

Automobiles Security by Voice and Pattern Recognition

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Abstract— In this paper we use concept of Voice recognition algorithm and pattern based algorithm that will allow the user to start the car. Algorithm which works on voice command and Fingerprint matching that will prevent the intruder to get access to car system. Fingerprint matching is one of the most promising methods among biometric recognition techniques and has been used for person authentication for a long time. A Remote is provided to user which as a button, by pressing it user can give command to car system and also pattern matching device which accept the fingerprint. The voice and pattern based system will process the input accordingly and respectively car will start.

Key words: Speaker Independent Voice Recognition, Tazti Speaking Software

I. INTRODUCTION

In this paper we introduced a new concept of voice recognition and pattern matching in car which uses the concept of voice recognition and pattern matching algorithm. The digital image processing is used. Voice recognition and finger match is coming to remote control and car navigation system .The user will give the input through microphone and finger matching device which has installed in the remote control of car. The voice signal is commanded in analogue form which needs to be converted into digital form. The car is installed with the large database that composes of all keywords used for commanding the car and existing finger print of user. In terms of applications, there are two kinds of fingerprint recognition systems: verification and identification. In verification, the input is a query fingerprint and an identity (ID); the system verifies whether the ID is consistent with the fingerprint. The output is an answer of yes or no. In identification, the input is only a query fingerprint; the system tries to answer the question. The system is installed with fully computer system. The car is installed with special hardware device, which display the all the available commands and the instructions to the users to make the system user friendly .If users will input the incorrect commands the display will generate error message and provide the most related commands to the user available in the system vocabulary and keywords on display to the users. Automatic Speech Recognition (ASR) and Genetic algorithms (GA) models are used for dictation .This model is installed in the car for dictation. Our concept is totally based on the concept on artificial intelligence and robotics.

II. HOW IT WORKS

Software's are used for processing the input. As you speak, the voice recognition software remembers the way you say each word. This customization allows voice recognition, even though everyone speaks with varying accents and inflection. The voice commands you use in your car are chosen from a fixed vocabulary and are passed on to the car telephone or navigation system via the telephone interface.

The system gives acoustic feedback on everything recognized. Similarly Genetic recognition software remembers the finger pattern and each time when you pass the input via hardware interface it will check with existing database and provide the feedback accordingly.

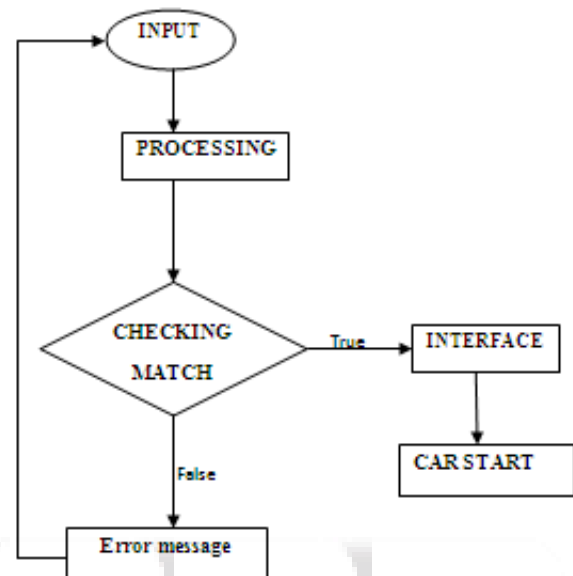


Fig. 1: System work

Faulty operation or error recognition can easily be corrected by simply repeating the desired command.

III. HOW VOICE RECOGNITION WORKS

A voice recognition engine (or speech recognizer) takes an audio stream as input and turns it into a text transcription. The speech recognition process can be thought of as having a front end and a back end.

- The front end processes the audio stream, isolating segments of sound that are probably speech and converting them into a series of numeric values that characterize the vocal sounds in the signal.
- The back end is a specialized search engine that takes the output produced by the front end and searches across three databases: an acoustic model, a lexicon, and a language model.
- The acoustic model represents the acoustic sounds of a language, and can be trained to recognize the characteristics of a particular user's speech patterns and acoustic environments.
- The lexicon lists a large number of the words in the language, and provides information on how to pronounce each word.
- The language model represents the ways in which the words of a language are combined.

For any given segment of sound, there are many things the speaker could potentially be saying. The quality of a recognizer is determined by how good it is at refining its search, eliminating the poor matches, and selecting the more likely matches. This depends in large part on the

quality of its language and acoustic models and the effectiveness of its algorithms, both for processing sound and for searching across the models.

IV. HOW GENETIC RECOGNITION WORKS

Genetic recognition is a biometric that uses a unique, measurable characteristic of a person's finger pattern for identification. Using top-grade biometrics as the basis for its comprehensive software solution, it can effectively enhance your business security, public safety, law enforcement and customer recognition. It matches individual pattern from a live pattern with an individual contained in the system's database. Until now, the high cost of genetic recognition limited its use to government entities and large-scale enterprises. You get top-quality, feature-packed recognition for a remarkably affordable price.

V. EXPERIMENTAL RESULTS

On an average computer system where the voice and genetic matching algorithm is able to execute about 200 verifications per second, results with lesser required solution quality can be obtained within a few seconds. On the other hand major differences in the resulting parameter set values prove the functionality of the genetic algorithm even for systems with very high parameter correlation.

VI. CONCLUSION

We have proposed a novel approach which uses voice recognition and pattern matching recognition. Previously developed system never used this approach this system is helpful when user is accessing the car system service. In future systems other patterns may be used for security purpose like touch of smell, face recognition, video graphical click point, study shows that these patterns are very useful in secure access to car system services.

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