

PEMBACAAN BIBIR OTOMATIS UNTUK KOSA KATA BAHASA INDONESIA SEHARI-HARI MENGUNAKAN METODE FRAME DIFFERENCE DAN IMAGE PROJECTION

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ABSTRACT

Automatic lip reading is one of the studies that is being developed recently. Automatic lip reading has been used for a variety of purposes, such as improving speech recognition and assisting speech training for deaf people. This research presents a new method, the integration of frame difference and horizontal-vertical image projection. The method proposed is part of the appearance approach, in addition to using an image projection as a dimensional reduction. We apply the proposed method of automatic lip reading to classify five daily words in Indonesian. We used 200 data recorded from the front and focused around the lips. MLP (Multi Layer Perceptron) is used as a classifier. The model of the proposed method is evaluated using 4-fold cross-validation. Of the four algorithms in the proposed method, the best results were achieved with a combination of folded lips and double difference images. The comparison between the proposed method and 2D-DCT (2 Dimension - Discrete Cosine Transform) shows that the proposed method exceeds 2D-DCT in CA (Classification Accuracy) and AUC (Area Under ROC Curve). The proposed method achieves 96.5% at CA and 0.9993 at AUC, while 2D-DCT reaches 94% at CA and 0.9978 at AUC.

Kata Kunci: *automatic lip reading, frame difference, image projection*