

SPEECH EMOTION RECOGNITION FOR JAVANESE LANGUAGE BASED ON DEEP LEARNING

by Fatchul Arifin, Aris Nasuha, Ardy Seto Priambodo, Anggun Winursito, Teddy Surya Gunawan, Irwan Ardiansyah, Abdul Haris Heryani, Kurniawan Budi Kusnanto

ABSTRACT

One of the uses of technology that is currently being developed by many researchers is the automatic detection system for the recognition of human emotions. The recognition of human emotions can be used for various things, for example in the fields of Health and Education. Many studies have been conducted to develop human emotion recognition systems based on human facial expressions based on images. However, in some cases, the use of images on human emotion recognition systems is less effective. Based on these, several studies regarding the design of emotion recognition systems are still being developed using other data objects, one of which is speech-based. Most research on the development of speech-based human emotion recognition systems still focuses on speech in common languages, such as English and Indonesian. There are still not many developments of speech emotion recognition systems in special languages ??such as Javanese. Seeing this, the research in this proposal aims to develop a human emotion recognition system based on Javanese speech.

The research method used is research and development (R&D) which is carried out to develop prototypes product or new product engineering. This research will produce a product in the form of a hardware and software prototype. The focus of the research in the first year was to create a dataset of Javanese sentence emotions. Databases are designed, recorded, and verified using various standards. Selected 10 speakers aged 17-35 years. The speakers used in this dataset research are artists who are members of the kamasetra drama community and are already proficient in acting in various Javanese drama performances. The type of sentence used is 10 sentences for each containing 6 basic emotions (happy, neutral, sad, afraid, angry, and surprised), for a total of 1680 utterances. The dataset has been successfully compiled in Wav format and stored in a data storage service on the internet. The dataset has been tested using 2 types of evaluation. First, Subject Evaluation, which was carried out by several people. They were asked to listen to the results of the Javanese emotion dataset recording. Second, machine learning evaluation, which is done by trying the dataset that has been built to recognize Javanese emotions using machine learning algorithms. Testing is done with the Multi layer Perceptron (MLP) algorithm. The test results show that the validation obtained is 83.83%. Tests using subjective methods and machine learning have shown good dataset performance, so it can be concluded that the dataset is ready to be used for further development of emotion detection systems.

Kata Kunci: *emotion, speech, MFCC, deep learning*