

Intisari

Sebagian besar komputer masih dikontrol dengan menggunakan peralatan tertentu seperti *mouse* dan *keyboard*, padahal teknologi pengenalan suara sudah cukup canggih dan dapat diimplementasikan pada komputer sebagai *control system*. Paper ini akan membahas tentang pembuatan sistem pengenalan suara menggunakan bahasa pemrograman C yang mampu merekam, menampilkan, dan mengenali data hasil rekaman suara secara *real-time*. *Library* yang digunakan pada program adalah PortAudio yang merupakan *Application Programming Interface* (API) untuk merekam suara. Metode *Mel Frequency Cepstral Coefficient* (MFCC) digunakan untuk mengekstrak ciri dari data audio dan *Artificial Neural Network* (ANN) digunakan untuk membuat sistem *data matching* pada sistem pengenalan. Sistem pengenalan suara yang dirancang memiliki persentase akurasi kata “atas” 93%, kata “bawah” 98%, kata “kanan” 86%, kata “kiri” 93%, kata “maju” 78%, kata “mundur” 86%, kata “hidup” 98%, kata “mati” 78%, kata “cepat” 93% dan kata “lambat” 90%.

Kata kunci : Bahasa pemrograman C, pengenalan suara, MFCC, ANN

Abstract

Most computers are still controlled using certain equipment such as a mouse and keyboard, even though speech recognition technology is quite sophisticated and can be implemented on a computer as a control system. This paper will discuss the making of a speech recognition system using C programming language that is capable of recording, displaying, and recognizing sound recording data in real-time. The library used in the program is PortAudio which is an Application Programming Interface (API) for sound recording. The Mel Frequency Cepstral Coefficient (MFCC) is used as a method to extract features from audio data and Artificial Neural Network (ANN) is used to create a data matching system in the recognition system. The voice recognition system that is designed has an accuracy percentage of the word "atas" 93%, the word "bawah" 98%, the word "kanan" 86%, the word "kiri" 93%, the word "maju" 78%, the word "mundur" 86%, the word "hidup" is 98%, the word "mati" is 78%, the word "cepat" is 93% and the word "lambat" is 90%.

Keywords : *C programming language, voice recognition, MFCC, ANN*