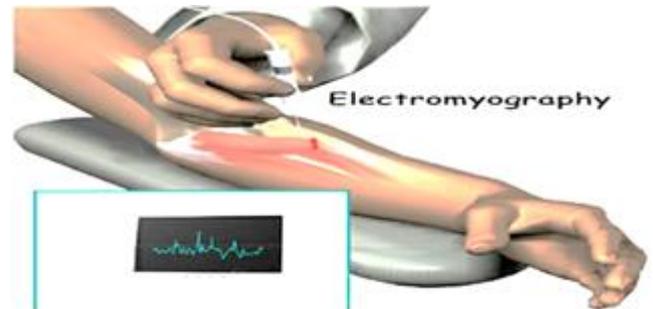**Figure 2:** Electromyography Frequency Capture[2]

Figure 3: Electromyographic sensors attached to hand) [3]

Image Processing
The simplest shape of the digital photo processor converts the digital records tape into a movie image with minimum corrections and calibrations. Then large mainframe computers are hired for stylish interactive manipulation of the records. Inside the gift context, overhead views are employed to analyze the photo. In electric engineering and computer technological know-how, photo processing is any shape of signal processing for which the input is a photograph, inclusive of an image or video frame; the output of image processing can be both a photograph or, a fixed of characteristics or parameters associated with the photo. Most photograph-processing techniques contain treating the image as a two-dimensional signal and make use of preferred signal-processing techniques to it. analysis of remotely sensed facts has executed the usage of diverse image processing techniques and techniques that include

Analog Image processing: Hard copy data, such as prints or images, is processed using an analogue technique. It uses specific interpretive components, including the principal element and spatial layout, among others. The combination of multiple concepts for analyzing data from remote sensing-based objects enables us to determine not only what such an object is but also its significance. In addition to this, it also comprises optical photogrammetric techniques that enable accurate measuring of an object's height, width, location, etc.

Digital image processing: Silent sound technology we can use also a digital image processing, which is the processing of changing an image into an image, video, or audio, however the result of silent sound technology (talking without talking) is audio with only minor adjustments and calibration. An ultrasonic transducer, a high-resolution optical camera, a lips reader, and a silent vocal will be included in the interface. An ultrasonic device and a high-resolution optical camera are utilized to capture images of the movement of the lips and tongue. The image will be sent to a lip's reader, who will then use it to compare past uttered words to the present lips and tongue movement to produce a visual speech signal.

In Image Processing 3 Different Ways.

1) Pre processing
2) Display and enhancement
3) Information extraction

4. Feature Research

- The ability to understand the movement of the mouth and jaws as well as electrical impulses collected and converted into frequency components before transmission will be incorporated into mobile phones and headsets in the future.
- As a result, "Talking Without Talking" is implemented by Silent Sound Technology, a new development in the field of information technology.

5. Limitations of Silent Sound Technology

For languages where various tones have diverse meanings, like Chinese, it cannot be done. Only when the electrode is introduced into the skin does it function perfectly. The statement won't have any sentiment because a robot will be speaking.

6. Conclusion

The purpose of "Silent Sound" technology is to detect every movement of the lips and convert them into sounds, enabling individuals to speak in private calls without disturbing others or supporting those who have lost their vocals. Your handset would detect the patterns of your mouth by recognizing muscle activity rather than producing any noises, and then translate these movements into words that the person on the other end of the conversation can hear. In essence, it scans your lips.

The silent sound technology, which detects mouth movement and directs electric signals which are transformed into sound signals, will be suitable for people that lost their vocals and yet still want to use mobile phones to communicate. It will provide a solution to their issue. In the future, the headset would interpret mouth movement and transform it into an audio indication at the listener's sides.

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