

AI BASED AUTOMATIC PERSONALITY ASSESSMENT USING SPEECH ANALYSIS

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Abstract: It is necessary to have an awareness of the child's personality in order to comprehend the child's emotional and social development. However, traditional methods of evaluation, such as questionnaires, observations, and interviews, may be laborious, subjective, and pricey. An automated system for assessing a child's personality based on their emotional speech may be created with the help of convolutional neural networks (CNN), which is the approach that was recommended. The system will analyse a child's emotional speech in order to draw conclusions about the child's personality traits. When compared to more traditional methods of assessing personality, the system will need significantly less time and will produce more accurate results.

I. INTRODUCTION

Evaluation of a person's personality is an essential part of psychological research because it seeks to grasp and measure the unique patterns of thinking, emotion, and behavior that make up each individual's personality. Traditional methods of measuring personality typically include the use of questionnaires and interviews; however, recent advancements in machine learning and speech processing have opened the door to new possibilities for automatically determining a person's personality based on their emotional expressions.

In recent years, it has become increasingly vital to have a good understanding of the features of children. Parents, teachers, and professionals in the field of mental health may all benefit from having a better knowledge of the emotions and behaviors of their children thanks to this tool. Vocal cues such as tone, pitch, intensity, and rhythm, which are suggestive of emotional speech, can reveal essential information about a person's emotional state as well as the qualities of their personality.

The widely utilized feature representation method known as mel-frequency cepstral coefficients (MFCCs), which has been demonstrated to be successful in a range of speech processing applications, is utilised to get the spectrum characteristics of speech signals. When paired with convolutional neural networks (CNN), a type of deep learning model that is famous for its ability to automatically extract relevant characteristics from data, MFCCs are capable of being used to automatically evaluate the personalities of children based on the emotional speech that they produce.

MFCCs can be used to automatically analyse children's personalities from emotional speech when combined with convolutional neural networks (CNN), a class of deep learning model renowned for its capacity to automatically extract pertinent characteristics from data.

II. LITERATURE SURVEY

Automatic children's personality assessment from emotional speech

An acoustic analysis of children's voices recorded while they were playing with a robot and another kid served as the foundation for this evaluation. 98 children's voices were captured while they engaged in a variety of activities in order to construct a database. The database now has labels for five paralinguistic traits. Classification techniques that can differentiate between major and secondary categories The Children's Personality Questionnaire's personality qualities were trained using these labels.

Automatic Personality Assessment through Movement Analysis

Inferences about personality traits are made from movement data analysed by machine learning algorithms. Machine learning techniques are used to assess the movement data. With the use of these techniques, movement data may be analysed in order to derive characteristics like rhythm, speed, and smoothness. In order to identify patterns and predict outcomes, machine learning models are used to correlate the acquired data with certain personality traits.

Automatically Assessing Personality from Speech

This article presents preliminary results from the processing of voice input using a personality assessment paradigm and assessments of both human and machine performance. The vocal personality impressions created when a professional speaker is cued to talk while utilising different personality profiles are utilised to encode the "Big Five" NEO-FFI personality traits. Then, human rates who are unfamiliar with the speaker provide ratings to the five criteria. The recordings are examined using signal-based acoustic and prosodic techniques, and the findings demonstrate that the performed personalities, rates evaluations, and first computer classification results all accord strongly.

III. METHOD**Proposed Method:**

The purpose of the suggested method is to automatically determine the children's personalities based on their emotional speech by combining MFCC and CNN. The system will analyze a child's emotional speech signal in order to extract characteristics, and then those features will be utilised to determine the child's personality traits. The suggested technique offers a few benefits over the more traditional approaches to determining a person's personality. Because it takes up less time, is more objective, and offers feedback on a child's emotional condition in real time, it is more helpful in therapeutic situations.

First We Need Collect Audio Data. After Collecting The Audio Data Give To All The Audio Dataset As Input. Then The Dataset Is Need To Be Preprocessing. Psychiatric Data Manager Has The Responsibility Of Training Model Using Convolutional Neural Networks (CNN), A Type Of Deep Learning Model Known For Its Ability To Automatically Extract Relevant Features From Data. Clinical Research Coordinator Responsibility For The Evaluation Phase Then Produced The Output As Personality Traits What Its Predicted.

