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A Human Safety Device- An Attaching Clip Using Internet Of Things

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ABSTRACT

ARTICLE INFO

Human Safety is an emerging paradigm for understanding global vulnerabilities whose proponents challenge the traditional notion of national security by arguing that the proper referent for security should be at the human rather than national level. Understanding of security involves a number of research fields, including development studies, international relations, strategic studies, and human rights. The system to be implemented with the help of technologies like Machine learning and IoT will be activated with the recognition of a human's voice and notify the nearest police station along with the victim's details and location. The system implementation will help provide maximum safety to the people along with reducing the ongoing risks. Women are adept at mobilizing diverse groups for a common cause. They often work across ethnic, religious, political, and cultural divides to promote peace. We are all aware of importance of women's safety, but we must realize that they should be properly protected.so we are using this device especially for women safety

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I. INTRODUCTION

Safety could be a state during which hazards and conditions resulting in physical, psychological or material damage are controlled so as to preserve the health and well-being of people and therefore the community. it's a vital resource for standard of living, required by people and communities to understand their aspirations.

Human security reveals a people-centred and multidisciplinary understanding of security involves variety of analysis fields, including development studies, international relations, strategic studies, and human rights. The United Nations Development Programme's 1994 Human Development Report is thought-about a milestone publication within the field of human security, with its argument that insuring "freedom from want" and "freedom from fear" for all persons is that the best path to tackle the matter of worldwide insecurity.

The standing of women in India has been subject to several changes over the span of recorded Indian history. Their

position in early society was of terribly high position in India's ancient amount, particularly in the Indo-Aryan speaking regions, and their subordination continued to be reified well into India's early trendy amount. Practises such as female infanticide, dowry, kid marriage and the taboo on widow marriage, have had an extended length in India, and have established tough to uproot, particularly in caste Hindu society in northern India. India encompasses a high volume of child trafficking. There are several cases wherever kids simply disappear long, as several united each eight minutes, per the National Crime Records Bureau. In some cases, kids are taken from their homes to be bought and sold within the market. In different cases, kids are tricked into the hands of traffickers by being given a chance for employment, once actually, upon arrival they become bond. In India, there are several kids trafficked for varied reasons such as labour, begging, and sexual exploitation. as a result of the character of this crime; it's laborious to track; and because of the poor social control of laws, it's tough to forestall.

Hence, we'd like a tool which will give safety to everybody as well as men girls and youngsters.

II. PROBLEM STATEMENT



According to the above figure, crime against women has increased every year. From 2012 to 2013, the cases increased from 2, 44,270 to 3.09,546. The cases increased from 2013 to 2014 and then decreased slightly in 2015.

The Conviction rate was increased only by 0.7% from 2014 to 2015. The device proposed in this paper is based on a device developed to ensure child safety [3]. The child safety device is a wearable device through which parents can keep track of their children. The proposed device will work as an emergency device for women in distress.

III. LITERATURE SURVEY

[1] A Smart Watch for Women Security Based on IOT Concept 'WATCH ME'

Today, in the current global scenario, Women were facing lot of challenges. We can hear the news of women harassments than their achievements. There are many existing apps and devices for women security via smart phones. Though the smart phones have increased rapidly, it is not possible to have the phone all the time in our hand to make a call or click on it, so here we introduced a new technique via smart watches. When a women or child wearing this 'watch me' is exposed to sexual or vulnerable attack, the sensor present in it detects the heart beat rate of a person which will be high at the moment by the secretion of epinephrine hormone from hpa axis and gets activated, this will not only provide a alarm sound to the attention of nearby people, it will automatically make an call to our registered contact and also through GPS/GSM it will detect the nearby police station and make an ring there so it will be helpful for police to arrive soon at the spot by tracking the GPS , such a system will lead to safer and better environment.

[2] Hidden Markov Model and Speech Recognition

Modeling signal model for speech recognition is challenging task. It gives us great deal of information about problem being modeled. In this seminar we will see how Hidden Markov Model is used to model speech recognition application. We start with mathematical understanding of HMM followed by problem faced by it and its solution. Then we move to block diagram of speech recognition which include feature extraction, acoustic modeling and language model, which works in tandem to generate search graph. Use of HMM in acoustic modeling is explained. At the end we will look at isolated word recognizer using HMM. Real-world processes generally produce observable outputs which can be characterized as signals. The signals can be discrete In nature or continuous in nature. The signal source can be stationary (i.e., its statistical properties do not vary with time), or non-stationary (i.e., the signal properties vary over time). The signals can be pure or can be corrupted from other signal sources or by transmission distortions. It also focuses on three fundamental problems for HMM, namely the probability of observation sequence given the model i.e. $P(O/\lambda)$; the determination of single best state sequence, given the observation sequence $O = O1, O2, \dots, OT$; and the adjustment of model parameter $\lambda = (A,B,\pi)$ to maximize recognition probability. It also describe the method to efficiently solve this problems. Section 2 gives mathematical understanding of Hidden Markov Model. It also focuses on three fundamental problems for HMM, namely: the probability of observation sequence given the model i.e., $P(O/\lambda)$; the determination of single best state sequence, given the observation sequence $O = O1, O2, \dots, OT$; and the adjustment of model parameter $\lambda = (A,B,\pi)$ to maximize recognition probability.

