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AMAR DUWAL
RAJ KAJI SHRESTHA
SANJAY RANJIT
SHIVA KUMAR SHRESTHA

ABSTRACT

Voice Command Matching System (VCMS) is the system that matches the commands that the user speaks on the basis of information extracted from the speech waves. This system makes it possible to use the speaker's voice to access computer commands such as opening a notepad, closing notepad, opening facebook, shutting down computer, etc.

There are two main states in this system which are recording state and operating state. In recording state, voice is inputted from the user of the system. Five samples of voice are inputted in this process. Feature extraction is done from inputted voice then the features are saved. Next, in operating state, voice is inputted from user and in the same way feature extraction is done as in recording state. The features are then compared with the saved features. If the features are matched with threshold, respective decision taken meanwhile otherwise the system gives chance for retry.

The features or voiceprint is created by extracting its 13 **Mel Frequency Cepstral Coefficient** (MFCC) per frame. For matching purpose, **Euclidean Distance** (ED) & correlation method is used. ED calculates the distance between two vectors which are the command spoken and the stored voiceprints.

Keywords: *VCMS, MFCC, Euclidian distance*

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LIST OF ABBREVATIONS

1-D	One Dimension
ANN	Artificial Neural Network
ASR	Automatic Speech Recognition
AT & T	American Telephone and Telegraph
Cmd	Command
DCT	Discrete Cosine Transform
DFT	Discrete Fourier Transform
DTW	Dynamic Time Warping
DWT	Discrete Wavelet Transform
ED	Euclidian Distance
FFT	Fast Fourier Transform
GMM	Gaussian Mixture Model
GUI	Graphical user interface
Hz	Hertz
IBM	International Business Machine
IDE	Integrated Development Environment
KHz	Kilo Hertz
LPC	Linear Predictive Coding
MFC	Mel-frequency Cepstral
MFCC	Mel-frequency Cepstral Coefficient
PC	Personal Computer
PCM	Pulse Code Modulation
STT	Speech-to-Text
TTS	Text-to-Speech
UI	User Interface
VCMS	Voice Command Matching System

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