Voice Based Smart Door Control System

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ABSTRACT (Font-Cambria, Bold, Font Size -12)

This article discusses how speech recognition can improve security for persons and property while making door systems more accessible to people with impairments. Facial recognition, fingerprint scanning, and iris scanning are examples of popular biometric technologies. Based on features and qualities used to identify various people for the safety and security of their lives and property, these biometric identifiers are distinctive and one-ofa-kind. Sadly, these biometrics are vulnerable to hacking. A pin or password can be cracked, a person's finger can be severed to perform a fingerprint scan, an eyeball can be removed to perform an iris scan, and a person's photo can be used to perform facial recognition. With the help of speech recognition biometrics technology, these obstacles can be reduced.Technology for voice biometrics is more precise, swifter, more practical. In order to give individuals a quick way to open their doors and simultaneously protect their safety and security, this research study intends to design a door access control system that makes use of voice recognition algorithms. The testing phase and the training phase are the two phases that make up the system. The attributes of a speech are extracted and stored in a database during the training phase. Using voice recognition algorithms and vocal models, the intents from a person's address would be derived during the testing phase. A user is given access if a match is detected.

I.   INTRODUCTION (Font-Cambria, Bold, Font Size -12)

Security issues are becoming more prevalent among people today. The security of everything has become increasingly important in recent years as security has become a crucial concern on a global scale nowadays. This work attempts to replicate the thorough literature review on the numerous gate and door security systems required for domains including home, business, and vehicle security, where the risk of intrusion is rising everyday. Recently, research has been conducted on several door lock security systems, including conventional security systems that give indicators via an alarm. Some door lock security systems now use microcontrollers, GSM, GPS, numerous sensors, software like MATLAB and PROTEUS, biometrics like facial recognition and iris scanning, RFID, Smart Cards, and passwords, among other contemporary technological advancements. Every system has benefits and drawbacks. As a result, even when people are away from home, they need not worry about home security. Doors prohibit people from entering. They are not just made of wood, but also of metals.The security industries are going through a diversity like neverbefore. Therefore, it is

necessary to check the veracity of the systems that are now in use, and research should be done to develop more dependable and sound systems that function intelligently and with minimal effort. The main thing is to offer greater security. Therefore, we have suggested the voicebased door-locking system using Arduino with the notion of most elevated security and safety in mind.

II. METHODOLOGY

This is the construction of the proposed system with explanation of the various components. Unlike other biometric means of authentication such as fingerprint scan, voice recognition is still required to pass through training phase to attain stabilization of the system.

1. Arduino and voice recognition Google speech recognition library used in this project. Voice recognition library used as a part of software. Arduino was used in the hardware section of the research

2. The Programming Languages we are using are Java, C++. The speech recognition library
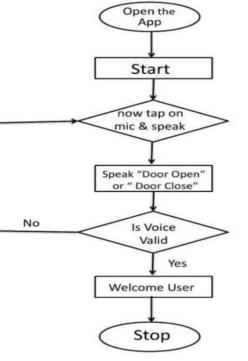
we using are Google Speech Recognition Library.

3. Monitoring and control: Various tests will be carried out at post-execution to ensure that the door access control system is able to perform satisfactorily.
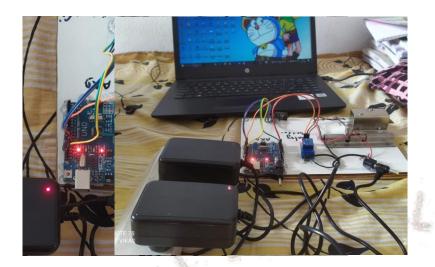
III. MODELING AND ANALYSIS

ANALYSIS AND DESIGN
3.1 Needs analysis: Hardware requirements:
1. ArduinoBoard, 2.Electronic Magnetic, Lock, (SolenoidLock), 3. Wi-Fi Module ESP8266,
4. DoorLock 5. Wire Tire & Jumper Wire, 6. Relay Button

Software requirements: 1. IoT Door Lock App,
2.Android Studio, 3. Arduino IDE

IV. RESULTS

V. CONCLUSION

The Prototype "Voice Based Smart Door" may help developing the low cost voice control smart home systems that could be installed in houses before/after construction.

The proposed Smart Door System using Wireless Technology can further be used in SHAS(Smart Home Automation system).

These appliances can be made to 'Talk' to each other over the internet or

local area Network,It would vastly reduce human effort.

VI. REFERENCES

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