

ABSTRACT

One of the causes of many accidents on the street is the disruption of the driver's concentration while driving. Accidents don't merely have an impact on material loss, but also can affect on losing one's life.

In this Final Project, the feature extraction method used is the Principal Component Analysis (PCA) method, because it can reduce the dimensions of the data without removing important information from the data itself. PCA can solve problems where the system finds it difficult on handling data input with very high dimensions by reducing the dimensions to a minimum without eliminating information within. While the classification method used is the Support Vector Machine (SVM) method. The SVM method works by separating data according to its linear.

The results of this study are the system can recognize facial expressions and classify them into two types of facial expressions, normal and drowsiness using data from Yawning Detection Dataset (YawDD). The performance obtained 98% accuracy from the system by using the Principal Component Analysis (PCA) feature extraction method with eigenface parameters as feature extraction by classification method. Support Vector Machine (SVM) uses the One Against One (OAO) and One Against All (OAA) method) with the polynomial kernel using the option 10 kernel parameter at an 512×512 pixels image size.

Keywords: Accident, expressions, PCA, SVM