

Child Abusing and Reporting System

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Abstract— In many countries like India, Child abuse is one of the major social evil leading to poor emotional health of the future citizens. Child abuse and neglect occur in different situations, for a different range of reasons at different places. Children often experience more than one form of abuse at a time. The abuse can take many forms such as physical, emotional, psychological, neglect, domestic violence etc. Recent research by McGill University (2015) showed that emotional abuse of a child may be as harmful as physical abuse and neglect. A child facing abuse in any of the above forms is at risk of being isolated; experience anxiety, depression, and mental trauma; face difficulties in learning and developing social relations. Although there have been many initiatives by NGOs and government and other welfare departments to stop this evil by registering a complaint against the abuser, conducting campaigns, by protesting against abuse and so on. These schemes are only carried out if the crime has already taken place. Thus the abuser can be punished according to the Child Protection and Safety Act but the negative impact it had left on the child remains. This can only be reduced if the responsible guardians or parents are alerted beforehand by an intelligent system, so that they can act in time to protect their child from this terrible faith.

Keywords— Child abuse, Raspberry pi 3b+, Voice recognition API.

I. INTRODUCTION

The term Abusing referred as violent, cruel, unfair treatment with someone who doesn't have the power to prevent it. Also abusing defined as any activity which intentionally harm or injures victim. There are different kinds of abuse done by adults like physical abuse, sexual, verbal/emotional, Mental/Psychological, Financial, Cultural etc. Any action done by adult or child which causes harm to a "child" is child abuse [1]. An abused child often experiences more than one type of abuse i.e. physical, sexual or emotional.

We also know that "Neglect", whatever form it takes can damage child's childhood as physical abuse. Children who are constantly shamed, ignored, humiliated, terrorized are badly compromised with their emotional ability which often leads to insecurities, lack of development, trust issues, forming relationships etc. The physical effect of abuse can be minor or severe like broken bones, Rib fractures or even a death. Shaken baby syndrome, impaired brain development, poor physical health etc. are the effect of physical abusing. Many children who have been abused in any form faced many psychological problems like Anxiety, depression, OCD, eating disorder and may also attempt suicides.

In order to work on this issue there should be some straightforward, an anonymous platform for reporting child

abuse issues and inform their parents/ guardians/ friends/ family etc. We intend to develop a system using Raspberry Pi 3B+ module [2]. It will enable the child to report the problem by automatically detecting some sign words (help, save me etc.) and thereby identifying the severity of problem to inform his/her parents by sending message to their mobile phones.

II. RELATED WORK

Research has been done to prevent child abuse using voice recognition and GSM module interfaced with Arduino uno [3]. There are also systems such as Online System for Child Abuse & Neglect Reporting(OSCR), EyeWatch, Project Jagriti [4]. They are compared in Figure 1.

Sr.No	Existing System	Overview	Limitation
1.	Online System for Child Abuse & Neglect Reporting (OSCR)	It is a website designed to report non-emergency child abuse cases.	The reporter must have an account to report a child abuse case. If the user says Yes/Unknown then the user won't be allowed to access the system
2.	EyeWatch	It is an application. It uses GPS to locate the child and informs their guardian .It also records audio and video after activation.	The complaint needs to be registered by a third party. A witness is necessary.
3.	Child Abuse Reporting by Project Jagriti	It is a mixture of the first and second existing system in addition to it is capable of categorizing emotions.	Login at the time of emergency can be dangerous.

Figure 1. Existing System Limitations

III. METHODOLOGY

The proposed System consists of (i) Raspberry Pi 3b+ (ii) Google speech API (iii) USB MIC (iv) Python libraries.

- The Proposed system takes input from the user using a USB microphone,
- The speech taken from the user is passed to the Google API [5]. It converts the given speech into text.
- A file is made up of pre-defined words to indicate the danger.
- The spoken word is searched with the words in the excel file, loaded using PANDAS library [6].
- If the spoken word is matched with any word in the file then a message is send to the registered number i.e. to the guardian/parent.

ALGORITHM:

Step 1: Take the voice of child as input and record it.

Step 2: Convert the voice into text using speech to text engine.

Step 3: Tokenize the text into words and instantiate the database of keywords.

Step 4: Lemmatize each word using NLTK library [7]. It checks if it is a keyword from the database.

Step 5: If the word is found in database of keyword then go to step 6 else go to step 1.

Step 6: Get the corresponding category of keyword found in speech from the database and report it to responsible guardians or parents through SMS.

Step 7: Stop.

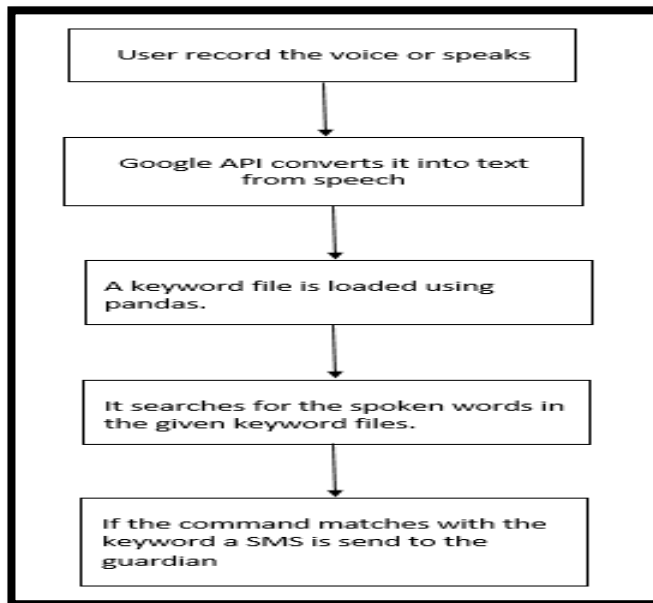


Figure 2. Architecture of Reporting System

IV. RESULTS AND DISCUSSION

We developed a system based on the proposed algorithm using Raspberry pi 3B+ using a external hard disk, portable power source and a usb mic as shown in figure 3.



Figure 3. Raspberry Pi Setup

The system was able to convert speech to text with reasonably good accuracy and extract keywords from it which can be used to send alert message to the guardians or parents.

V. CONCLUSION AND FUTURE SCOPE

Child abuse is a heinous crime committed by persons who are facing issues such as disordered personalities, mental frustration, workload, jealousy or a bad childhood. It is a crime which can be equated to murder as it kills the personality and psychological development of the child. Abuse faced by the child leaves an imprint on his mind and may also develop fear and communication issues in future. Curing such cases takes a long period.

It is therefore, rightly said, Prevention is better than cure. Our project can successfully intervene in child abuse activities and also reduce risk factors and promote protective factors to ensure the well-being of children and families.

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