[3] Voice Log-In Using Spoken Name Input

The invention relates generally to voice recognition, and more particularly relates to a voice log-in method for granting a person access based on recognition of that person's spoken name, without the use of additional codes or passwords. In even greater particularity, voice log-in is implemented using an HMM (Hidden Markov) modeling technique in which, to accommodate upre dictable variations in the duration of pauses between a person's first and last name, the full-name models for the spoken rendition of a person's name are augmented by: (a) inserting skip transitions for pauses between the name-part utterances within the full-name HMM model, or (b) including nonspeech HMM models for pauses between the subpart or name-part HMM models in a full-name FSA (finite state automaton) model. Speaker recognition generally includes the tasks of speaker identification and speaker verification: speaker identification involves labeling an unknown voice as one from a set of known voices, while speaker verification involves determining whether an unknown voice matches the known voice of a speaker whose identity is being claimed.

[4] Speech Synthesis Based on Hidden Markov Models.

This paper gives a general overview of hidden Markov model (HMM)-based speech synthesis, which has recently been demonstrated to be very effective in synthesizing speech. The main advantage of this approach is its flexibility in changing speaker identities, emotions, and speaking styles.

This paper also discusses the relation between the HMMbased approach and the more conventional unit-selection approach that has dominated over the last decades. Finally, advanced techniques for future developments are described. Text-to-speech (TTS) synthesis is a technique for generating intelligible, natural-sounding artificial speech for a given input text. It has been used widely in various applications including in-car navigation systems, e-book readers, voiceover functions for the visually impaired, and communication www.ierjournal.org

aids for the speech impaired. More recent applications include spoken dialog systems, communicative robots, singing speech synthesizers, and speech-tospeech translation systems. Typical TTS systems have two main components, text analysis and speech waveform generation, which are sometimes called front–end and back–end, respectively. In the text analysis component, given input text is converted into a linguistic specification consisting of elements such as phonemes. In the speech waveform generation component, speech waveforms are generated from the produced linguistic specification. The main focus of this paper is the speech waveform generation component, and we omit details of the text analysis module.

[5] Spotted words recognition system based on Kalman filter and HMM (hidden Markove model) models to control the movement of the manipulator ARM

he main objective of this paper is to implement a real-time speech recognition module to use it in controlling the movements of a five degree of freedom (FOD) manipulator arm using a Kalman filter as a selector in noisy environment and HHM model to recognize 12 Arabic spotted words. The adopted methodology is based on detecting and spotting vocabulary words within a phrase generated by user. The system recognizes the spotted words using Kalman filter to select these spotted words then a robust HMM (hidden Markove model) technique with cepstral coefficients is used to improve the recognition rate. To implement the approach on a real-time application, a "personal computer parallel port interface" was designed to control the movement of a set of stepper motors. The user can control the movements of five degree of freedom (DOF) for a robot arm using a vocal phrase containing spotted words. Human-machine voice interface has a key role in many application fields. Robotics has achieved its greatest success to date in the world of industrial manufacturing. Robot arms, or manipulators, comprise a 2 billion dollar industry. Bolted at its shoulder to a specific position in the assembly line, the robot arm can move with great speed and accuracy to perform repetitive tasks such as spot welding and painting. In the electronics industry, manipulators place surfacemounted components with superhuman precision, making the portable telephone and laptop computer possible (Beritelli et al., 1998; Renals et al., 1994). Moreover, speech recognition constitutes the focus of a large research effort in artificial intelligence (AI), which has led to a large number of new theories and new techniques.

IV. PROPOSED SYSTEM

The device equally provides safety measures to men as well as women. The device is easily attachable to the garment and bags the device being in the form of an attachable clip. Unlike other devices proposed device does not contain any button but it takes voice as an input, as soon as the victim says "help".

Once the voice input is received the device gets activated and sends alert to nearby police stations with the victim's GPS location and entire details i.e phone number, photo, name, age, etc. which will be stored during the registration. So, basically our device gets activated by giving the input voice or by saying help in a particular sequence. Unlike other devices it does not consist of button to get started, hence voice recognition is a very important point in our project.



Fig.1:- System Architecture

METHODOLOGY (HMM):

The hidden Markov model can be represented as the simplest dynamic Bayesian network. The mathematics behind the HMM were developed by L. E. Baum and co-workers HMM is closely related to earlier work on the optimal nonlinear filtering problem by Ruslan L. Stratonovich, who was the first to describe the forward-backward procedure.

In simpler Markov models (like a Markov chain), the state is directly visible to the observer, and therefore the state transition probabilities are the only parameters, while in the hidden Markov model, the state is not directly visible, but the output (in the form of data or "token" in the following), dependent on the state, is visible. Each state has a probability distribution over the possible output tokens. Therefore, the sequence of tokens generated by an HMM gives some information about the sequence of states; this is also known as pattern theory, a topic of grammar induction. The adjective hidden refers to the state sequence through which the model passes, not to the parameters of the model; the model is still referred to as a hidden Markov model even if these parameters are known exactly.

V. ACKNOWLEDGEMENT

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VI. CONCLUSION

This paper describes about the Speech Recognition or Voice Recognition techniques that we need to use in our project for converting speech to text. The paper shows what techniques are we using to do the speech recognition. For this purpose we are using HMM Model, and we have seen that it is very compactible solution for the same. In this report we have studied how HMM works and the algorithm for it, its property, how to encode it and how to decode it.

Hence, here I conclude with my module "Speech Recognition.

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