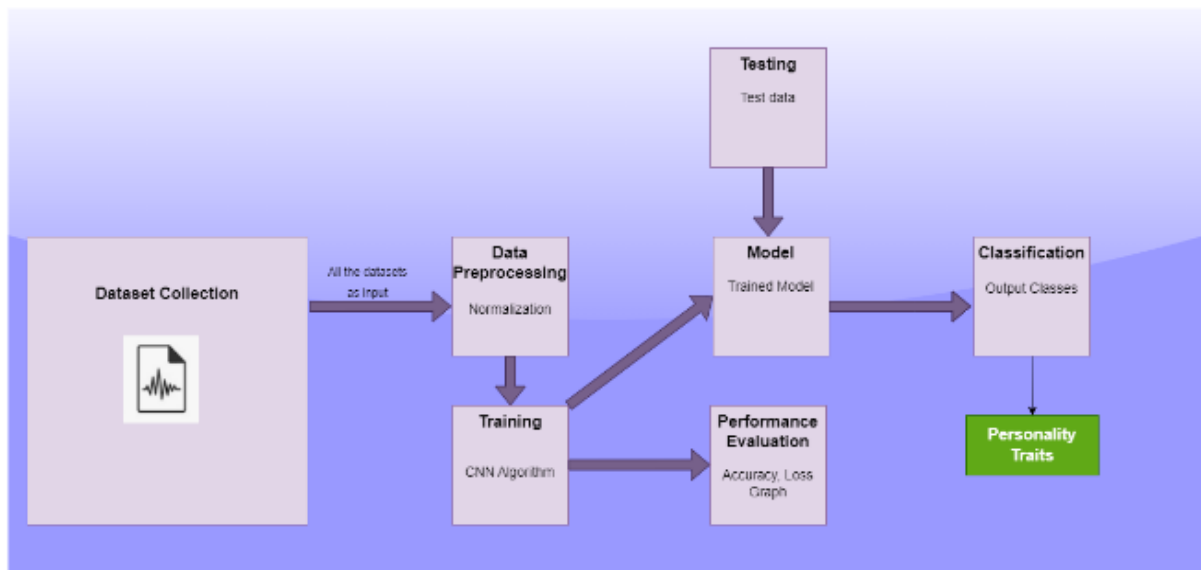


Figure 1. System Architecture

IV. RESULT&DISCUSSION

MFCCs are known to be resistant to noise and other acoustic fluctuations, which makes them well-suited for analyzing emotional speech data, which can often involve variations in pitch, tone, and voice features that are linked with distinct emotions. By feeding CNN with MFCCs as input characteristics, the model has the opportunity to learn potentially meaningful representations of personality-related speech features: CNNs are able to automatically extract important features from input data, including MFCCs, eliminating the need for laborious feature engineering on the part of the engineer.

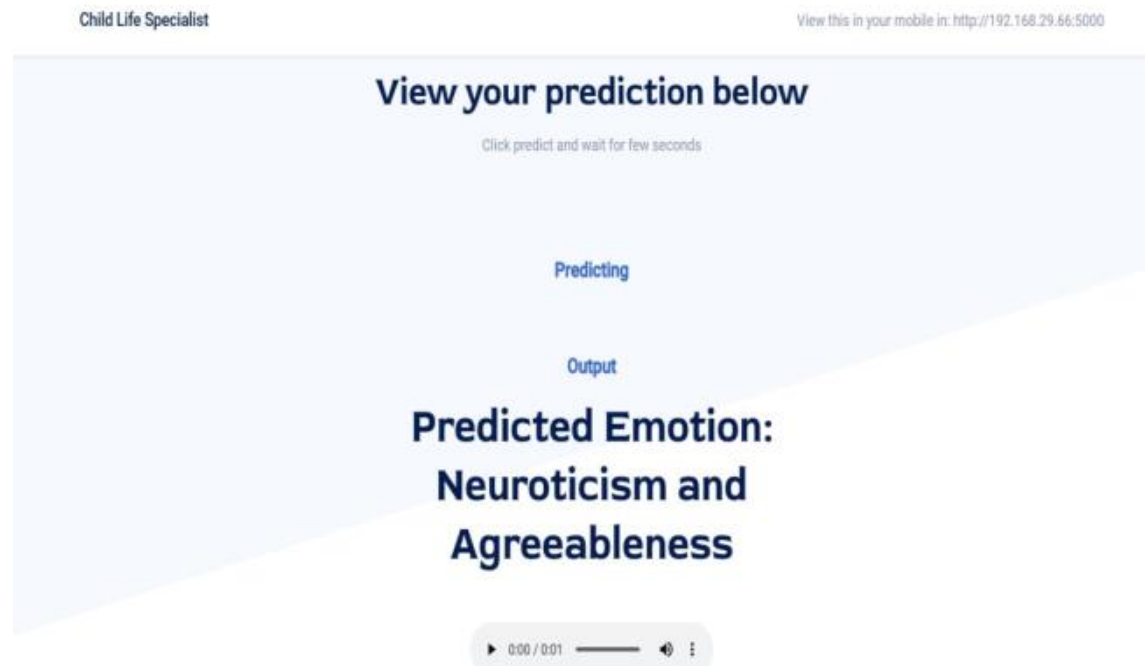


Figure 2. Test Result

This can save time and effort in the process of handcrafting features and enables the model to learn discriminative features directly from the data, perhaps detecting subtle patterns or subtleties in the speech signals that may not be obvious to human observers.

The use of MFCCs in conjunction with CNN for the purpose of personality testing can give an objective and reproducible way for determining a subject's personality based on their emotional speech. The model may be trained and verified with standardized methods, and the assessment process can be automated, hence avoiding the possible biases associated with human judgement or subjective judgements.

V. CONCLUSION

The proposed method utilizes CNN in an effort to arrive at an automated determination of a child's personality based on their emotional speech. The characteristics of a child's personality will be evaluated by the algorithm based on the information that is extracted from the child's emotional speech output. The proposed method offers a number of advantages over the traditional approaches to evaluating a person's personality. These advantages include the ability to provide feedback on a child's emotional state in real time, as well as being faster and more objective. The approach that is being developed has the potential to radically transform the manner in which the personalities of children are evaluated in therapeutic and educational settings.

Future Enhancement

Further it can be tested with video dataset and with different algorithms. The capacity of the system to accommodate many cultures and languages would be a critical advancement in the future.

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